جمهورية العراق

Republic of Iraq

وزارة التعليم العالي والبحث العلمي

Ministry of Higher Education & Scientific Research

جهاز الاشراف والتقويم العلمي

Apparatus of Supervision & Scientific Evaluation

Readiness Review Worksheet (2023-2024 Review Cycle)

المجلس العراقي لاعتماد التعليم الهندسي

Iraqi Council of Accreditation for Engineering Education

Dhul-Qi'dah , 1445 May, 2024

Readiness Review Worksheet

For the Academic Year 2023-2024

Contact Information

University:
College:
Department:
Dean: Signature:
Email: Date:
Mobile:
Head of Dept.:
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Evaluation Judgment

The program readiness review worksheet summarizes the initial evaluation judgments of each program being considered for accreditation and/or extension of accreditation. It summarizes the identification of shortcomings with respect to criteria. Shortcomings are shown as a Deficiency (**D**), Weakness (**W**), or Concern (C). If no shortcomings are identified the program is considered to be in Compliance to criteria (**Y**). Sometimes suggestions (Observations) are offered to assist compliant programs in its continuous improvement (O). The evaluation judgment of each performance indicator is carried out by the aid of rubrics specially designed for this purpose (See the attached guide).

Deficiency (D): A deficiency indicates that a criterion, policy or procedure is not satisfied. Therefore, the program is not in compliance with the criterion, policy, or procedure.

Weakness (W): A weakness indicates that a program lacks enough strength of compliance with a criterion, policy or procedure in a way that ensures that the quality of the program will not be compromised. Therefore, remedial action is required to strengthen compliance with the criterion, policy or procedure prior to the next review.

Concern (C): A concern indicates that a program currently satisfies a criterion, policy, or procedure; however, the potential exists for the situation to change such that the criterion, policy, or procedure may not be satisfied.

Observation (O): An observation is a comment or suggestion that does not relate directly to the current accreditation action but is offered to assist the institution in its continuing efforts to improve its programs.

Criterion 1: Program Educational Objectives	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
1.1 Strategic Planning			
1.1.1 Applicable published strategic plan including vision, mission and objectives (statement is well-defined, achievable and publicized).	Y		
1.1.2 Consistency of the program strategic plan with the institutional one.	Y		
1.2 Statement of PEOs			
1.2.1 Applicable published and publicized PEOs (statements are well-defined, measurable and achievable)	Y		
1.3 PEOs Consistency with the Mission Statement			
1.3.1 Relating PEOs to the institution's mission	Y		
1.4 Program Constituencies			
1.4.1 What Constituencies are involved?	Y		
1.4.2 How the PEOs meet the needs of these constituencies?	Y		
1.5 PEOs Review Process			
1.5.1 Processes for periodical review of the PEOs	Y		
1.5.2 How constituencies are involved in this process?	Y		
1.5.3 How to ensure that PEOs remain consistent with the institutional mission, the program constituents' needs and these criteria?	Y		

Criterion 2: Graduate Outcomes	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
2.1 Adopted Graduate Outcomes			
2.1.1 Applicable published and publicized GOs.	Y		
2.1.2 Coherence with the seven GOs of this criterion. It is required to recognize the wider scope of ethics including societal and environmental aspects.	Y		
i) An ability to distinguish, identify, define, formulate, and solve engineering problems by applying principles of engineering, science and mathematics.	Y		
ii) An ability to produce engineering designs that meet desired needs within certain constraints by applying both analysis and synthesis in the design process.	Y		
iii) An ability to create and carry out proper measurement and tests with quality assurance, analyze and interpret results, and utilize engineering judgment to make inferences.	Y		
iv) An ability to skillfully communicate orally with a gathering of people and in writing with various managerial levels.	Y		
v) An ability to perceive ethical and professional responsibilities in engineering cases and make brilliant judgments taking into account the consequences in worldwide financial, ecological and societal considerations.	Y		
vi) An ability to perceive the continual necessity for professional knowledge growth and how to find, assess, assemble and apply it properly.	Y		
vii) An ability to work adequately on teams and to set up objectives, plan activities, meet due dates, and manage risk and uncertainty.	Y		
2.2 Relating GOs to PEOs			
2.2.1 How the GOs prepare graduates to attain the PEOs.	Y		

Criterion 3: Curriculum	**Head of Dept.**	**Reviewer**	
	D, W or Y	**D, W, C, O or Y**	**Comments**
3.1 Program Structure and Content			
3.1.1 Study Plan: adequate attention and time to each component including summer training.	**Y**		
3.1.2 Alignment with PEOs: consistent with the objectives of the program and institution	**Y**		
3.1.3 Attainment of GOs: support the development of a range of intellectual and practical skills and attainment of GOs	**Y**		
3.1.4 Prerequisite Structure: Showing dependency and integration of a balanced curriculum	**Y**		
3.1.5 Subject Areas Requirements: (in terms of hours and depth) including college level mathematics and basic sciences with experimental experience, engineering topics appropriate to the field of study and general education that complements the technical content in consistence with program and institution objectives.	**Y**		
3.1.6 Major Design Experience: that prepares students for engineering practice where public health and safety, global, cultural, social, environmental, and economic factors must be considered (final-year design project based on knowledge and skills acquired in earlier course work and incorporating appropriate engineering standards and multiple realistic constraints	**Y**		
3.1.7 Teaching and Learning Strategies: How program teaching/learning and assessment strategies are appropriate to, consistent with, and support the attainment of GOs.	**Y**		

Criterion 3: Curriculum (Continued)	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
3.2 Relating Courses Learning Outcomes to GOs			
3.2.1 Abbreviated syllabus of each course must be available showing CLOs.	Y		
3.2.2 Mapping CLOs to GOs: How the courses learning outcomes actually lead to the achievement of graduate outcomes. The relationships of CLOs to GOs might need preparing a "Course Portfolio" for each course. A typical course portfolio contents are: course number and name, credits and contact hours, instructor's or course coordinator's name, text book (title, author and year), other supplemental materials, specific course information (brief description of the content of the course or catalog description, prerequisites or co-requisites and indicating whether a required, elective, or selected elective course in the program), specific objectives of the course and specific learning outcomes, mapping of CLOs with GOs, strategies of teaching/learning and assessment to achieve the outcomes, copy of notes, copies of exams (instruction copies), and copies of student work.	Y		

Criterion 4: Continuous Improvement	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
4.1 Achievement of Graduate outcomes			
4.1.1 Assessment Processes: used to gather data upon which the evaluation of each student outcome is based. Examples of data collection processes may include, but are not limited to, specific exam questions, student portfolios, internally developed assessment exams, senior project presentations, nationally-normed exams, oral exams, focus groups, industrial advisory committee meetings, or other processes that are relevant and appropriate to the program.	Y		
4.1.2 Frequency of Assessment Processes	Y		
4.1.3 Expected Level of Attainment	Y		
4.1.4 Results of Evaluation and Analysis: the extent to which each of the graduate outcomes is being attained	Y		
4.1.5 Documentation: how the data gathered, and the results of the performance are documented and maintained in addition to the materials, including student work and other tangible materials that demonstrate achievement of the GOs	Y		
4.2 Actions for Continuous Improvement			
4.2.1 Systematic Data Utilization in Continuous Improvement: how the results of evaluation processes for the graduate outcomes and any other available information have been systematically used as input in the continuous improvement of the program.	Y		
4.2.2 Re-assessment of Changes Results: how results of any changes are subjected to re-assessment to find whether effective or not.	Y		
4.2.3 Future Plans: any significant future program improvement plans based upon recent evaluations.	Y		
4.2.4 Brief Rationale of Planned Changes (for each of the planned changes).	Y		

Criterion 4: Continuous Improvement (Continued)	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
4.2.5 Quality Management System Documentation	Y		
4.2.5.1 What does the Quality Management System provide for PEOs, GOs and curriculum review? Information such as minutes from meetings where the assessment results are evaluated, and recommendations are made is required.	Y		
4.2.5.2 Industrial Advisory Committee: The feedback and inputs from stakeholders (industry advisors, students and alumni), benchmarking and external examiners. For a new program, it also needs to discuss the feasibility of introducing the new program.	Y		
4.2.5.3 Other information, if available, used to assist in continuous improvement such as (participation of faculty, support staff and students in the continual quality improvement process, their professional practice in industry or collaborative projects and invited lecturers or speakers from industry or public bodies.	Y		

Criterion 5: Students	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
5.1 Student Admission			
5.1.1 Requirements of admission (have policies for accepting new students).	Y		
5.1.2 Processes of admission (enforce policies for accepting new students).	Y		
5.1.3 High-school grades for freshman admissions for past five years.	Y		
5.2 Student Performance and Progress			
5.2.1 Processes by which student performance is evaluated in relation to student learning outcomes.	Y		
5.2.2 Processes by which student progress is monitored in relation to prerequisites attainment.	Y		
5.2.3 How the program ensures that students are meeting prerequisites and how it handles the situation when a prerequisite has not been met.	Y		
5.2.4 How the program documents that students are meeting prerequisites.	Y		
5.3 Students Transfer			
5.3.1 Requirements and processes for accepting transfer students (Have enforced policies for accepting transfer students).	Y		
5.3.2 Transfer credits and clearing (equivalence/exempt) instructions (Have and enforce policies for awarding academic credit for courses taken at other institutions).	Y		
5.3.3 Ministry-mandated articulation requirements that impact the program.	Y		
5.3.4 Transfer students for past five years	Y		

Criterion 5: Students (Continued)	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
5.4 Students' Advising and Extracurricular Activities			
5.4.1 Processes by which students are advised regarding curricular and carrier matters.	Y		
5.4.2 Processes by which students are advised regarding extracurricular activities for enthusiasm, motivation and character building in management, leadership, arts, sports, societal and environmental activities.	Y		
5.4.3 How often students are advised and who provides the advising (program faculty, departmental, college or university advisor). Sufficiency of faculty members for advising and counseling students in four major areas; psychological, academic, professional, and extracurricular aspects.	Y		
5.5 Graduation Requirements			
5.5.1 Graduation requirements for the program (the degree awarded).	Y		
5.5.2 Have and enforce well-documented procedures to ensure that students who graduate meet all graduation requirements.	Y		
5.5.3 Transcripts of some of the most recent graduates: how the program and any program options are designated on the transcript.	Y		

Criterion 6: Faculty	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
6.1 Faculty Qualification			
6.1.1 Appropriate faculty qualifications: Composition, size, credentials, and experience of the faculty including industrial experience and industrial involvement.	Y		
6.1.2 Adequate faculty to cover curricular areas: adequate to cover all the curricular areas of the program and meet the program criteria including their competencies in implementing the outcome-based approach to education.	Y		
6.1.3 The overall competence of the faculty may be judged by such factors as education, diversity of backgrounds, engineering experience, teaching effectiveness and experience, ability to communicate, enthusiasm for developing more effective programs, level of scholarship and participation in professional societies.	Y		
6.2 Faculty Workload			
6.2.1 Percentage of faculty work time devoted to the program.	Y		
6.3 Faculty Size			
6.3.1 Extent and quality of student-faculty interaction: effective teaching.	Y		
6.3.2 Extent and quality of student advising and counseling.	Y		
6.3.3 Extent and quality of university service activities: program service and services required to the university, industry and community through research, publication, and consultancy activities.	Y		
6.3.4 Extent and quality of interactions with industrial and professional practitioners and employers.	Y		

Criterion 6: Faculty (Continued)	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
6.4 Faculty Development			
6.4.1 Extent and quality of professional development activities for each faculty member including opportunities in further education, industrial exposure, and implementing the outcome-based approach to education.	Y		
6.4.2 Role of scientific research achievements in the professional development of the faculty.	Y		
6.4.3 Role of the offered post-graduate programs in the professional development of the faculty.	Y		
6.5 Faculty Authority and Responsibility			
6.5.1 Role of the faculty with respect to course creation, modification, and evaluation	Y		
6.5.2 Role of the faculty in the definition and revision of PEOs and GOs and their role in the attainment of the GOs	Y		
6.5.3 Roles of others on campus (e.g. dean or provost) with respect to these areas	Y		

Criterion 7: Administrative Support	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
7.1 Leadership and Administrative Services			
7.1.1 Leadership adequacy to ensure the quality and continuity of the program.	Y		
7.1.2 Leadership involvement in making decisions that affect the program.	Y		
7.1.3 How clearly tasks are assigned, and authorities are delegated.	Y		
7.1.4 How effective is the organizational structure in serving the Quality Management System.	Y		
7.1.5 Efficiency of documentation for all activities and issues.	Y		
7.1.6 Adequacy of administrative services provided to the program.	Y		
7.2 Faculty Support			
7.2.1 Faculty Recruitment.	Y		
7.2.2 Faculty Retention and Promotion.	Y		
7.2.3 Faculty Development.	Y		
7.3 Technical and Administrative Staff Support			
7.3.1 Staff Size and Qualification.	Y		
7.3.2 Staff Recruitment and Retention.	Y		
7.3.3 Staff Development and Promotion.	Y		

Criterion 8: Financial Support	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
8.1 Funding Resources			
8.1.1 Process used to establish the program's budget and continuity of funding resources needed to meet the program needs including sources of both permanent and temporary funds	Y		
8.2 Program Budget:			
8.2.1 Teaching and Learning Financial Support.	Y		
8.2.2 Facilities Financial Support.	Y		
8.2.3 Faculty Financial Support.	Y		
8.2.4 Staff Financial Support.	Y		

Criterion 9: Facilities	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
9.1 Built Spaces and Associated Equipment			
9.1.1 Offices and associated equipment.	Y		
9.1.2 Classrooms and associated equipment.	Y		
9.1.3 Laboratories and associated tools and equipment.	Y		
9.1.4 Campus infrastructure and supportive facilities.	Y		
9.2 Computing Assets			
9.2.1 Adequate computing and information resources in addition to those described in laboratories, which are used by the students in the program including workstations, servers, storage, networks and software.	W		
9.2.2 Accessibility of university-wide computing resources available to all students via various locations and the hours the various computing facilities are open to students.	W		
9.2.3 Adequacy of these facilities to support the scholarly and professional activities of the students and faculty in the program.	W		
9.3 Students Direction and Safety Precautions			
9.3.1 How students in the program are provided appropriate direction regarding the use of the tools, equipment, computing resources, and laboratories	W		
9.3.2 How the facilities, tools, and equipment used in the program are safe for their intended purpose	W		
9.4 Maintenance and Upgrading of Facilities			
9.4.1 Policies and procedures for maintaining and upgrading the tools, equipment, computing resources, and laboratories used by students and faculty in the program.	W		

Criterion 9: Facilities (Continued)	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
9.5 Library Services			
9.5.1 Adequacy of the library's technical collection relative to the needs of the program and the faculty.	Y		
9.5.2 Adequacy of the process by which faculty may request the library to order books or subscriptions.	Y		
9.5.3 Library's systems for locating and obtaining electronic information, and any other library services relevant to the needs of the program.	Y		

Specific Program Criteria	Head of Dept.	Reviewer	
	D, W or Y	D, W, C, O or Y	Comments
10.1 Curricular Topics (if any): to be imbedded in criterion 5.	Y		
10.2 Faculty Qualifications (if any): to be imbedded in criterion 6.	Y		
10.3 Other (if any): to be imbedded in the suitable criterion.			

استبانة المراجعة الذاتية للجاهزية
وآلية عمل لمراجعة الجاهزية قبل إعداد تقرير التقييم الذاتي

آلية عمل لمراجعة الجاهزية:

تشكيل لجنة في القسم تتولى الآتي:

1. الاطلاع على اصدارات المجلس ذات الصلة.
2. جمع المعلومات اللازمة لاستبانة مراجعة الجاهزية.
3. تحليل المعلومات وتبويبها على وفق فقرات الاستبانة وتحديد الفجوة.
4. دراسة أوجه القصور وتحديد ما يلزم لمعالجة نقاط الضعف وتعزيز نقاط القوة.
5. تحديد الأولويات في ضوء الموارد المتاحة ودرجة الحاجة.
6. وضع خطة التحسين في ضوء الفرص المتاحة والقيود المفروضة (التهديدات).
7. تحديد أهداف واضحة للخطة، ذات سقوف زمنية، مع مؤشرات قياس مدى تحققها.
8. تحديد المسؤولين عن تنفيذ كل فقرة في الخطة.
9. مصادقة مجلس القسم على الخطة واصدار أوامر التكليف للمنفذين.

استبانة المراجعة الذاتية للجاهزية

ت	السؤال	الجواب	الأدلة المطلوبة
1	**المعيار الأول: أهداف البرنامج التعليمية:**		
1-1	هل توجد رؤية ورسالة للقسم والكلية والجامعة؟	نعم	نسخة من الرؤية والرسالة لكل منها.
	هل تتوافق رؤية ورسالة القسم مع ما للكلية والجامعة؟	نعم	بيان كيفية توافق المحتوى كاملاً.
	هل توجد أهداف إستراتيجية للقسم والكلية والجامعة؟	نعم	نسخة من الأهداف.
	هل الرؤية والرسالة والأهداف معلنة؟	نعم	أماكن النشر.
	هل توجد خطط عمل مطبقة وموثقة لتحقيق الأهداف؟	نعم	الخطة وتقارير متابعة تنفيذها.
2-1	هل توجد أهداف تعليمية للبرنامج؟	نعم	نسخة من الأهداف التعليمية.
	هل الأهداف التعليمية معلنة؟	نعم	أماكن النشر.
3-1	هل تتوافق الأهداف التعليمية مع رسالة القسم؟	نعم	بيان كيفية توافق المحتوى كاملاً.
4-1	من هم أصحاب المصلحة المعنيين بالبرنامج؟	نعم	تحديد الذين تم التعامل معهم فعلاً.
	هل هناك لجنة استشارية للصناعة في القسم؟	نعم	أسماء وتخصصات ومواقع عمل.
	هل تلبي الأهداف التعليمية احتياجات المعنيين؟	نعم	استبانات ومحاضر اجتماعات.
5-1	هل تتم مراجعة الأهداف التعليمية دورياً؟	نعم	آلية المراجعة.
2	**المعيار الثاني: محصلات الخريجين:**		
1-2	هل توجد محصلات تعلم محددة لخريجي البرنامج؟	نعم	نسخة من محصلات الخريجين
	هل هي متوافقة مع المحصلات المحددة في المعايير؟	نعم	مصفوفة التوافق.
	هل محصلات الخريجين معلنة؟	نعم	أماكن النشر.
2-2	هل يوجد توافق بين المحصلات والأهداف التعليمية؟	نعم	مصفوفة التوافق.
3	**المعيار الثالث: المنهاج الدراسي:**		
1-3	هل توجد خطة دراسية؟	نعم	نسخة من الخطة الدراسية؟
	هل يتوافق المنهاج الدراسي مع الأهداف التعليمية؟	نعم	بيان كيفية التوافق.
	هل يحقق المناهج الدراسي محصلات الخريجين؟	نعم	مصفوفة التوافق.
	هل توجد بنية عمودية وأفقية للمنهاج الدراسي؟	نعم	المخطط الانسيابي للمنهاج؟
	هل يستوفي المنهاج المكونات الأساسية المطلوبة؟	نعم	ملء جدول (3-1).
	هل يوفر مشروع التخرج فرصة لممارسة التصميم؟	نعم	نماذج من مشاريع التخرج.
	هل تطبق أساليب حديثة للتعليم والتعلم وتقييم الطلبة؟	نعم	نماذج من الحقائب التعليمية.
2-3	هل توجد حقائب تعليمية نظامية لكافة المواد؟	نعم	نماذج من الحقائب التعليمية.
	هل تتوافق نواتج تعلم المواد مع محصلات التعلم؟	نعم	مصفوفة التوافق في كل حقيبة.

4	المعيار الرابع: التحسين المستمر:		
1-4	هل يجري قياس مباشر لمحصلات التعلم المتحققة؟	نعم	نماذج اختبارات (Rubric) للطلبة.
	هل يجري قياس غير مباشر للمحصلات المتحققة؟	نعم	نماذج من الاستبانات.
	هل هناك تواتر لعمليات القياس بنوعيها أعلاه؟	نعم	الجداول الزمنية.
	هل هناك مستوى مخطط لتحقق محصلات الخريجين؟	نعم	قرار المستوى المنشود.
	هل يتم تحليل وتقييم نتائج القياس بنوعيها أعلاه؟	نعم	بيانات التحليل والتقييم.
	هل يتم توثيق عمليات القياس والتحليل والتقييم؟	نعم	نماذج من التوثيق.
2-4	هل يتم توظيف النتائج أعلاه في رسم خطة التحسين؟	نعم	نسخة من الخطة تبين الكيفية والآلية.
	هل يجري إعادة القياس بعد التحسين لفحص الجدوى؟	نعم	نماذج من عملية إعادة القياس.
	هل يتم توظيف النتائج المستجدة في خطة مستقبلية؟	نعم	نسخة من الخطة المستقبلية.
	هل تحدد مبررات الخطة المستقبلية (نتائج منشودة).	نعم	نسخة من مبررات الخطة المستقبلية.
	هل يتم توثيق عمليات التخطيط والتحسين المستمر؟	نعم	نماذج من التوثيق.
5	المعيار الخامس: الطلبة:		
1-5	هل هناك ضوابط لقبول وتسجيل الطلبة؟	نعم	متطلبات القبول واجراءات التسجيل.
	هل مستوى الطلبة المقبولين يناسب البرنامج؟	نعم	معدلات الطلبة لخمس سنوات مضت.
	هل يتوافق العدد المقبول مع الطاقة الاستيعابية؟	نعم	مقارنة بين العدد المخطط والفعلي.
2-5	هل هناك نظام لمتابعة السيرة الدراسية وتقييم الأداء؟	نعم	توثيقات اللجنة الامتحانية.
3-5	هل هناك ضوابط لانتقال الطلبة؟	نعم	نماذج من المقاصة وتعليماتها.
4-5	هل يمارس الإرشاد النفسي والأكاديمي والمهني؟	نعم	تقارير ومحاضر.
4-5	هل هناك نشاطات لا صفية (أدبية، فنية، رياضية ..)؟	نعم	تقارير ومحاضر.
5-5	هل يجري ضبط استيفاء الطلبة لمتطلبات التخرج؟	نعم	نماذج من وثائق التخرج.
6	المعيار السادس: هيئة التدريس:		
1-6	هل تفي مؤهلات هيئة التدريس لتنفيذ البرنامج؟	نعم	ملء جدول (6-1) وسيرهم الذاتية.
	هل يمتلك مدرسي مواد التصميم خبرة ميدانية؟	نعم	المشاريع التي قاموا بتصميمها.
2-6	هل يفي عبء التدريسيين الموجه للبرنامج، بالغرض؟	نعم	ملء جدول (6-2).
3-6	هل يفي عدد التدريسيين للتفاعل المطلوب مع الطلبة؟	نعم	نسبة تدريسي/طالب.
4-6	هل يجري تطوير مختلف مهارات هيئة التدريس؟	نعم	نشاطات التطويرلخمس سنوات خلت.
5-6	هل يجري اشراك التدريسيين في صنع القرارات؟	نعم	أمثلة تبين المسؤوليات والصلاحيات.

7	**المعيار السابع: الدعم الاداري:**		
1-7	كيف تشارك القيادات الجامعية في صنع القرارات؟	نعم	هيكل تنظيمي ومهام وصلاحيات.
	ما دور الإدارات الجامعية في ضمان جودة البرنامج؟	نعم	أمثلة على الدعم المباشر للبرنامج.
	ما مدى كفاية الخدمات الإدارية المقدمة للبرنامج.	نعم	أمثلة على الخدمات المقدمة.
2-7	ما مدى كفاية الدعم لتوظيف ما يلزم من تدريسيين؟	نعم	مقارنة المخطط بالمتوافر.
	ما مدى كفاية الدعم للاحتفاظ بهم وترقيتهم؟	نعم	احصاءات ونسب واستبانات.
	ما مدى كفاية الدعم لتطوير مهاراتهم؟	نعم	احصاءات ونسب واستبانات.
3-7	هل يفي عدد الموظفين الفنيين والإداريين بالغرض؟	نعم	أعدادهم بحسب المؤهلات.
	ما مدى كفاية الدعم لتوظيف ما يلزم من موظفين؟	نعم	مقارنة المخطط بالمتوافر.
	ما مدى كفاية الدعم لتطويروترقية الموظفين؟	نعم	احصاءات ونسب واستبانات.
8	**المعيار الثامن: الدعم المالي:**		
1-8	ما هي مصادر تمويل البرنامج؟	نعم	مصادر التمويل وكيفية ادامتها.
	هل هناك آلية لرسم الموازنة المالية للبرنامج؟	نعم	شرح الآلية.
2-8	هل تفي التخصيصات لدعم أنشطة التعليم والتعلم؟	نعم	بيانات الدعم المالي للأنشطةالتعليمية.
	هل تفي التخصيصات لتوفير البيئة التعليمية المناسبة؟	نعم	بيانات الدعم المالي للبيئة التعليمية.
	هل تفي لتوفير وصيانة وتحديث وتشغيل المرافق؟	نعم	بيانات الدعم المالي للبنى التحتية.
	هل تفي التخصيصات لتطوير هيئة التدريس؟	نعم	بيانات الدعم المالي لتطويرهم.
	هل تفي التخصيصات لتطوير الموظفين؟	نعم	بيانات الدعم المالي لتطويرهم.
9	**المعيار التاسع: المرافق والتسهيلات:**		
1-9	هل تفي غرف العمل المكتبي وتجهيزاتها بالمتطلبات؟	نعم	وصف وأعداد مبوبة حسب النوع.
	هل تفي القاعات الدراسية وتجهيزاتها بالمتطلبات؟	نعم	وصف وأعداد مبوبة حسب النوع.
	هل تفي المختبرات والورش وتجهيزاتها بالمتطلبات؟	نعم	وصف وأعداد مبوبة حسب النوع.
	هل تفي مرافق الحرم وتجهيزاتها بالمتطلبات؟	نعم	وصف وأعداد مبوبة حسب النوع.
2-9	هل تفي خدمات الحاسوب والانترنت بالمتطلبات؟	كلا	وصف وأعداد وساعات الإتاحة.
3-9	ما مدى كفاية علامات دلالة توجيهية كافية؟	نعم	أمثلة من داخل وخارج الأبنية.
	ما مدى كفاية تحوطات الصحة والسلامة؟	كلا	وصف مبوب حسب نوع المنشأ.
4-9	ما مدى فاعلية صيانة وتحديث المنشآت والتجهيزات؟	كلا	بيانات عن فعاليات الصيانة.
5-9	ما مدى كفاية خدمات المكتبة للطلبة والتدريسيين؟	نعم	احصاءات ونسب واستبانات.
10	**المعيار العاشر: إختصاص البرنامج:**		
1-10	هل يحقق المنهاج متطلبات الاختصاص العالمية؟	نعم	تقديم ما يثبت التحقق من ذلك.
	ما مدى انعكاسات ذلك على مؤهلات هيئة التدريس؟	نعم	مناقشة.
	ما مدى انعكاسات ذلك على المختبرات؟		مناقشة.

REPUBLIC OF IRAQ
MINSTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH
AL-NAHRAIN UNIVERSITY
COLLEGE OF ENGINEERING

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

العدد: هـ ن م د / ١٢٨
التاريخ ٢٩ / ٤ / ٢٠٢٤

امر داخلي

م/ لجنة مراجعة الجاهزية لقسم الهندسة المدنية

تقرر تشكيل اللجنة ادناه لاكمال متطلبات مراجعة الجاهزية للاعتماد الهندسي البرامجي لقسم الهندسة المدنية للعام الدراسي الحالي.

المعيار	المسؤولين عن المعيار
الاول-الثاني-الثالث	أ.د. جبار حمود عبدالنبي + أ.م.د. عبد الخالق جبار عبد الرضا + م.د. ياسر محمود كاظم
الرابع-الخامس-السادس	أ.م.د. حسن موسى جواد + أ.م.د. زينة رياض صالح + أ.م.د. احمد عبد الحافظ مصطفى
السابع-الثامن-التاسع	أ.م.د. رائد احمد داود + أ.م.د. ضياء مصطفى ذيبان + م.د. احمد فرحان مويز
العاشر	أ.م.د. سلطان احمد داود + أ.م.د. محمد علي اكرم

على ان تنجز اللجنة اعمالها خلال 7 ايام.

المرفقات:

- استمارة استبانة المراجعة الذاتية للجاهزية والية عمل لمراجعة الجاهزية.

أ. د. مصعب عايد كصب
رئيس قسم الهندسة المدنية
2024/04/29

نسخة منه الى
- مقررية القسم
- الملف

المعيار الاول

اهداف البرامج التعليمية

رؤية و رسالة للقسم و الكلية و الجامعة

فقرة (1-1-1)

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقم المحضر: 11
تاريخ المحضر: 2024/03/10

محضر الاجتماع الحادي عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ.ن/1304/2/1 في 2023/10/04، اجتماعها الحادي عشر في يوم الاحد الموافق 2024/03/10 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: المواد الدراسية للماجستير في جامعة الكوفة

ناقشت اللجنة العلمية اعتماد المواد الدراسية لدراسة الماجستير للفصلين ضمن تخصص هندسة المنشآت الهيدروليكية/قسم الهندسة المدنية/كلية الهندسة/جامعة الكوفة بموجب كتاب الوزارة ذي العدد ب ت 1745/5 في 2024/2/13، وأوصت اللجنة بما يلي:

التوصية: الموافقة على اعتماد المواد الدراسية للتخصص المشار اليه ضمن الكتاب أعلاه مع ملاحظة التالي:

1) ان ترجمة مادة (Artificial Intelligence in water resources) يجب ان يكون (الذكاء الاصطناعي في الموارد المائية).
2) المادة (المنشآت الهيدروليكية) يفترض انه قد تم تدريسها في الدراسات الأولية كونها من اختصاص القسم ويفترض في الدراسات العليا ان يتم التوسع في المادة واضافة كلمة (المتقدمة).
3) اسم المادة (Advanced Design of Reinforced Concrete) يجب ان يكون (Advanced Reinforced Concrete Design).
4) ان ترجمة مادة (optimization) يجب ان يكون (الامثلية)

ثانيا: متطلبات الاعتماد البرامجي

ناقشت اللجنة العلمية محضر لجنة الخبراء المؤرخ في 2024/3/9 والخاص باعداد رسالة ورؤية قسم الهندسة المدنية وكما في المرفقات واطلعت على محاور المحضر ومنها اهداف البرنامج التعليمية، محصلات الخريجين، المنهاج الدراسي للدراسات الاولية، وأوصت اللجنة بما يلي:

التوصية: الموافقة على فقرات المحضر اعلاه.

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية		محضر اللجنة العلمية رقـم المحضر: **11** تأريخ المحضر: **2024/03/10**

أ.م.د. ضياء مصطفى ذيبان	**أ.م.د. حسن موسى جواد**	**أ.م.د. هيثم علاء حسين**	**أ.د. حاتم عبد الكريم رشيد**	**أ.د. مصعب عايد كصب**
عضوا ومقررا	**عضوا**	**عضوا**	**عضوا**	**عضوا**
2024/03/10	**2024/03/10**	**2024/03/10**	**2024/03/10**	**2024/03/10**

أ.د. علاء حسين عبد حافظ	**أ.د. أحمد سلطان علي**	**أ.د. جبار حمود عبد النبي البيضاني**	**أ.د. عبد العزيز عبد الرسول عزيز**
عضوا	**عضوا**	**عضو**	**رئيس اللجنة العلمية**
2024/03/10	**2024/03/10**	**2024/03/10**	**2024/03/10**

السيد رئيس قسم الهندسة المدنية المحترم

م/محضر اجتماع لجنة الخبراء

تحية طيبة

اجتمعت لجنة الخبراء في قسم الهندسة المدنية والمشكلة بموجب الاداري ذي العدد ه.ن./1 /1 / 4261 في 2023/9/18 والصادر من عمادة كلية الهندسة/جامعة النهرين اجتماعا الكترونيا وذلك في يوم السبت الموافق 2024/3/9 وأقرت معايير استبانة المراجعة الذاتية للجاهزية لنظام ادارة الجودة والاعتماد الاكاديمي في قسم الهندسة المدنية وحسب محضر الاجتماع المرفق.

للتفضل بالاطلاع والتنسيب مع التقدير

أ.د.جبار حمود البيضاني

رئيس لجنة الخبراء

2024/3/10

المرفقات:

محضر اجتماع

المعيار الأول: أهداف البرنامج التعليمية

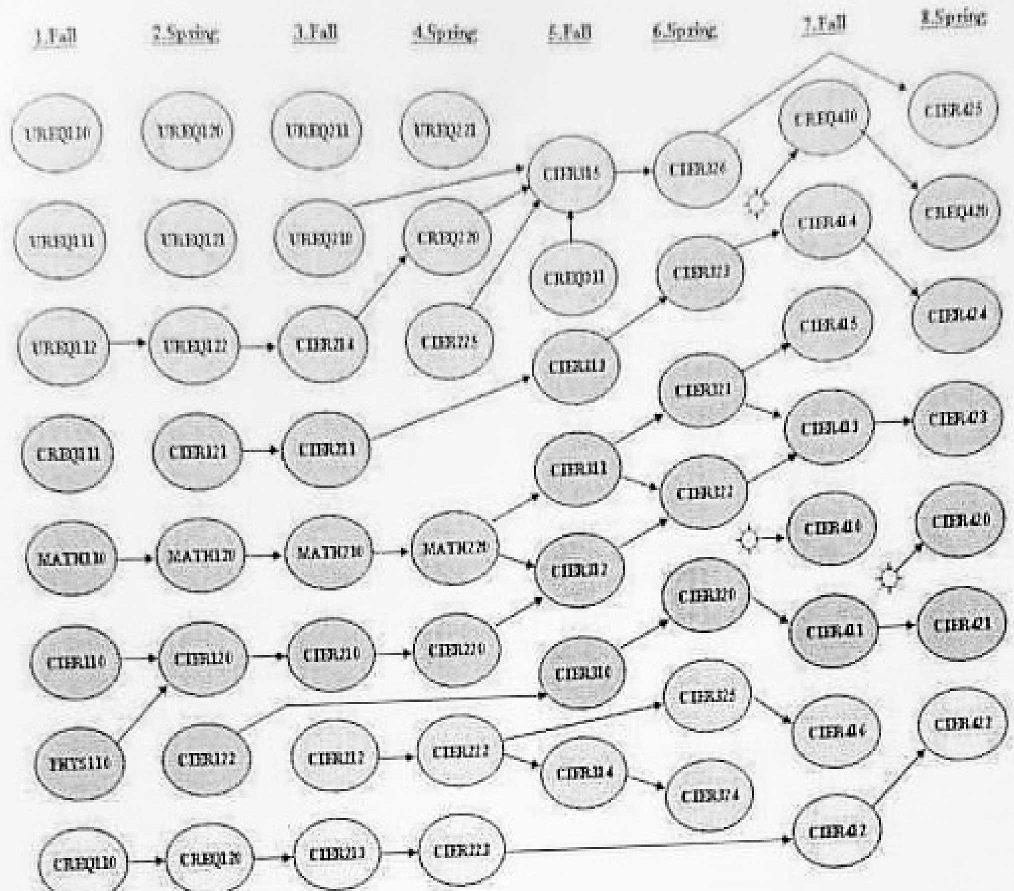
اجتمعت لجنة الخبراء بتاريخ 2024/3/9 واقرت رسالة ورؤية قسم الهندسة المدنية وكما مبين ادناه:

Vision

The Department of Civil Engineering endeavors to be one of the leading Civil Engineering Programs in Iraq and the region. The global economy and rapid changes in technology requires an increasing number of civil engineers. Today's civil engineers are confronted with broader job responsibilities, often involving modern technological aspects that must be integrated with the traditional disciplines. The high demand by professional firms in the Construction Industry for civil engineers impose the need for civil engineering programs in which qualifications are valuable for career advancement. The competitive nature of the Construction Industry in the region requires civil engineers that acquire good knowledge and skills in dealing with new technologies. Identifying, evaluating, implementing and managing the most appropriate resources, technologies and systems demands a well-developed level of technical and managerial skills and team-work capabilities. The civil engineering program enhance the technical and managerial knowledge and skills of its graduates to meet today's demands and needs as well as those of the future. The program emphasizes academic and research excellence along with professional development of students in particular areas of interest in civil engineering. The program offers a wide selection of courses and research activities related to civil engineering which satisfies the local as well as the global needs of the Construction Industry. The Main Features of the Program: its quality is comparable with similar international programs while introducing flexibility to meet local needs without affecting its quality. The program is well positioned to address the areas of recent research in the area.

Mission

The Department of Civil Engineering, aspires to be a center of excellence in educating professionals in civil engineering in Iraq. The philosophy of the department is to promote a model of education that promotes both professional and educational aspects of a discipline that supports academic creativity, cultural development, and operates within an environment that encourages technology transfer. The Department offers a comprehensive program at undergraduate and postgraduate levels that can play a pivotal role in the development of the engineering areas in Iraq, and provide a forum for research into topical areas and contribute to policy debates. The department of civil engineering to be one of the leading civil engineering programs in Iraq and the region. Nurturing and care of outstanding students and encouraging them to use their skills.



وبهذا ختم المحضر

المهندس الخبير اسماعيل عابد جاسم
دائرة الشؤون الهندسية/ديوان الوقف السني
عضوا
2024/3/9

المهندس مهند شهيد محسن سعود
المدير المفوض لشركة الرائدة المشتركة
عضوا
2024/3/9

أ.د.محمد عبدالخالق ابراهيم
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

أ.د.علاء حسين عبد حافظ
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

أ.د. عبدالعزيز عبدالرسول عزيز
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
9/3/2024

أ.م.د.ليث خالد كامل
قسم الهندسة المدنية/كلية
الهندسة /جامعة النهرين
رئيسا
9/3/2024

أ.د.[illegible] حمود البيضاني
قسم الهندسة المدنية/كلية الهندسة/جامعة النهرين
رئيسا

9/3/2024

رؤية و رسالة قسم الهندسة المدنية

جامعة النهرين
قسم الهندسة المدنية
1988

قسم الهندسة المدنية

رسالة و رؤية و الاهداف التعليمية للهندسة المدنية

الرؤية

يسعى قسم الهندسة المدنية ليكون أحد برامج الهندسة المدنية الرائدة في العراق والمنطقة. يتطلب الاقتصاد العالمي والتغيرات السريعة في التكنولوجيا عددًا متزايدًا من المهندسين المدنيين. يواجه المهندسون المدنيون اليوم مسؤوليات وظيفية أوسع. غالبًا ما تتضمن جوانب تكنولوجية حديثة يجب دمجها مع التخصصات التقليدية. يفرض الطلب المرتفع من قبل الشركات المهنية في صناعة البناء والتشييد على المهندسين المدنيين الحاجة إلى برامج الهندسة المدنية التي تكون فيها المؤهلات ذات قيمة للتقدم الوظيفي. تتطلب الطبيعة التنافسية لصناعة البناء والتشييد في المنطقة مهندسين مدنيين يكتسبون معرفة ومهارات جيدة في التعامل مع التقنيات الجديدة. يتطلب تحديد وتقييم وتنفيذ وإدارة الموارد والتقنيات والأنظمة الأكثر ملاءمة مستوى متطورًا من المهارات الفنية والإدارية وقدرات العمل الجماعي. يعزز برنامج الهندسة المدنية المعرفة والمهارات الفنية والإدارية لخريجيه لتلبية متطلبات واحتياجات اليوم وكذلك احتياجات المستقبل. يركز البرنامج على التميز الأكاديمي والبحثي إلى جانب التطوير المهني للطلاب في مجالات معينة من الاهتمام بالهندسة المدنية. يقدم البرنامج مجموعة واسعة من الدورات والأنشطة البحثية المتعلقة بالهندسة المدنية والتي تلبي الاحتياجات المحلية والعالمية لصناعة البناء والتشييد. الملامح الرئيسية للبرنامج: جودته تضاهي البرامج العالمية المشابهة مع توفير المرونة لتلبية الاحتياجات المحلية دون التأثير على جودته. يتمتع البرنامج بوضع جيد لمعالجة مجالات الأبحاث الحديثة في هذا المجال.

الرسالة

يطمح قسم الهندسة المدنية إلي أن يكون مركزاً للتميز في تعليم المتخصصين في الهندسة المدنية في العراق. تتمثل فلسفة القسم في تعزيز نموذج التعليم الذي يعزز الجوانب المهنية والتعليمية للتخصص الذي يدعم الإبداع الأكاديمي والتنمية الثقافية، ويعمل في بيئة تشجع نقل التكنولوجيا. يقدم القسم برنامجا شاملا على المستويين الجامعي والدراسات العليا يمكن أن يلعب دورا محوريا في تطوير المجالات الهندسية في العراق، ويوفر منتدى للبحث في المجالات الموضعية والمساهمة في المناقشات السياسية. أن يكون قسم الهندسة المدنية أحد برامج الهندسة المدنية الرائدة في العراق والمنطقة. رعاية ورعاية الطلاب المتفوقين وتشجيعهم على استخدام مهاراتهم.

الاهداف

1. تزويد الطلبة بأساس متين في تخصص الهندسة المدنية ومنهجيات التصميم من خلال التركيز على تطبيق المبادئ الرياضية والعلمية والهندسية.
2. تحسين وتطوير وتأهيل الأنشطة التعليمية والإدارية في القسم.
3. تطوير وتحسين قدرات أعضاء هيئة التدريس والهندسية والفنية والإدارية.
4. جعل الطلبة اكثر فعالية في التصميم والتطبيق العملي لنظرية الهندسة المدنية. إظهار العمل الجماعي ومهارات الاتصال الفعال.
5. الاستخدام الأمثل لمرافق القسم وموارده وتحسين وتأهيل هذه المرافق.
6. توسيع معرفة وقدرات الطلبة في التعليم المستمر أو غيرها من تجارب التعلم مدى الحياة. خدمة مجتمعاتهم، سواء محليًا أو وطنيًا أو عالميًا.

رؤية ورسالة كلية الهندسة

الرؤية

تسعى الكلية إلى تحقيق التميز في المجالات الهندسية على المستويات المحلية والإقليمية والعالمية في ظل سمو فكري ومهني وبما يسهم في خدمة المجتمع وتحقيق التطور العلمي والمساهمة في إعداد الملاكات الهندسية في مجال الاختصاص وبما يتلاءم مع التطورات العلمية والاقتصادية في سوق العمل.

الرسالة

تقديم برامج أكاديمية عالية الجودة تتماشى مع التطور العلمي والتكنولوجي على المستوى المحلي والإقليمي والعالمي والمشاركة الفعالة في تطوير التقنيات والتحسين المستمر في المنظومة التعليمية والبحثية في الكلية من خلال التعاون المستمر مع الجهات العاملة في الاختصاصات الهندسية المختلفة.

الأهداف

تسعى الكلية الى تحقيق اهدافها من خلال:

- النهوض بواقع البحث العلمي.
- تعميق المنطق العلمي لدى الطلبة.
- تخريج مهندسين رواد أكفاء ومبدعين.
- سد جزء من النقص الحاصل في الملاكات التدريسية الهندسية.
- خدمة المجتمع من خلال التعليم المستمر والاستشارات الهندسية المميزة.

رؤية ورسالة جامعة النهرين

عن الجامعة

نشأة الجامعة

جامعة النهرين .. بين الواقع والمستقبل تسعى جامعة النهرين الى تأمين قاعدة بيانات من الخبرات العلمية تتوافر فيها قابليات الابداع وتطبيق الجودة والسعي للحصول على الاعتمادية الدولية، كما تسعى الى مواكبة التطور العلمي والتقني بأجراء البحوث العلمية ورسائلها وصيغها المتقدمة والى اقامة العلاقات الثقافية والعلمية والتعاون مع الجامعات الرصينة ومراكز البحوث الدولية لغرض تطوير المناهج الدراسية وتبادل الاساتذة وطلبة الدراسات العليا واجراء البحوث المشتركة واقامة المؤتمرات، وضمن الخطة الخمسية المستقبلية لجامعة النهرين تم التخطيط لاستكمال البنى التحتية للجامعة لتلبي رسالتها الاكاديمية والعلمية، من خلال ما تم تبنيه من استحداثات تتماشى وحاجة المجتمع العراقي في المجالات الطبية والهندسية والعلوم التطبيقية والانسانية، حيث تم اعداد التصاميم المعمارية والهندسية لمشاريع جامعة النهرين المستقبلية من خلال الابنية الادارية والخدمات والقاعات الدراسية والمختبرات المركزية وماتم التخطيط له من حدائق وخدمات ترفيهية للطلبة والمنتسبين في الجامعة.

نبذة عن جامعة : اسست جامعة النهرين في عام 1987، وهي تضم مجمعين احدهما في الجادرية الذي يشمل كليات الهندسة والعلوم والعلوم السياسية وهندسة المعلومات وكلية اقتصاديات الاعمال وكلية التقنيات الاحيائية ومركز بحوث التقنيات الاحيائية ومركزالدنا العدلي للبحث والتدريب ومركز بحوث النهرين للطاقة المتجددة ومركز الحاسبة الالكترونية ومركز التعليم المستمر , والاخر في الكاظمية الذي يشمل كليات الطب والحقوق والصيدلة والمعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب، وجاء تأسيس الجامعة لتكون رافدا متميزا ينهض بدورعلمي يتوافق ومستجدات التقنيات العلمية التي يشهدها العالم المعاصر في مجالات اختصاص كلياتها، كانت تهدف الى خلق انموذج جامعي جديد فضلا عن تأكيدها على النوعية في اعداد الملاكات لتأمين قاعدة علمية تتصف بالابداع والابتكار ويسمو في نخبة خيرة من خريجيها في الدراسات الاولية والعليا ليشاركوا بكل جد واخلاص في اعلاء صرح البناء العلمي والحضاري للعراق. أن جامعة النهرين عضو في اتحاد الجامعات العربية واتحاد الجامعات العالمية ومعترف بشهاداتها من قبل اليونسكو وفي كل عام يمر من عمرها تشهد الجامعة
البناء العلمي والحضاري للعراق. أن جامعة النهرين عضو في اتحاد الجامعات العربية واتحاد الجامعات العالمية ومعترف بشهاداتها من قبل اليونسكو وفي كل عام يمر من عمرها تشهد الجامعة
تطورا نوعيا في توفير المستلزمات الحديثة واعداد الملاك العلمي المؤهل للتواصل مع حافات العلوم المتقدمة في العالم، ووفاءا لوطن الحضارات واهله اختير اسم (جامعة النهرين) عنوانا لهذه الجامعة لتؤكد اصالة انتماءها الى هذا الوطن الذي تمتد جذوره التاريخية في اعماق تربة تغذت بها النهرين الخالدين دجلة والفرات عبر قرون عديدة .

الرؤية	الرسالة	الاهداف
أنْ تكونَ جامعةً مُميّزةً وساعيةً للرِّيادة والاستدامة .	تأمين بيئة داعمة للتعليم والتعلم والبحث العلمي ،. لتحقيق أهداف الرِّيادة والاستدامة ، وتعزيز مهارات الطلبة ، وتنمية قدراتهم ،. لتصبح قادرة على المنافسة في سوق العمل .	1. الالتزام بأخلاقيات وقيم العمل الجامعي ، والاعتزاز بالهُوية الوطنية ، واحترام التنوع الثقافي . 2. تسعى الى الاعتماد المؤسسي والحوكمة في إدارة الجامعة . 3. الريادة والتميز في البرامج الاكاديمية ، وتحديثها بانتظام وفقاً لمعايير الجودة ومتطلبات سوق العمل . 4. الارتقاء بموقع الجامعة في التصنيفات المحلية والعالمية . 5. تعزيز التعاون والشراكة مع المؤسسات الأكاديمية والبحثية المحلية والإقليمية والعالمية . 6. أستثمارالمواهب البشرية وتوفير بنى تحتية لائقة ، وخدمات مؤسسية عالية الجودة ، وبنية رقمية كفؤة .

دليل الجامعة | وصف الشعار | الهيكل التنظيمي | نشيد الجامعة | مشاهير الجامعة

توافق رؤية ورسالة القسم مع ما للكلية والجامعة

فقرة (2-1-1)

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جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقم المحضر:13
تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ.ن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (Program Education Objectives) لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول 3.1 المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد CLOs مع محصلات التعلم GOs كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي SAR للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشان (او المصلحة) بالبرنامج التعليمي (Program Constituencies) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

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جامعة النهرين كلية الهندسة قسم الهندسة المدنية		محضر اللجنة العلمية رقـــم المحضر:**13** تأريخ المحضر: **2024/05/23**

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

<u>تاسعا: محصلات الخريجين</u>

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

<u>التوصية</u>

توصي اللجنة العلمية باعتماد محصلات الخريجين **GOs** الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

<u>عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs</u>

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs** كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

<u>التوصية</u>

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs**

<u>حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs</u>

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية **PEOs** وبصدده اوصت اللجنة بما يلي:

<u>التوصية</u>

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية **PEOs**

<u>ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية</u>

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)** وبصدده اوصت اللجنة بما يلي:

<u>التوصية</u>

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)**

وبهذا اختتم المحضر

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جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـــم المحضر: **13**
تأريخ المحضر: **2024/05/23**

أ.م.د. ضياء مصطفى نيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/05/23	2024/05/23	2024/05/23	2024/05/23	2024/05/23

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضو	رئيس اللجنة العلمية
2024/05/23	2024/05/23	2024/05/23	2024/05/23

3

المرفق رقم (1)

<u>مصفوفة التوافق بين رسالة قسم الهندسة المدنية و رسالة كلية الهندسة و رسالة جامعة النهرين</u>

الرسالة

جامعة النهرين

تأمين بيئة داعمة للتعليم والتعلم والبحث العلمي ،. لتحقيق أهداف الرِّيادة والاستدامة ، وتعزيز مهارات الطلبة ، وتنمية قدراتهم .، لتصبح قادرة على المنافسة في سوق العمل

كلية الهندسة

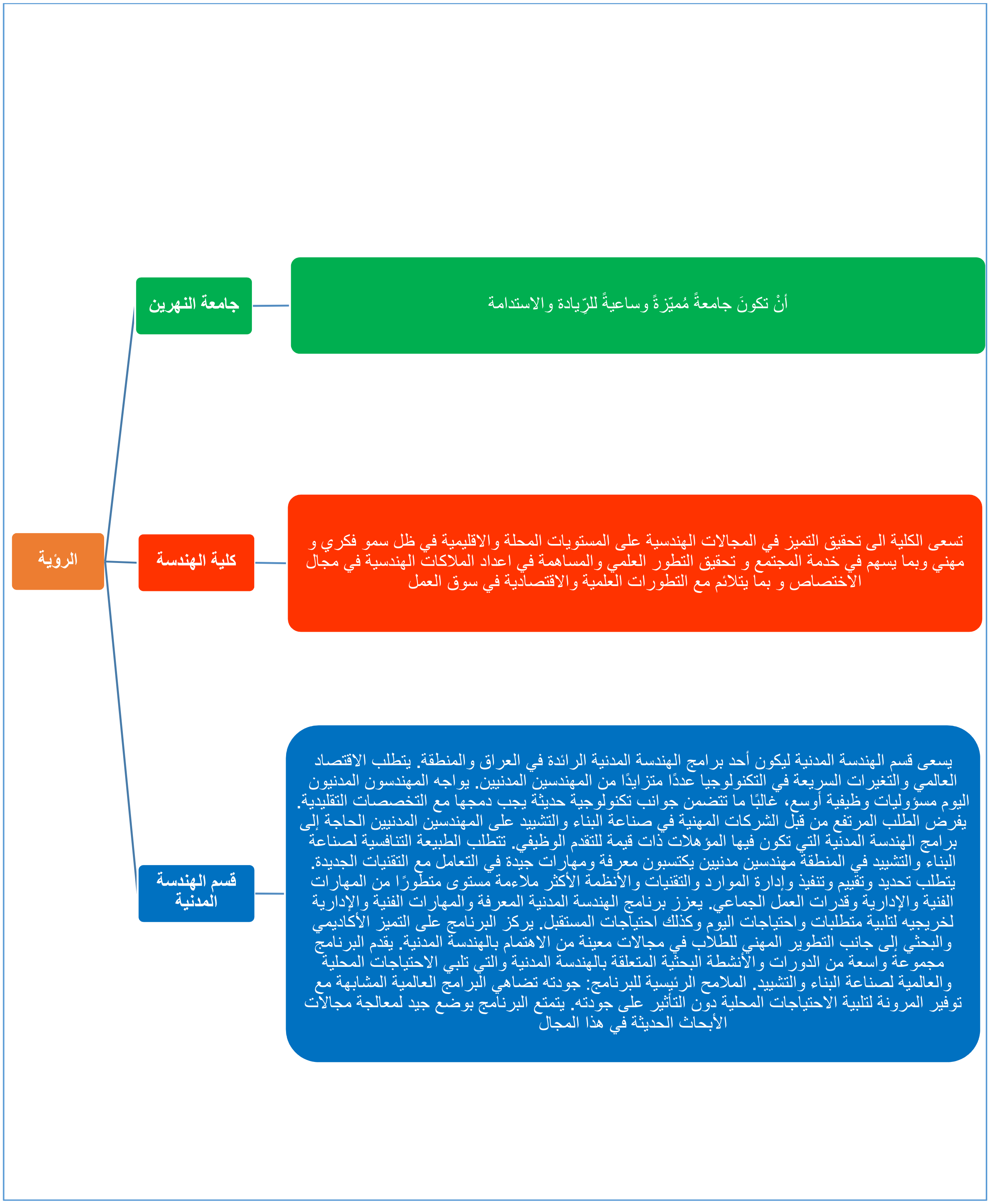
تقديم برامج باراماج اكاديمية عالية الجودة تتماشى مع التطور العلمي والتكنولوجي على المستوى المحلي والإقليمي والعالمي والمشاركة الفعالة في تطوير التقنيات والتحسين المستمر في المنظومة التعليمية والبحثية في الكلية من خلال التعاون المستمر مع الجهات العاملة في الاختصاصات الهندسية المختلفة

قسم الهندسة المدنية

يطمح قسم الهندسة المدنية إلى أن يكون مركزاً للتميز في تعليم المتخصصين في الهندسة المدنية في العراق. تتمثل فلسفة القسم في تعزيز نموذج التعليم الذي يعزز الجوانب المهنية والتعليمية للتخصص الذي يدعم الإبداع الأكاديمي والتنمية الثقافية، ويعمل في بيئة تشجع نقل التكنولوجيا. يقدم القسم برنامجا شاملا على المستويين الجامعي والدراسات العليا يمكن أن يلعب دورا محوريا في تطوير المجالات الهندسية في العراق، ويوفر منتدى للبحث في المجالات الموضعية والمساهمة في المناقشات السياسية. أن يكون قسم الهندسة المدنية أحد برامج الهندسة المدنية الرائدة في العراق والمنطقة. رعاية ورعاية الطلاب المتفوقين وتشجيعهم على استخدام مهاراتهم

المرفق رقم (1)

مصفوفة التوافق بين رؤية قسم الهندسة المدنية و رؤية كلية الهندسة و رؤية جامعة النهرين



الاهداف الاستراتيجية للقسم و الكلية و الجامعة

فقرة (3-1-1)

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـم المحضر:13
تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (Program Education Objectives) لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول 3.1 المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد CLOs مع محصلات التعلم GOs كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي SAR للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشان (او المصلحة) بالبرنامج التعليمي (Program Constituencies) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين **GOs** الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs** كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs**

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية **PEOs** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية **PEOs**

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)**

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية	محضر اللجنة العلمية رقــم المحضر: **13** تأريخ المحضر: **2024/05/23**

أ.م.د. ضياء مصطفى نيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/05/23	2024/05/23	2024/05/23	2024/05/23	2024/05/23

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضو	رئيس اللجنة العلمية
2024/05/23	2024/05/23	2024/05/23	2024/05/23

المرفق رقم (1)

<u>مصفوفة التوافق بين اهداف قسم الهندسة المدنية و اهداف كلية الهندسة و اهداف جامعة النهرين</u>

- **الاهداف**
  - **جامعة النهرين**
    - تسعى الى الاعتماد المؤسسي والحوكمة في إدارة الجامعة
    - الالتزام بأخلاقيات وقيم العمل الجامعي ، والاعتزاز بالهُوية الوطنية ، واحترام التنوع الثقافي
    - الريادة والتمّيز في البرامج الاكاديمية ، وتحديثها بانتظام وفقاً لمعايير الجودة ومتطلبات سوق العمل
    - الارتقاء بموقع الجامعة في التصنيفات المحلية والعالمية
    - تعزيز التعاون والشراكة مع المؤسسات الأكاديمية والبحثية المحلية والإقليمية والعالمية
    - أستثمارالمواهب البشرية وتوفير بنى تحتية لائقة ، وخدمات مؤسسية عالية الجودة ، وبنية رقمية كفؤة
  - **كلية الهندسة**
    - النهوض بواقع البحث العلمي
    - تعميق المنطق العلمي لدى الطلبة
    - تخريج مهندسين رواد أكفاء ومبدعين
    - سد جزء من النقص الحاصل في الملاكات التدريسية الهندسية
    - خدمة المجتمع من خلال التعليم المستمر والاستشارات الهندسية المميزة
  - **قسم الهندسة المدنية**
    - تزويد الطلبة بـأساس متين في تخصص الهندسة المدنية ومنهجيات التصميم من خلال التركيز على تطبيق المبادئ الرياضية والعلمية والهندسية.
    - تحسين وتطوير وتأهيل الأنشطة التعليمية والإدارية في القسم.
    - تطوير وتحسين قدرات أعضاء هيئة التدريس والهندسية والفنية والإدارية.
    - جعل الطلبة اكثر فعالية في التصميم والتطبيق العملي لنظرية الهندسة المدنية. إظهار العمل الجماعي ومهارات الاتصال الفعال.
    - الاستخدام الأمثل لمرافق القسم وموارده وتحسين وتأهيل هذه المرافق.
    - توسيع معرفة وقدرات الطلبة في التعليم المستمر أو غيرها من تجارب التعلم مدى الحياة. خدمة مجتمعاتهم، سواء محليًا أو وطنيًا أو عالميًا.

هل الرؤية و الرسالة و الاهداف معلنة

فقرة (4-1-1)

رؤية ورسالة و اهداف قسم الهندسة المدنية

المكتبة | التعليم الالكتروني | مجلة كلية الهندسة | وصف البرنامج الاكاديمي | المحاضرات الفيديوية | تقرير التقييم الذاتي | درجات الطلاب | ع | En

الصفحة الرئيسية | كادر القسم | المقررات الدراسية | النشاطات العلمية | بوابة الطالب والتدريسي | المختبرات العلمية | الرسائل والاطاريح

جامعة النهرين - كلية الهندسة
Al-Nahrain University
College of Engineering

الرئيسية /قسم الهندسة المدنية / كلية الهندسة - جامعة النهرين

عدد الزوار

5823632

Research Gate

جامعة النهرين
قسم الهندسة المدنية
1988

قسم الهندسة المدنية

رسالة و رؤية و الاهداف التعليمية للهندسة المدنية

الرؤية

يسعى قسم الهندسة المدنية ليكون أحد برامج الهندسة المدنية الرائدة في العراق والمنطقة. يتطلب الاقتصاد العالمي والتغيرات السريعة في التكنولوجيا عددًا متزايدًا من المهندسين المدنيين. يواجه المهندسون المدنيون اليوم مسؤوليات وظيفية أوسع، غالبًا ما تتضمن جوانب تكنولوجية حديثة يجب دمجها مع التخصصات التقليدية. يفرض الطلب المرتفع من قبل الشركات المهنية في صناعة البناء والتشييد على المهندسين المدنيين الحاجة إلى برامج الهندسة المدنية التي تكون فيها المؤهلات ذات قيمة للتقدم الوظيفي. تتطلب الطبيعة التنافسية لصناعة البناء والتشييد في المنطقة مهندسين مدنيين يكتسبون معرفة ومهارات جيدة في التعامل مع التقنيات الجديدة. يتطلب تحديد وتقييم وتنفيذ وإدارة الموارد والتقنيات والأنظمة الأكثر ملاءمة مستوى متطورًا من المهارات الفنية والإدارية وقدرات العمل الجماعي. يعزز برنامج الهندسة المدنية المعرفة والمهارات الفنية والإدارية لخريجيه لتلبية متطلبات واحتياجات اليوم وكذلك احتياجات المستقبل. يركز البرنامج على التميز الأكاديمي والبحثي إلى جانب التطوير المهني للطلاب في مجالات معينة من الاهتمام بالهندسة المدنية. يقدم البرنامج مجموعة واسعة من الدورات والأنشطة البحثية المتعلقة بالهندسة المدنية والتي تلبي الاحتياجات المحلية والعالمية لصناعة البناء والتشييد. الملامح الرئيسية للبرنامج: جودته تضاهي البرامج العالمية المشابهة مع توفير المرونة لتلبية الاحتياجات المحلية دون التأثير على جودته. يتمتع البرنامج بوضع جيد لمعالجة مجالات الأبحاث الحديثة في هذا المجال.

الرسالة

يطمح قسم الهندسة المدنية إلى أن يكون مركزاً للتميز في تعليم المتخصصين في الهندسة المدنية في العراق. تتمثل فلسفة القسم في تعزيز نموذج التعليم الذي يعزز الجوانب المهنية والتعليمية للتخصص الذي يدعم الإبداع الأكاديمي والتنمية الثقافية، ويعمل في بيئة تشجع نقل التكنولوجيا. يقدم القسم برنامجا شاملا على المستويين الجامعي والدراسات العليا يمكن أن يلعب دورا محوريا في تطوير المجالات الهندسية في العراق. ويوفر منتدى للبحث في المجالات الموضعية والمساهمة في المناقشات السياسية. أن يكون قسم الهندسة المدنية أحد برامج الهندسة المدنية الرائدة في العراق والمنطقة. رعاية ورعاية الطلاب المتفوقين وتشجيعهم على استخدام مهاراتهم.

الاهداف

1. تزويد الطلبة بأساس متين في تخصص الهندسة المدنية ومنهجيات التصميم من خلال التركيز على تطبيق المبادئ الرياضية والعلمية والهندسية.
2. تحسين وتطوير وتأهيل الأنشطة التعليمية والإدارية في القسم.
3. تطوير وتحسين قدرات أعضاء هيئة التدريس والهندسية والفنية والإدارية.
4. جعل الطلبة اكثر فعالية في التصميم والتطبيق العملي لنظرية الهندسة المدنية. إظهار العمل الجماعي ومهارات الاتصال الفعال.
5. الاستخدام الأمثل لمرافق القسم وموارده وتحسين وتأهيل هذه المرافق.
6. توسيع معرفة وقدرات الطلبة في التعليم المستمر أو غيرها من تجارب التعلم مدى الحياة. خدمة مجتمعاتهم، سواء محليًا أو وطنيًا أو عالميًا.

رؤية ورسالة كلية الهندسة

كلية الهندسة

الرؤية

تسعى الكلية إلى تحقيق التميز في المجالات الهندسية على المستويات المحلية والإقليمية والعالمية في ظل سمو فكري ومهني وبما يسهم في خدمة المجتمع وتحقيق التطور العلمي والمساهمة في إعداد الملاكات الهندسية في مجال الاختصاص وبما يتلاءم مع التطورات العلمية والاقتصادية في سوق العمل.

الرسالة

تقديم برامج أكاديمية عالية الجودة تتماشى مع التطور العلمي والتكنولوجي على المستوى المحلي والإقليمي والعالمي والمشاركة الفعالة في تطوير التقنيات والتحسين المستمر في المنظومة التعليمية والبحثية في الكلية من خلال التعاون المستمر مع الجهات العاملة في الاختصاصات الهندسية المختلفة.

الأهداف

تسعى الكلية الى تحقيق اهدافها من خلال:

- النهوض بواقع البحث العلمي.
- تعميق المنطق العلمي لدى الطلبة.
- تخريج مهندسين رواد أكفاء ومبدعين.
- سد جزء من النقص الحاصل في الملاكات التدريسية الهندسية.
- خدمة المجتمع من خلال التعليم المستمر والاستشارات الهندسية المميزة.

رؤية ورسالة جامعة النهرين

الرئيسة | عن الجامعة ▾ | التشكيلات ▾ | اقسام الرئاسة ▾ | الانظمة الالكترونية | الاخبار ▾ | معرض الصور | اتصل بنا | English | بحث

عن الجامعة

نشأة الجامعة

جامعة النهرين .. بين الواقع والمستقبل تسعى جامعة النهرين الى تأمين قاعدة بيانات من الخبرات العلمية تتوافر فيها قابليات الابداع وتطبيق الجودة والسعي للحصول على الاعتمادية الدولية, كما تسعى الى مواكبة التطور العلمي والتقني بأجراء البحوث العلمية ورسائلها وصيغها المتقدمة والى اقامة العلاقات الثقافية والعلمية والتعاون مع الجامعات الرصينة ومراكز البحوث الدولية لغرض تطوير المناهج الدراسية وتبادل الاساتذة وطلبة الدراسات العليا واجراء البحوث المشتركة واقامة المؤتمرات, وضمن الخطة الخمسية المستقبلية لجامعة النهرين تم التخطيط لاستكمال البنى التحتية للجامعة لتلبي رسالتها الاكاديمية والعلمية, من خلال ما تم تبنيه من استحداثات تتماشى وحاجة المجتمع العراقي في المجالات الطبية والهندسية والعلوم التطبيقية والانسانية، حيث تم اعداد التصاميم المعمارية والهندسية لمشاريع جامعة النهرين المستقبلية من خلال الابنية الادارية والخدمات والقاعات الدراسية والمختبرات المركزية وماتم التخطيط له من حدائق وخدمات ترفيهية للطلبة والمنتسبين في الجامعة.

نبذة عن جامعة : اسست جامعة النهرين في عام 1987, وهي تضم مجمعين احدهما في الجادرية الذي يشمل كليات الهندسة والعلوم والعلوم السياسية وهندسة المعلومات وكلية اقتصاديات الاعمال وكلية التقنيات الاحيائية ومركز بحوث التقنيات الاحيائية ومركزالدنا العدلي للبحث والتدريب ومركز بحوث النهرين للطاقة المتجددة ومركز الحاسبة الالكترونية ومركز التعليم المستمر , والاخر في الكاظمية الذي يشمل كليات الطب والحقوق والصيدلة والمعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب، وجاء تأسيس الجامعة لتكون رافدا متميزا ينهض بدورعلمي يتوافق ومستجدات التقنيات العلمية التي يشهدها العالم المعاصر في مجالات اختصاص كلياتها، كانت تهدف الى خلق انموذج جامعي جديد فضلا عن تأكيدها على النوعية في اعداد الملاكات لتأمين قاعدة علمية تتصف بالابداع والابتكار ويسمو في نخبة خيرة من خريجيها في الدراسات الاولية والعليا ليشاركوا بكل جد واخلاص في اعلاء صرح البناء العلمي والحضاري للعراق. أن جامعة النهرين عضو في اتحاد الجامعات العربية واتحاد الجامعات العالمية ومعترف بشهاداتها من قبل اليونسكو وفي كل عام يمر من عمرها تشهد الجامعة البناء العلمي والحضاري للعراق. أن جامعة النهرين عضو في اتحاد الجامعات العربية واتحاد الجامعات العالمية ومعترف بشهاداتها من قبل اليونسكو وفي كل عام يمر من عمرها تشهد الجامعة تطورا نوعيا في توفير المستلزمات الحديثة واعداد الملاك العلمي المؤهل للتواصل مع حافات العلوم المتقدمة في العالم، ووفاءا لوطن الحضارات واهله اختير اسم (جامعة النهرين) عنوانا لهذه الجامعة لتؤكد اصالة انتماءها الى هذا الوطن الذي تمتد جذوره التاريخية في اعماق تربة تغذت بها النهرين الخالدين دجلة والفرات عبر قرون عديدة .

الرؤية	الرسالة	الاهداف
أنْ تكونَ جامعةً مُميّزةً وساعيةً للرِّيادة والاستدامة .	تأمين بيئة داعمة للتعليم والتعلم والبحث العلمي ،. لتحقيق أهداف الرِّيادة والاستدامة ، وتعزيز مهارات الطلبة ، وتنمية قدراتهم ،. لتصبح قادرة على المنافسة في سوق العمل .	1. الالتزام بأخلاقيات وقيم العمل الجامعي ، والاعتزاز بالهُوية الوطنية ، واحترام التنوع الثقافي . 2. تسعى الى الاعتماد المؤسسي والحوكمة في إدارة الجامعة . 3. الريادة والتميز في البرامج الاكاديمية ، وتحديثها بانتظام وفقاً لمعايير الجودة ومتطلبات سوق العمل . 4. الارتقاء بموقع الجامعة في التصنيفات المحلية والعالمية . 5. تعزيز التعاون والشراكة مع المؤسسات الأكاديمية والبحثية المحلية والإقليمية والعالمية . 6. أستثمارالمواهب البشرية وتوفير بنى تحتية لائقة ، وخدمات مؤسسية عالية الجودة ، وبنية رقمية كفؤة .

دليل الجامعة | وصف الشعار | الهيكل التنظيمي | نشيد الجامعة | مشاهير الجامعة

خطط العمل المطبقة و الموثقة لتحقيق الاهداف / الخطة الاستراتيجية لقسم الهندسة المدنية

فقرة (1-1-5)

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقم المحضر: 07
تاريخ المحضر: **2023/12/13**

محضر الاجتماع السابع للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـن/1304/2/1 في **2023/10/04**، اجتماعها السابع في يوم الاربعاء الموافق **2023/12/13** برئاسة أ.د.عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اشراف ثانوي لطالبة الدراسات العليا داليا علاء

اطلعت اللجنة العلمية على طلب الاستاذ المساعد الدكتور سلطان أحمد داوود في 2023/12/07 والذي يروم فيه اضافة التدريسي في جامعة الملك سعود في المملكة العربية السعودية الدكتور فهد عبد الله صالح الرشودي مشرف ثانوي لبحث طالبة الدراسات العليا (ماجستير) داليا علاء والذي سيساهم في استحصال المراجعات الاكاديمية في دور النشر العالمية، وبعد الاطلاع على السيرة البحثية للتدريسي اعلاه أوصت اللجنة بما يلي:

التوصية: الموافقة على اضافة الدكتور فهد عبد الله صالح الرشودي كمشرف ثانوي لرسالة الطالبة اعلاه بعد استحصال موافقة كليته على ان لا تتحمل الكلية او القسم اي تبعات مالية.

ثانيا: احلال تدريسيين بدلاء في استحداث تخصص الانشاءات

ناقش اعضاء اللجنة العلمية احلال تدريسيين بدلاء لغرض استحداث دراسة الماجستير في تخصص الانشاءات في الدراسات العليا نظرا لصدور امر بنقل كل من الاستاذ الدكتور عادل عبد الامير والاستاذ الدكتور حسام كاظم رسن خارج الكلية بناءا على طلبهم. حيث اوصت اللجنة بما يلي:

التوصية: احلال كل من الاستاذ المساعد الدكتور عبد الخالق جبار عبد الرضا (تخصص انشاءات) والاستاذ المساعد الدكتور ضياء مصطفى ذيبان (تخصص انشاءات).

ثالثا: المصادقة على دليل البرنامج الدراسي

اطلعت اللجنة على دليل البرنامج الدراسي (اهداف البرنامج و المخرجات) والمرفقة طيا (مرفق رقم 1)، اوصت اللجنة بمايلي:

التوصية: المصادقة على دليل البرنامج لدراسي لقسم الهندسة المدنية (مرفق رقم 1)

رابعا: المصادقة على الخطة الاستراتيجية للقسم

اطلعت اللجنة على الخطة الاستراتيجية للقسم لخمسة سنوات ابتداءا من السنة الدراسية 2023-2024 والمرفقة طيا (مرفق رقم 2)، اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة الاستراتيجية لخمسة سنوات ابتداءا من السنة الدراسية 2023-2024 لقسم الهندسة المدنية (مرفق رقم 2)

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقم المحضر :07
تاريخ المحضر: 2023/12/13

أ.م.د. ضياء مصطفى ذيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2023/12/13	2023/12/13	2023/12/13	2023/12/13	2023/12/13

(نقل)

أ.د. علاء حسين عبد حافظ	أ.د.أحمد سلطان علي	أ.د.محمود صالح مهدي	أ.د.جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضوا	عضو	رئيس اللجنة العلمية
2023/12/13	2023/12/13	2023/12/13	2023/12/13	2023/12/13

Strategic Plan - Civil Dep. (2023-2024)

	اسم الاجراء	مدة التنفيذ		تسلسل النشاط	اسم النشاط	22-23	23-24	24-25	25-26	مسؤولي التنفيذ	مسؤولي المتابعة والتقييم	نسبة التنفيذ المخططة	نسبة التنفيذ الفعلية	نسبة التنفيذ التراكمي	ملاحظات تمثل التنفيذ والنتائج
1-8-2	[illegible]	24	[illegible]	1	[illegible]		100%			[illegible]	[illegible]				[illegible]
4-2-4	[illegible]	24	[illegible]	2	[illegible]		50%	50%		[illegible]	[illegible]				[illegible]
1-1-1	[illegible]	continuous	[illegible]	4	[illegible]		100%			[illegible]	[illegible]				[illegible]
1-1-2	[illegible]	24	[illegible]	4	[illegible]		100%			[illegible]	[illegible]				[illegible]
1-3-1	[illegible]	continuous	[illegible]	5	[illegible]		100%			[illegible]	[illegible]				[illegible]
1-4-4	[illegible]	24	[illegible]	6	[illegible] Google Classroom		25%	25%	50%	[illegible]	[illegible]				[illegible]
1-5-2	[illegible]	25	[illegible]	7	[illegible]		25%	75%		[illegible]	[illegible]				[illegible]
1-5-5	[illegible]	continuous	[illegible]	8	[illegible]		100%			[illegible]	[illegible]				[illegible]
2-4-4	[illegible]	26	[illegible]	9	[illegible]		25%	25%	50%	[illegible]	[illegible]				
2-5-2	[illegible]	continuous	[illegible]	10	[illegible]	25%	25%	25%	25%	[illegible]	[illegible]				[illegible]
3-1-1	[illegible]	continuous	[illegible]	11	[illegible]		100%			[illegible]	[illegible]				[illegible]
3-4-1	[illegible]	24	[illegible]	12	[illegible]		100%			[illegible]	[illegible]				
5-1-5	[illegible]	continuous	[illegible]	13	[illegible]	25%	25%	25%	25%	[illegible]	[illegible]				[illegible]
5-3-4	[illegible]	23	[illegible]	14	[illegible]	100%				[illegible]	[illegible]				[illegible]
5-4-1	[illegible]	continuous	[illegible]	15	[illegible]	25%	25%	25%	25%	[illegible]	[illegible]				
5-5-3	[illegible]	continuous	[illegible]	16	[illegible]	25%	25%	25%	25%	[illegible]	[illegible]				[illegible]
5-8-5	[illegible]	continuous	[illegible]	17	[illegible]	25%	25%	25%	25%	[illegible]	[illegible]				[illegible]

الاهداف التعليمية للبرنامج PEOs

فقرة (1-2-1)

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقم المحضر: **11**
تأريخ المحضر: **2024/03/10**

محضر الاجتماع الحادي عشر للجنة العلمية للعام الدراسي **2024-2023**

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ ن/1304/2/1 في 2023/10/04، اجتماعها الحادي عشر في يوم الاحد الموافق 2024/03/10 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: المواد الدراسية للماجستير في جامعة الكوفة

ناقشت اللجنة العلمية اعتماد المواد الدراسية لدراسة الماجستير للفصلين ضمن تخصص هندسة المنشات الهيدروليكية/قسم الهندسة المدنية/كلية الهندسة/جامعة الكوفة بموجب كتاب الوزارة ذي العدد ب ت 1745/5 في 2024/2/13، وأوصت اللجنة بما يلي:

التوصية: الموافقة على اعتماد المواد الدراسية للتخصص المشار اليه ضمن الكتاب أعلاه مع ملاحظة التالي:

1) **ان ترجمة مادة (Artificial Intelligence in water resources) يجب ان يكون (الذكاء الاصطناعي في الموارد المائية).**
2) **المادة (المنشات الهيدروليكية) يفترض انه قد تم تدريسها في الدراسات الأولية كونها من اختصاص القسم ويفترض في الدراسات العليا ان يتم التوسع في المادة واضافة كلمة (المتقدمة).**
3) **اسم المادة** (Advanced Design of Reinforced Concrete) **يجب ان يكون** (Advanced Reinforced Concrete Design).
4) **ان ترجمة مادة** (optimization) **يجب ان يكون (الامثلية)**

ثانيا: متطلبات الاعتماد البرامجي

ناقشت اللجنة العلمية محضر لجنة الخبراء المؤرخ في 2024/3/9 والخاص باعداد رسالة ورؤية قسم الهندسة المدنية وكما في المرفقات واطلعت على محاور المحضر ومنها اهداف البرنامج التعليمية، محصلات الخريجين، المنهاج الدراسي للدراسات الاولية، وأوصت اللجنة بما يلي:

التوصية: الموافقة على فقرات المحضر اعلاه.

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـم المحضر: **11**
تأريخ المحضر: **2024/03/10**

أ.م.د. ضياء مصطفى ذيبان	**أ.م.د. حسن موسى جواد**	**أ.م.د. هيثم علاء حسين**	**أ.د. حاتم عبد الكريم رشيد**	**أ.د. مصعب عايد كصب**
عضوا ومقررا	**عضوا**	**عضوا**	**عضوا**	**عضوا**
2024/03/10	**2024/03/10**	**2024/03/10**	**2024/03/10**	**2024/03/10**

أ.د. علاء حسين عبد حافظ	**أ.د. أحمد سلطان علي**	**أ.د. جبار حمود عبد النبي البيضاني**	**أ.د. عبد العزيز عبد الرسول عزيز**
عضوا	**عضوا**	**عضو**	**رئيس اللجنة العلمية**
2024/03/10	**2024/03/10**	**2024/03/10**	**2024/03/10**

السيد رئيس قسم الهندسة المدنية المحترم

م/محضر اجتماع لجنة الخبراء

تحية طيبة

اجتمعت لجنة الخبراء في قسم الهندسة المدنية والمشكلة بموجب الاداري ذي العدد

ه.ن./1 /1 / 4261 في 2023/9/18 والصادر من عمادة كلية الهندسة/جامعة النهرين اجتماعا الكترونيا وذلك في يوم السبت الموافق 2024/3/9 وأقرت معايير استبانة المراجعة الذاتية للجاهزية لنظام ادارة الجودة والاعتماد الاكاديمي في قسم الهندسة المدنية وحسب محضر الاجتماع المرفق.

للتفضل بالاطلاع والتنسيب مع التقدير

أ.د.جبار حمود البيضاني

رئيس لجنة الخبراء

2024/3/10

المرفقات:

محضر اجتماع

اجتمعت لجنة الخبراء بتاريخ 2024/3/9 واقرت الأهداف الاستراتيجية وتوافق الأهداف التعليمية مع رسالة القسم لقسم الهندسة المدنية وكما مبين ادناه:

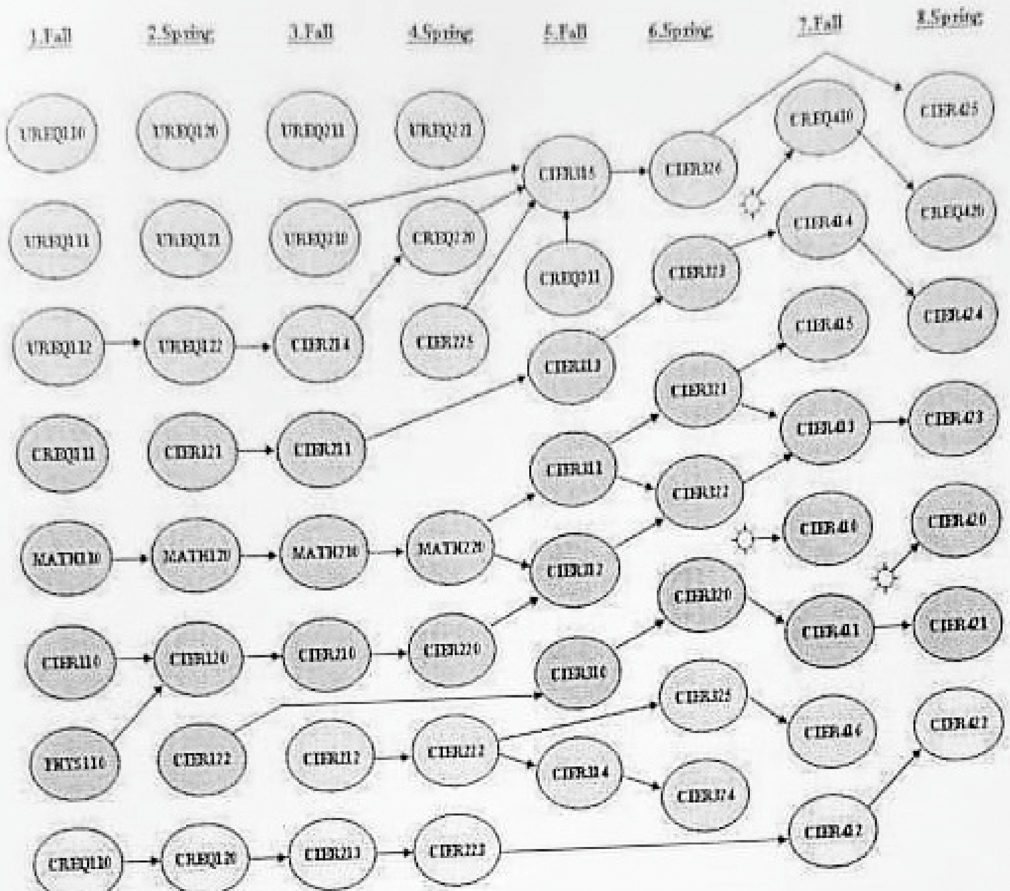
Statement of PEOs

Base on the mission of Al-Nahrain University and the college of Engineering, the graduate of the B.Sc. program in Civil Engineering will be able to:

1. PEO-1: use science, mathematics, computational thinking, and mechanical engineering ideas, such as design theory, experimental techniques, and production, to solve practical problems associated with design, improvement, manufacture and maintenance of mechanical systems.
2. PEO-2: Practice strong critical thanking, innovation, and problem-solving skills in order to pursue a successful career while demonstrating adherence to the professional codes of conduct and professional accountability.
3. PEO-3: Use effective communication skills and participate in multidisciplinary partnerships to demonstrate professional progress and leadership and demonstrate an appreciation and use of modern technological capabilities and to foster collaborative effort among co-workers and other institutions.
4. PEO-4: Work independently and in multidisciplinary teams to efficiently attain personal and organizational objectives, produce a product or construction that meets a social need, and contribute in teaching persons in the field while maintaining ethical and environmental context of their work.
5. PEO-5: Engage in life-long learning and career growth while maintaining professional standards and pursue further education in the form of graduate and professional studies.
6. PEO-6: Identify opportunities to contribute to the development of society life from a variety of positions, ranging from design and produce modern devices and introducing the cost-effective methods in production.

PEOs Consistency with the Mission Statement

The Civil Engineering Department PEOs are directly related to and in line with the department's goal. The first goal (PEO-1) is the first step toward a rewarding and service-oriented career. To accomplish this goal, the necessary information and abilities are obtained. Students get great education through a variety of means, including knowledge, skills, and values as indicated in PEO-1. PEO-1 also addresses professional and ethical problems. PEOs 2, 3, and 4 guarantee that instructional, administrative, and technical personnel have the attributes necessary for self-development, professional growth, and progress. The Civil Engineering Department's PEOs are also directly related to and congruent with the goals of Al-Nahrain University and the College of Engineering.



وبهذا ختم المحضر

أ.د.محمد عبدالخالق ابراهيم
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

المهندس مهند شهيد محسن سعود
المدير المفوض لشركة الرائدة المشتركة
عضوا
2024/3/9

المهندس الخبير اسماعيل عايد جاسم
دائرة الشؤون الهندسية/ديوان الوقف السني
عضوا
2024/3/9

أ.م.د.ليث خالد كامل
قسم الهندسة المدنية/كلية
الهندسة /جامعة النهرين
رئيسا
9/3/2024

أ.د. عبدالعزيز عبدالرسول عزيز
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
9/3/2024

أ.د.علاء حسين عبد حافظ
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

أ.د.جبار محمود البيضاني
قسم الهندسة المدنية/كلية الهندسة/جامعة النهرين
رئيسا
9/3/2024

اماكن النشر الموقع الالكتروني لكلية الهندسة

فقرة (1-2-2)

المكتبة | التعليم الالكتروني | مجلة كلية الهندسة | وصف البرنامج الاكاديمي | المحاضرات الفيديوية | تقرير التقييم الذاتي | درجات الطلاب | ع | En

الصفحة الرئيسية | كادر القسم | المقررات الدراسية | النشاطات العلمية | بوابة الطالب والتدريسي | المختبرات العلمية | الرسائل والاطاريح

جامعة النهرين - كلية الهندسة
Al-Nahrain University
College of Engineering

الرئيسية / قسم الهندسة المدنية / كلية الهندسة - جامعة النهرين

عدد الزوار

5822377

Research Gate

جامعة النهرين
قسم الهندسة المدنية
1988

اهداف التعليم البرامجي ومحصلات التخرج لقسم الهندسة المدنية

Program Educational Objectives (PEOs)

Base on the mission of Al-Nahrain University and the college of Engineering, :the graduate of the B.Sc. program in Civil Engineering will be able to

.1 PEO-1: use science, mathematics, computational thinking, and mechanical engineering ideas, such as design theory, experimental techniques, and production, to solve practical problems associated with design, improvement, manufacture and maintenance of mechanical .systems

.2 PEO-2: Practice strong critical thanking, innovation, and problem-solving skills in order to pursue a successful career while demonstrating adherence to the professional codes of conduct and professional .accountability

.3 PEO-3: Use effective communication skills and participate in multidisciplinary partnerships to demonstrate professional progress and leadership and demonstrate an appreciation and use of modern technological capabilities and to foster collaborative effort among co-.workers and other institutions

.4 PEO-4: Work independently and in multidisciplinary teams to efficiently attain personal and organizational objectives, produce a product or construction that meets a social need, and contribute in teaching persons in the field while maintaining ethical and environmental context of their .work

.5 PEO-5: Engage in life-long learning and career growth while maintaining professional standards and pursue further education in the form of .graduate and professional studies

.6 PEO-6: Identify opportunities to contribute to the development of society life from a variety of positions, ranging from design and produce modern .devices and introducing the cost-effective methods in production

Graduate outcomes

i) An ability to distinguish, identify, define, formulate, and solve engineering problems by applying principles of engineering, science, .and mathematics

ii) An ability to produce engineering designs that meet desired needs within certain constraints by applying both analysis and .synthesis in the design process

iii) An ability to create and carry out proper measurement and tests with quality assurance, analyze and interpret results, and utilize .engineering judgment to make inferences

iv) An ability to skillfully communicate orally with a gathering of .people and in writing with various managerial levels

v) An ability to perceive ethical and professional responsibilities in engineering cases and make brilliant judgments considering the consequences in worldwide financial, ecological, and societal .considerations

vi) An ability to perceive the continual necessity for professional knowledge growth and how to find, assess, assemble, and apply it .properly

vii) An ability to work adequately on teams and to set up objectives, .plan activities, meet due dates, and manage risk and uncertainty

كلية الهندسة - جامعة النهرين

عناوين الاتصال

صندوق البريد : 64040

هاتف: (964+) 07830514167

البريد الإلكتروني: dean.engineering@nahrainuniv.edu.iq

عنوان الكلية

توافق الاهداف التعليمية مع رسالة القسم

فقرة (1-3)

بسم الله الرحمن الرحيم

جامعة النهرين	محضر اللجنة العلمية
كلية الهندسة	رقـــم المحضر:13
قسم الهندسة المدنية	تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ.ن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (**Program Education Objectives**) لقسم الهندسة المدنية للعام الدراسي **2024/2023** وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول **3.1** المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد **CLOs** مع محصلات التعلم **GOs** كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي **SAR** للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشأن (او المصلحة) بالبرنامج التعليمي (**Program Constituencies**) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية	محضر اللجنة العلمية رقـــم المحضر:**13** تأريخ المحضر: **2024/05/23**

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين **GOs** الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs** كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs**

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية **PEOs** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية **PEOs**

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)**

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

أ.م.د. ضياء مصطفى نيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/05/23	2024/05/23	2024/05/23	2024/05/23	2024/05/23

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضو	رئيس اللجنة العلمية
2024/05/23	2024/05/23	2024/05/23	2024/05/23

المرفق رقم (2)

PEOs Consistency with the Mission Statement

The Civil Engineering Department PEOs are directly related to and in line with the department's goal. The first goal (PEO-1) is the first step toward a rewarding and service-oriented career. To accomplish this goal, the necessary information and abilities are obtained. Students get great education through a variety of means, including knowledge, skills, and values as indicated in PEO-1. PEO-1 also addresses professional and ethical problems. PEOs 2, 3, and 4 guarantee that instructional, administrative, and technical personnel have the attributes necessary for self-development, professional growth, and progress. The Civil Engineering Department's PEOs are also directly related to and congruent with the goals of Al-Nahrain University and the College of Engineering.

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer’s survey.
3. Faculty discussion.
4. Student’s survey.
5. Industry consultations.

اصحاب المصلحة المعنيين بالبرنامج

فقرة (1-4-1)

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـم المحضر:13
تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي **(Program Education Objectives)** لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول 3.1 المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد **CLOs** مع محصلات التعلم **GOs** كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي **SAR** للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشان التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشان (او المصلحة) بالبرنامج التعليمي **(Program Constituencies)** الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـــم المحضر:13
تأريخ المحضر: 2024/05/23

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين GOs الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية PEOs وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية PEOs

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite)

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقــم المحضر:**13**
تأريخ المحضر: **2024/05/23**

أ.م.د. ضياء مصطفى نيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/05/23	2024/05/23	2024/05/23	2024/05/23	2024/05/23

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضوا	رئيس اللجنة العلمية
2024/05/23	2024/05/23	2024/05/23	2024/05/23

اللجنة الاستشارية للصناعة في القسم (لجنة الخبراء)

فقرة (2-4-1)

جامعة النهرين
كلية الهندسة

مكتب العميد

جمهورية العراق - وزارة التعليم العالي والبحث العلمي - جامعة النهرين

العدد: هـ م / ١ / ١ / ٤٢٦١ التاريخ: ٢٠٢٣/٩/١٨

(أمر إداري)

م/ اللجان الدائمية للعام الدراسي (٢٠٢٣/٢٠٢٤)
(قسم الهندسة المدنية)

بناءً على مقتضيات مصلحة العمل، تقرر مايأتي :

تشكيل اللجان الدائمية العاملة في قسم الهندسة المدنية للعام الدراسي (٢٠٢٣/٢٠٢٤) لتكون كما هو مبين في المرفقات طياً .

المرفقات : اللجان الدائمية تسع صفحات

السيد المحترم
أستاذ مايكل زيرخ بشارة روحو سار
وانصار الكيانات وجار...
٩/١٨

أ.د. جمعة سلمان جياد
العميد
١٨/ أيلول/٢٠٢٣م

نسخة منه الى /
- مكتب السيد العميد / للتفضل بالإطلاع ... مع التقدير.
- السيدين معاوني العميد ... مع التقدير.
- السيد رئيس قسم الهندسة المدنية / كتابكم بالعدد (هـ.ن.م.د/٣٦٥ في ٢٠٢٣/٩/١٧) ... مع التقدير.
- شعبة ضمان الجودة وتقييم الأداء ...مع التقدير.
- أمانة مجلس الكلية.

Republic of Iraq, Ministry of Higher Education and Scientific Research, Al-Nahrain University

Al-Nahrain University \ College of Engineering
P.O.Box: (64040) Jadriah, Baghdad, Iraq
E-Mail: dean.office@eng.nahrainuniv.edu.iq , https://engar.nahrainuniv.edu.iq

جامعة النهرين / كلية الهندسة
العراق - بغداد - الجادرية- ص. ب: ٦٤٠٤٠

جامعة النهرين / كلية الهندسة / قسم الهندسة المدنية
مجلس القسم واللجان في قسم الهندسة المدنية للعام الدراسي 2023-2024

ت	الاسم الثلاثي	التخصص	التكليف
لجنة متابعة الخريجين			
1)	م.د. امنة طلال عبد الحميد	هندسة الطرق والمواصلات	رئيساً
2)	م.م. كرم قيس ناجي	هندسة كهرباء	عضواً
3)	م.م. مسرة جلاء يحيى	هندسة كهرباء	عضواً / مقرراً

ت	الاسم الثلاثي	التخصص	التكليف
لجنة التدريب الصيفي			
1)	أ.م.د. اسماء ثامر ابراهيم	هندسة الطرق والمواصلات	رئيسا
2)	مهندس اقدم اسراء عبد القادر عبد الكريم	مدني عام	عضواً
3)	م.مهندس هبه عبدالرزاق يوسف	مدني عام	عضواً / مقرراً

ت	الاسم الثلاثي	التخصص	التكليف
لجنة الحمل التدريسي واحتساب أجور الساعات الاضافية			
1)	أ.د. ابراهيم سليم ابراهيم	هندسة الانشاءات	رئيساً
2)	م.د. احمد عبد الحافظ مصطفى	هندسة الانشاءات	عضواً
3)	م. نورة سعد فرج	هندسة البيئة	عضواً/ مقرراً

ت	الاسم الثلاثي	التخصص	التكليف
لجنة الخبراء في الاقسام العلمية			
1)	أ.د. جبار حمود عبد النبي البيضاني	هندسة البيئة	رئيساً
2)	أ.د. عبد العزيز عبد الرسول عزيز	هندسة جيوتكنيك	عضواً
3)	أ.د. علاء حسين عبد حافظ	هندسة الطرق والمواصلات	عضواً
4)	أ.د. عادل عبد الامير محمد	هندسة الانشاءات	عضواً
5)	أ.د. محمود صالح مهدي	هندسة موارد مائية	عضواً

جامعة النهرين / كلية الهندسة / قسم الهندسة المدنية

مجلس القسم واللجان في قسم الهندسة المدنية للعام الدراسي 2023-2024

(6	أ.د. محمد عبد الخالق ابراهيم	هندسة البيئة	عضواً
(7	أ.د. حسام كاظم رسن	هندسة الانشاءات	عضواً/مقررا
(8	المهندس مهند شهيد محسن سعود	المدير المفوض لشركة الرافدة المشتركة	عضواً
(9	المهندس الخبير اسماعيل عايد جاسم	دائرة الشؤون الهندسية/ديوان الوقف السني	عضواً

لجنة ادارة المختبرات			
ت	الاسم الثلاثي	التخصص	التكليف
1	أ.د. عباس جواد عبد الحسين	هندسة جيوتكنيك	رئيسا
2	م. زاهر نوري محمد تقي	هندسة الانشاءات	عضواً
3	محمود ناجي كاظم	مدير فني اقدم	عضواً
4	مجيد جعفر مجيد	مدير فني اقدم	عضواً
5	علي لطيف عاصي	ملاحظ فني	عضوا
6	م.مهندس هبه عبدالرزاق يوسف	مدني عام	عضوا
7	م. مهندس فاروق رعد سعد الله	مدني عام	عضواً/مقررا

لجنة الاعتماد البراجمي			
ت	الاسم الثلاثي	التخصص	التكليف
1	أ.م.د. عبدالخالق عبدالجبار عبدالرضا	هندسة الانشاءات	رئيسا
2	أ.م.د. رائد احمد داود	هندسة الانشاءات	عضواً
3	أ.م.د. زينة رياض صالح	هندسة الانشاءات	عضواً

تلبية الاهداف التعليمية احتياجات المعنيين

فقرة (1-4-3)

السيد رئيس قسم الهندسة المدنية المحترم

م/محضر اجتماع لجنة الخبراء

تحية طيبة

اجتمعت لجنة الخبراء في قسم الهندسة المدنية والمشكلة بموجب الاداري ذي العدد ه.ن./1 /1 / 4261 في 2023/9/18 والصادر من عمادة كلية الهندسة/جامة النهرين اجتماعا الكترونيا وذلك في يوم السبت الموافق 2024/3/9 وأقرت معايير استبانة المراجعة الذاتية للجاهزية لنظام ادارة الجودة والاعتماد الاكاديمي في قسم الهندسة المدنية وحسب محضر الاجتماع المرفق.

للتفضل بالاطلاع والتنسيب مع التقدير

أ.د.جبار حمود البيضاني

رئيس لجنة الخبراء

2024/3/10

المرفقات:

محضر اجتماع

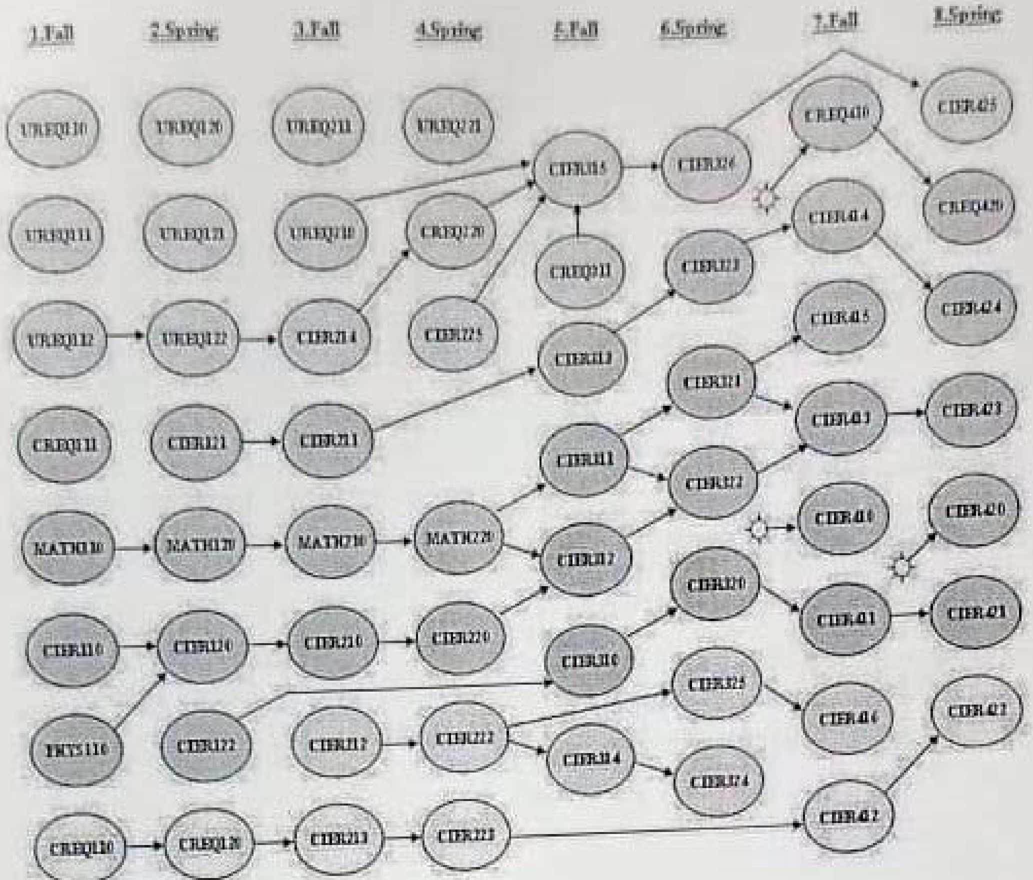
اللجنة العلمية

لاتخاذ ما يلزم رجاءً

٣/١١

Nahrain University / College of Engineering/ Civil Engineering Department Work Institutions Opinion Questionnaire about Graduates of Nahrain University
Academic Year 2022– 2023
Table (2.1): Work Institutions Opinion Questionnaire about Graduates of CE Program

Score		1	2	3	4	5
No.	Do you agree that the graduate possesses sufficient	Strongly Agree	Agree	I Don't Know	Disagree	I Don't Agree at All
1	Has sufficient knowledge and information related to employment issues	3	-	-	-	-
2	Has sufficient skills related to employment issues	3	-	-	-	-
3	Possesses the skills of social communication with customers	3	-	-	-	-
4	Have written communication skills (writing the required reports are properly)	3	-	-	-	-
5	Possesses the skills of research and analysis in the affairs of the work	3	-	-	-	-
6	Possess critical thinking skills and the ability to solve problems	3	-	-	-	-
7	Possesses the skills of teamwork	3	-	-	-	-
8	Has the skills to work within the team	3	-	-	-	-
9	Possesses the skills of planning and organization for work	3	-	-	-	-
10	Has the ability of high productivity at work	3	-	-	-	-
11	Has the quality of work performance piece	3	-	-	-	-
12	Has the capacity to creativity, innovation and work development	3	-	-	-	-
13	Has the ability to comply with the various conditions of the work	3	-	-	-	-
14	Has the ability to take responsibility	3	-	-	-	-
15	Possesses the skills of social interaction with colleagues	2	-	-	1	-
16	Has the ability to accept guidance and ready for implementation	3	-	-	-	-
17	Has a sense of the importance of work performed by	3	-	-	-	-
18	Has the ability to audit and review the work assigned to him	3	-	-	-	-
19	Has the ability to deal with the problems and difficulties of working with	3	-	-	-	-
20	Has the capacity to follow up on any up- dates in the field of work	3	-	-	-	-



وبهذا ختم المحضر

المهندس الخبير اسماعيل عايد جاسم
دائرة الشؤون الهندسية/ديوان الوقف السني
عضوا
2024/3/9

المهندس مهند شهيد محسن سعود
المدير المفوض لشركة الرائدة المشتركة
عضوا
2024/3/9

أ.د.محمد عبدالخالق ابراهيم
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

أ.د.علاء حسين عبد حافظ
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

أ.د. عبدالعزيز عبدالرسول عزيز
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
9/3/2024

أ.م.د.ليث خالد كامل
قسم الهندسة المدنية/كلية
الهندسة /جامعة النهرين
رئيسا
9/3/2024

أ.د.جبار محمود البيضاني
قسم الهندسة المدنية/كلية الهندسة/جامعة النهرين
رئيسا

9/3/2024

مراجعة الاهداف التعليمية دوريا

فقرة (5-1)

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقــم المحضـر:13
تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ.ن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (**Program Education Objectives**) لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول 3.1 المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد **CLOs** مع محصلات التعلم **GOs** كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي **SAR** للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشان (او المصلحة) بالبرنامج التعليمي (**Program Constituencies**) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية		محضر اللجنة العلمية رقــم المحضر:13 تأريخ المحضر: 2024/05/23

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين GOs الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية PEOs وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية PEOs

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite)

وبهذا اختتم المحضر

2

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقــم المحضر:13
تأريخ المحضر: 2024/05/23

أ.م.د. ضياء مصطفى نيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/05/23	2024/05/23	2024/05/23	2024/05/23	2024/05/23

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضوا	رئيس اللجنة العلمية
2024/05/23	2024/05/23	2024/05/23	2024/05/23

المعيار الثاني

محصلات الخريجين

محصلات التعلم المحددة لخريجي البرنامج GOs

فقرة (2-1-1)

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـم المحضر: 11
تأريخ المحضر: 2024/03/10

محضر الاجتماع الحادي عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ.ن/1304/2/1 في 2023/10/04، اجتماعها الحادي عشر في يوم الاحد الموافق 2024/03/10 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة. حيث تمت مناقشة مايلي:

أولا: المواد الدراسية للماجستير في جامعة الكوفة

ناقشت اللجنة العلمية اعتماد المواد الدراسية لدراسة الماجستير للفصلين ضمن تخصص هندسة المنشات الهيدروليكية/قسم الهندسة المدنية/كلية الهندسة/جامعة الكوفة بموجب كتاب الوزارة ذي العدد ب ت 1745/5 في 2024/2/13، وأوصت اللجنة بما يلي:

التوصية: الموافقة على اعتماد المواد الدراسية للتخصص المشار اليه ضمن الكتاب أعلاه مع ملاحظة التالي:

1) ان ترجمة مادة (Artificial Intelligence in water resources) يجب ان يكون (الذكاء الاصطناعي في الموارد المائية).
2) المادة (المنشات الهيدروليكية) يفترض انه قد تم تدريسها في الدراسات الأولية كونها من اختصاص القسم ويفترض في الدراسات العليا ان يتم التوسع في المادة واضافة كلمة (المتقدمة).
3) اسم المادة (Advanced Design of Reinforced Concrete) يجب ان يكون (Advanced Reinforced Concrete Design).
4) ان ترجمة مادة (optimization) يجب ان يكون (الامثلية)

ثانيا: متطلبات الاعتماد البرامجي

ناقشت اللجنة العلمية محضر لجنة الخبراء المؤرخ في 2024/3/9 والخاص باعداد رسالة ورؤية قسم الهندسة المدنية وكما في المرفقات واطلعت على محاور المحضر ومنها اهداف البرنامج التعليمية، محصلات الخريجين، المنهاج الدراسي للدراسات الاولية، وأوصت اللجنة بما يلي:

التوصية: الموافقة على فقرات المحضر اعلاه.

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـــم المحضر: 11
تأريخ المحضر: 2024/03/10

أ.م.د. ضياء مصطفى ذيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/03/10	2024/03/10	2024/03/10	2024/03/10	2024/03/10

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضو	رئيس اللجنة العلمية
2024/03/10	2024/03/10	2024/03/10	2024/03/10

السيد رئيس قسم الهندسة المدنية المحترم

م/محضر اجتماع لجنة الخبراء

تحية طيبة

اجتمعت لجنة الخبراء في قسم الهندسة المدنية والمشكلة بموجب الاداري ذي العدد

ه.ن./1 /1 / 4261 في 2023/9/18 والصادر من عمادة كلية الهندسة/جامعة النهرين اجتماعا الكترونيا وذلك في يوم السبت الموافق 2024/3/9 وأقرت معايير استبانة المراجعة الذاتية للجاهزية لنظام ادارة الجودة والاعتماد الاكاديمي في قسم الهندسة المدنية وحسب محضر الاجتماع المرفق.

للتفضل بالاطلاع والتنسيب مع التقدير

أ.د.جبار حمود البيضاني

رئيس لجنة الخبراء

2024/3/10

المرفقات:

محضر اجتماع

اللجنة العلمية

لاتخاذ ما يلزم رجاءً

٣/١١ ٢٠٢٤

رئيس القسم

اجتمعت لجنة الخبراء بتاريخ 2024/3/9 واقرت الأهداف التعليمية ومصفوفة التوافق بين محصلات الخريجين والأهداف التعليمية لقسم الهندسة المدنية وكما مبين ادناه

Adopted Graduate Outcomes

The program must have documented published and publicized graduate outcomes that prepare graduates to attain the program educational objectives few years after graduation. The graduate outcomes stated in this document are set according to the Iraqi Engineering Graduate's Attributes in terms of knowledge, skills, abilities and attitudes. Societal and environmental aspects must also be considered under the title of ethics. Students must be directed towards enhancing the quality of human life and maintaining sustainability principles, cultural heritage and humanitarian and patriotism values. Assessment of the graduate outcomes attained by exit students must be annually carried out upon graduation. Additional graduate outcomes can be articulated by any specific program according to its educational objectives. The seven outcomes of civil engineering program are listed below. They have been organized into a logical grouping of the knowledge and skills that are subset of each Graduate Outcomes (GOs).

Graduate outcomes:

i) An ability to distinguish, identify, define, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics.
ii) An ability to produce engineering designs that meet desired needs within certain constraints by applying both analysis and synthesis in the design process.
iii) An ability to create and carry out proper measurement and tests with quality assurance, analyze and interpret results, and utilize engineering judgment to make inferences.
iv) An ability to skillfully communicate orally with a gathering of people and in writing with various managerial levels.
v) An ability to perceive ethical and professional responsibilities in engineering cases and make brilliant judgments considering the consequences in worldwide financial, ecological, and societal considerations.
vi) An ability to perceive the continual necessity for professional knowledge growth and how to find, assess, assemble, and apply it properly.
vii) An ability to work adequately on teams and to set up objectives, plan activities, meet due dates, and manage risk and uncertainty.

اجتمعت لجنة الخبراء بتاريخ 2024/3/9 واقرت الأهداف الاستراتيجية وتوافق الأهداف التعليمية مع رسالة القسم لقسم الهندسة المدنية وكما مبين ادناه:

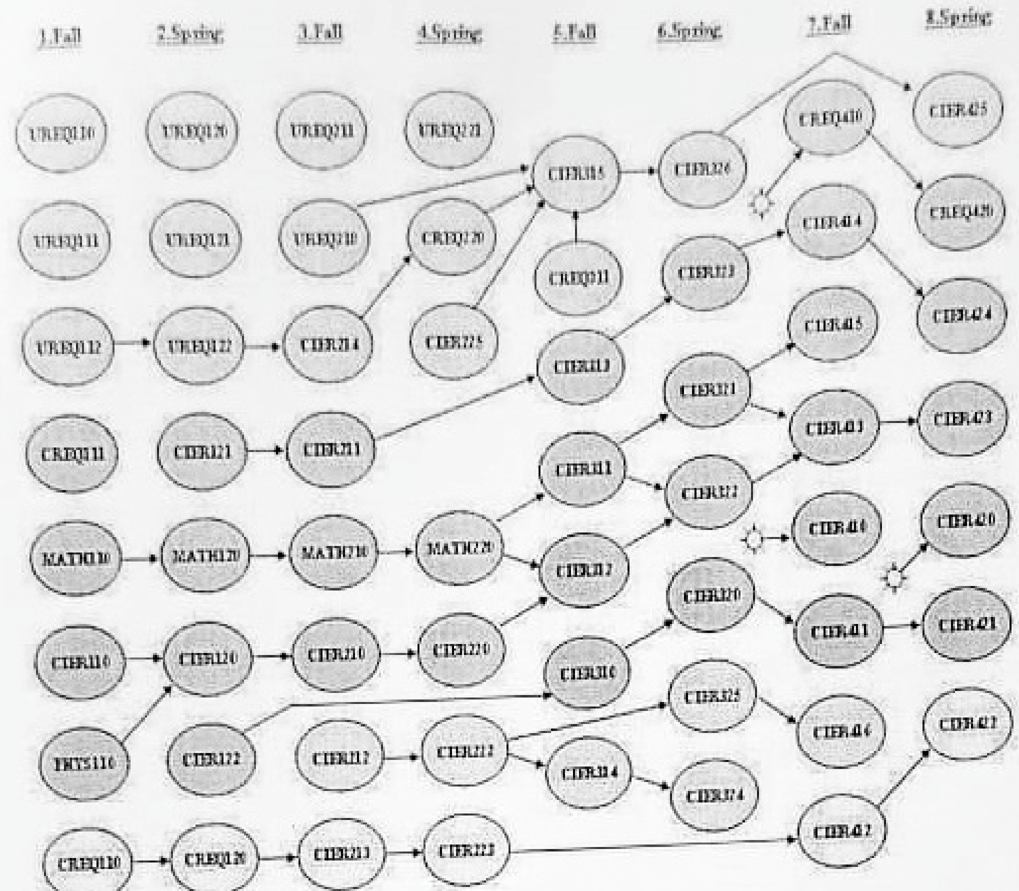
Statement of PEOs

Base on the mission of Al-Nahrain University and the college of Engineering, the graduate of the B.Sc. program in Civil Engineering will be able to:

1. PEO-1: use science, mathematics, computational thinking, and mechanical engineering ideas, such as design theory, experimental techniques, and production, to solve practical problems associated with design, improvement, manufacture and maintenance of mechanical systems.
2. PEO-2: Practice strong critical thanking, innovation, and problem-solving skills in order to pursue a successful career while demonstrating adherence to the professional codes of conduct and professional accountability.
3. PEO-3: Use effective communication skills and participate in multidisciplinary partnerships to demonstrate professional progress and leadership and demonstrate an appreciation and use of modern technological capabilities and to foster collaborative effort among co-workers and other institutions.
4. PEO-4: Work independently and in multidisciplinary teams to efficiently attain personal and organizational objectives, produce a product or construction that meets a social need, and contribute in teaching persons in the field while maintaining ethical and environmental context of their work.
5. PEO-5: Engage in life-long learning and career growth while maintaining professional standards and pursue further education in the form of graduate and professional studies.
6. PEO-6: Identify opportunities to contribute to the development of society life from a variety of positions, ranging from design and produce modern devices and introducing the cost-effective methods in production.

PEOs Consistency with the Mission Statement

The Civil Engineering Department PEOs are directly related to and in line with the department's goal. The first goal (PEO-1) is the first step toward a rewarding and service-oriented career. To accomplish this goal, the necessary information and abilities are obtained. Students get great education through a variety of means, including knowledge, skills, and values as indicated in PEO-1. PEO-1 also addresses professional and ethical problems. PEOs 2, 3, and 4 guarantee that instructional, administrative, and technical personnel have the attributes necessary for self-development, professional growth, and progress. The Civil Engineering Department's PEOs are also directly related to and congruent with the goals of Al-Nahrain University and the College of Engineering.



وبهذا ختم المحضر

المهندس الخبير اسماعيل عابد جاسم
دائرة الشؤون الهندسية/ديوان الوقف السني
عضوا
2024/3/9

المهندس مهند شهيد محسن سعود
المدير المفوض لشركة الرائدة المشتركة
عضوا
2024/3/9

أ.د.محمد عبدالخالق ابراهيم
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

أ.د.علاء حسين عبد حافظ
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

أ.د. عبدالعزيز عبدالرسول عزيز
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
9/3/2024

أ.م.د.ليث خالد كامل
قسم الهندسة المدنية/كلية
الهندسة /جامعة النهرين
رئيسا
9/3/2024

أ.د.[illegible] البيضاني
قسم الهندسة المدنية/كلية [illegible]/جامعة النهرين
رئيسا
9/3/2024

The Selected Graduate Outcomes are:

1. **GO-1:** An ability to distinguish, identify, define, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics.
2. **GO-2:** An ability to produce engineering designs that meet desired needs within certain constraints by applying both analysis and synthesis in the design process.
3. **GO-3:** An ability to create and carry out proper measurement and tests with quality assurance, analyze and interpret results, and utilize engineering judgment to make inferences.
4. **GO-4:** An ability to skillfully communicate orally with a gathering of people and in writing with various managerial levels.
5. **GO-5:** An ability to perceive ethical and professional responsibilities in engineering cases and make brilliant judgments considering the consequences in worldwide financial, ecological, and societal considerations.
6. **GO-6:** An ability to perceive the continual necessity for professional knowledge growth and how to find, assess, assemble, and apply it properly.
7. **GO-7:** An ability to work adequately on teams and to set up objectives, plan activities, meet due dates, and manage risk and uncertainty.

The Program Educational Objectives PEOs are:

Base on the mission of Al-Nahrain University and the college of Engineering, the graduate of the B.Sc. program in Civil Engineering will be able to:

1. **PEO-1:** use science, mathematics, computational thinking, and mechanical engineering ideas, such as design theory, experimental techniques, and production, to solve practical problems associated with design, improvement, manufacture and maintenance of mechanical systems.
2. **PEO-2:** Practice strong critical thanking, innovation, and problem-solving skills in order to pursue a successful career while demonstrating adherence to the professional codes of conduct and professional accountability.
3. **PEO-3:** Use effective communication skills and participate in multidisciplinary partnerships to demonstrate professional progress and leadership and demonstrate an appreciation and use of modern technological capabilities and to foster collaborative effort among co-workers and other institutions.
4. **PEO-4:** Work independently and in multidisciplinary teams to efficiently attain personal and organizational objectives, produce a product or construction that meets a social need, and contribute in teaching persons in the field while maintaining ethical and environmental context of their work.
5. **PEO-5:** Engage in life-long learning and career growth while maintaining professional standards and pursue further education in the form of graduate and professional studies.
6. **PEO-6:** Identify opportunities to contribute to the development of society life from a variety of positions, ranging from design and produce modern devices and introducing the cost-effective methods in production.

توافق محصلات الخريجين مع المحصلات المحددة في المعايير

فقرة (2-1-2)

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـم المحضر:13
تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ.ن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (**Program Education Objectives**) لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول **3.1** المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد **CLOs** مع محصلات التعلم **GOs** كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي **SAR** للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشأن (او المصلحة) بالبرنامج التعليمي (**Program Constituencies**) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية		محضر اللجنة العلمية رقـــم المحضر:13 تأريخ المحضر: 2024/05/23

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين **GOs** الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs** كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs**

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية **PEOs** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية **PEOs**

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)**

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـم المحضر: **13**
تأريخ المحضر: **2024/05/23**

أ.م.د. ضياء مصطفى نيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/05/23	2024/05/23	2024/05/23	2024/05/23	2024/05/23

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضوا	رئيس اللجنة العلمية
2024/05/23	2024/05/23	2024/05/23	2024/05/23

اماكن النشر لمحصلات الخريجين

فقرة (2-1-3)

عدد الزوار

5822377

Research Gate

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قسم الهندسة المدنية
1988

اهداف التعليم البرامجي ومحصلات التخرج لقسم الهندسة المدنية

Program Educational Objectives (PEOs)

Base on the mission of Al-Nahrain University and the college of Engineering. :the graduate of the B.Sc. program in Civil Engineering will be able to

1. PEO-1: use science, mathematics, computational thinking, and mechanical engineering ideas, such as design theory, experimental techniques, and production, to solve practical problems associated with design, improvement, manufacture and maintenance of mechanical .systems
2. PEO-2: Practice strong critical thanking, innovation, and problem-solving skills in order to pursue a successful career while demonstrating adherence to the professional codes of conduct and professional .accountability
3. PEO-3: Use effective communication skills and participate in multidisciplinary partnerships to demonstrate professional progress and leadership and demonstrate an appreciation and use of modern technological capabilities and to foster collaborative effort among co-.workers and other institutions
4. PEO-4: Work independently and in multidisciplinary teams to efficiently attain personal and organizational objectives, produce a product or construction that meets a social need, and contribute in teaching persons in the field while maintaining ethical and environmental context of their .work
5. PEO-5: Engage in life-long learning and career growth while maintaining professional standards and pursue further education in the form of .graduate and professional studies
6. PEO-6: Identify opportunities to contribute to the development of society life from a variety of positions, ranging from design and produce modern .devices and introducing the cost-effective methods in production

Graduate outcomes

i) An ability to distinguish, identify, define, formulate, and solve engineering problems by applying principles of engineering, science, .and mathematics

ii) An ability to produce engineering designs that meet desired needs within certain constraints by applying both analysis and .synthesis in the design process

iii) An ability to create and carry out proper measurement and tests with quality assurance, analyze and interpret results, and utilize .engineering judgment to make inferences

iv) An ability to skillfully communicate orally with a gathering of .people and in writing with various managerial levels

v) An ability to perceive ethical and professional responsibilities in engineering cases and make brilliant judgments considering the consequences in worldwide financial, ecological, and societal .considerations

vi) An ability to perceive the continual necessity for professional knowledge growth and how to find, assess, assemble, and apply it .properly

vii) An ability to work adequately on teams and to set up objectives, .plan activities, meet due dates, and manage risk and uncertainty

عناوين الاتصال
صندوق البريد : 64040
هاتف: (964+) 07830514167
البريد الإلكتروني: dean.engineering@nahrainuniv.edu.iq
عنوان الكلية

مصفوفة التوافق بين المحصلات و الاهداف التعليمية

فقرة (2-2-2)

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقم المحضر:13
تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ.ن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (Program Education Objectives) لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول 3.1 المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد CLOs مع محصلات التعلم GOs كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي SAR للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشان (او المصلحة) بالبرنامج التعليمي (Program Constituencies) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

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جامعة النهرين كلية الهندسة قسم الهندسة المدنية		محضر اللجنة العلمية رقـــم المحضر:13 تأريخ المحضر: 2024/05/23

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين GOs الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية PEOs وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية PEOs

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite)

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
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محضر اللجنة العلمية
رقـــم المحضر:13
تأريخ المحضر: 2024/05/23

أ.م.د. ضياء مصطفى نيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/05/23	2024/05/23	2024/05/23	2024/05/23	2024/05/23

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضو	رئيس اللجنة العلمية
2024/05/23	2024/05/23	2024/05/23	2024/05/23

المرفق رقم (8)

علاقة محصلات الخريجين بالاهداف التعليمية

الجدول ادناه يوضح العلاقة بين محصلات الخرجين GOs و الاهداف التعليمية PEOs

PEOs	GOs						
	GO-1	GO-2	GO-3	GO-4	GO-5	GO-6	GO-7
PEO-1	*	*	*				
PEO-2	*	*	*		*		
PEO-3				*	*		
PEO-4				*		*	
PEO-5				*	*	*	
PEO-6					*	*	*

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية	محضر اللجنة العلمية رقــم المحضر : **11** تأريخ المحضر : **2024/03/10**

محضر الاجتماع الحادي عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ.ن/1304/2/1 في **2023/10/04**، اجتماعها الحادي عشر في يوم الاحد الموافق **2024/03/10** برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: المواد الدراسية للماجستير في جامعة الكوفة

ناقشت اللجنة العلمية اعتماد المواد الدراسية لدراسة الماجستير للفصلين ضمن تخصص هندسة المنشآت الهيدروليكية/قسم الهندسة المدنية/كلية الهندسة/جامعة الكوفة بموجب كتاب الوزارة ذي العدد ب ت 1745/5 في 2024/2/13، وأوصت اللجنة بما يلي:

التوصية: الموافقة على اعتماد المواد الدراسية للتخصص المشار اليه ضمن الكتاب أعلاه مع ملاحظة التالي:

1) **ان ترجمة مادة (Artificial Intelligence in water resources) يجب ان يكون (الذكاء الاصطناعي في الموارد المائية).**
2) **المادة (المنشآت الهيدروليكية) يفترض انه قد تم تدريسها في الدراسات الأولية كونها من اختصاص القسم ويفترض في الدراسات العليا ان يتم التوسع في المادة واضافة كلمة (المتقدمة).**
3) **اسم المادة (Advanced Design of Reinforced Concrete) يجب ان يكون (Advanced Reinforced Concrete Design).**
4) **ان ترجمة مادة (optimization) يجب ان يكون (الامثلية)**

ثانيا: متطلبات الاعتماد البرامجي

ناقشت اللجنة العلمية محضر لجنة الخبراء المؤرخ في 2024/3/9 والخاص باعداد رسالة ورؤية قسم الهندسة المدنية وكما في المرفقات واطلعت على محاور المحضر ومنها اهداف البرنامج التعليمية، محصلات الخريجين، المنهاج الدراسي للدراسات الاولية، وأوصت اللجنة بما يلي:

التوصية: الموافقة على فقرات المحضر اعلاه.

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جامعة النهرين
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محضر اللجنة العلمية
رقـم المحضر: **11**
تأريخ المحضر: **2024/03/10**

أ.م.د. ضياء مصطفى ذيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/03/10	2024/03/10	2024/03/10	2024/03/10	2024/03/10

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضو	رئيس اللجنة العلمية
2024/03/10	2024/03/10	2024/03/10	2024/03/10

السيد رئيس قسم الهندسة المدنية المحترم

م/محضر اجتماع لجنة الخبراء

تحية طيبة

اجتمعت لجنة الخبراء في قسم الهندسة المدنية والمشكلة بموجب الاداري ذي العدد

ه.ن./1 /1 / 4261 في 2023/9/18 والصادر من عمادة كلية الهندسة/جامعة النهرين اجتماعا الكترونيا وذلك في يوم السبت الموافق 2024/3/9 وأقرت معايير استبانة المراجعة الذاتية للجاهزية لنظام ادارة الجودة والاعتماد الاكاديمي في قسم الهندسة المدنية وحسب محضر الاجتماع المرفق.

للتفضل بالاطلاع والتنسيب مع التقدير

أ.د.جبار حمود البيضاني
رئيس لجنة الخبراء
2024/3/10

المرفقات:

محضر اجتماع

اللجنة العلمية

المعيار الأول: أهداف البرنامج التعليمية

اجتمعت لجنة الخبراء بتاريخ 2024/3/9 واقرت رسالة ورؤية قسم الهندسة المدنية وكما مبين ادناه:

Vision

The Department of Civil Engineering endeavors to be one of the leading Civil Engineering Programs in Iraq and the region. The global economy and rapid changes in technology requires an increasing number of civil engineers. Today's civil engineers are confronted with broader job responsibilities, often involving modern technological aspects that must be integrated with the traditional disciplines. The high demand by professional firms in the Construction Industry for civil engineers impose the need for civil engineering programs in which qualifications are valuable for career advancement. The competitive nature of the Construction Industry in the region requires civil engineers that acquire good knowledge and skills in dealing with new technologies. Identifying, evaluating, implementing and managing the most appropriate resources, technologies and systems demands a well-developed level of technical and managerial skills and team-work capabilities. The civil engineering program enhance the technical and managerial knowledge and skills of its graduates to meet today's demands and needs as well as those of the future. The program emphasizes academic and research excellence along with professional development of students in particular areas of interest in civil engineering. The program offers a wide selection of courses and research activities related to civil engineering which satisfies the local as well as the global needs of the Construction Industry. The Main Features of the Program: its quality is comparable with similar international programs while introducing flexibility to meet local needs without affecting its quality. The program is well positioned to address the areas of recent research in the area.

Mission

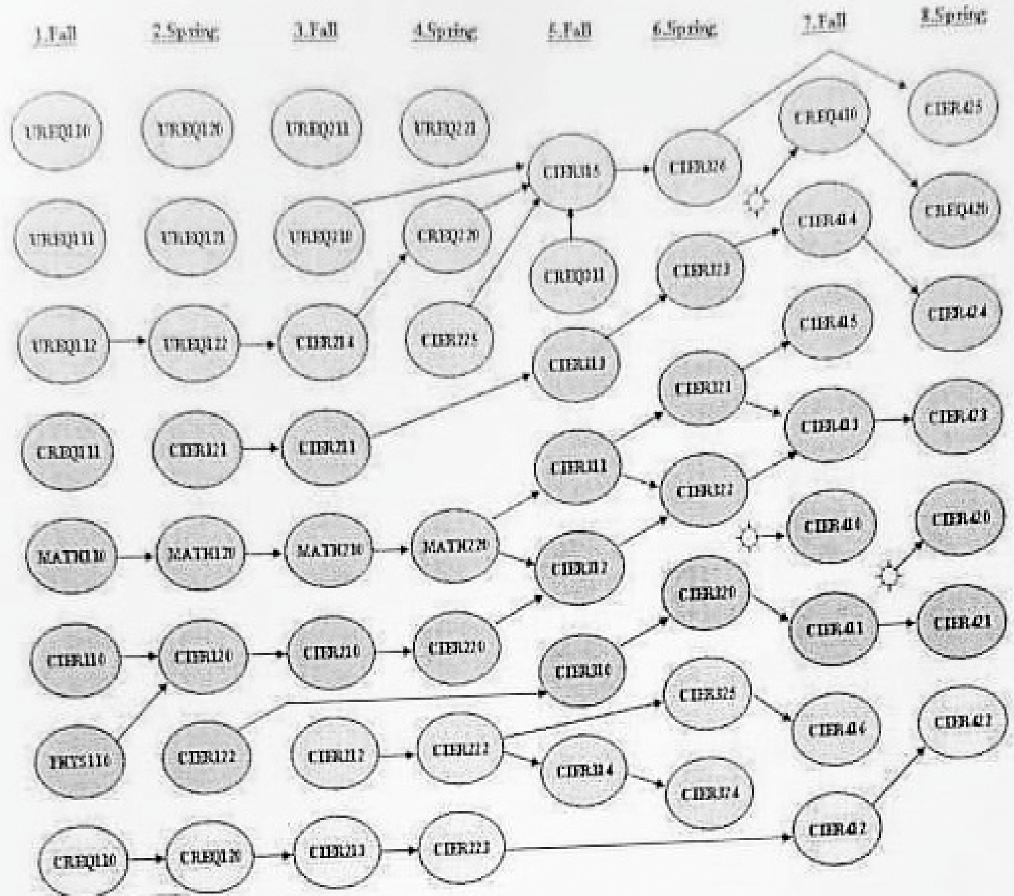
The Department of Civil Engineering, aspires to be a center of excellence in educating professionals in civil engineering in Iraq. The philosophy of the department is to promote a model of education that promotes both professional and educational aspects of a discipline that supports academic creativity, cultural development, and operates within an environment that encourages technology transfer. The Department offers a comprehensive program at undergraduate and postgraduate levels that can play a pivotal role in the development of the engineering areas in Iraq, and provide a forum for research into topical areas and contribute to policy debates. The department of civil engineering to be one of the leading civil engineering programs in Iraq and the region. Nurturing and care of outstanding students and encouraging them to use their skills.

Relating GOs to PEOs

Graduate outcomes prepare graduates to attain the program educational objectives. The relationship illustrating the Graduate outcomes serving each program objective is mapped in Table 2.

Table 2: Mapping Between Graduate Outcomes and Program Educational Objectives

Program Educational Objectives	Graduate Outcomes
- Use science, mathematics, computational thinking, and mechanical engineering ideas, such as design theory, experimental techniques, and production, to solve practical problems associated with design, improvement, manufacture and maintenance of mechanical systems.	i , ii &iii
- Practice strong critical thanking, innovation, and problem-solving skills in order to pursue a successful career while demonstrating adherence to the professional codes of conduct and professional accountability.	i, ii, iii & v
- Use effective communication skills and participate in multidisciplinary partnerships to demonstrate professional progress and leadership and demonstrate an appreciation and use of modern technological capabilities and to foster collaborative effort among co-workers and other institutions	iv & v
- Work independently and in multidisciplinary teams to efficiently attain personal and organizational objectives, produce a product or construction that meets a social need, and contribute in teaching persons in the field while maintaining ethical and environmental context of their work.	iv & vi
- Engage in life-long learning and career growth while maintaining professional standards and pursue further education in the form of graduate and professional studies.	iv, v & vi
- Identify opportunities to contribute to the development of society life from a variety of positions, ranging from design and produce modern devices and introducing the cost-effective methods in production.	v, vi & vii



وبهذا ختم المحضر

المهندس الخبير اسماعيل عايد جاسم
دائرة الشؤون الهندسية/ديوان الوقف السني
عضوا
2024/3/9

المهندس مهند شهيد محسن سعود
المدير المفوض لشركة الرافدة المشتركة
عضوا
2024/3/9

أ.د.محمد عبدالخالق ابراهيم
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

أ.د.علاء حسين عبد حافظ
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

أ.د. عبدالعزيز عبدالرسول عزيز
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
9/3/2024

أ.م.د.ليث خالد كامل
قسم الهندسة المدنية/كلية
الهندسة /جامعة النهرين
رئيسا
9/3/2024

أ.د.جبار حمود البيضاني
قسم الهندسة المدنية/كلية الهندسة/جامعة النهرين
رئيسا

9/3/2024

المعيار الثالث

المنهج الدراسي

Criterion 3: Curriculum

محضراللجنة العلميةالمصادقة على الخطة الدراسية لقسم الهندسة المدنية

فقرة (3-3-1)

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـــم المحضر: 11
تاريخ المحضر: 2024/03/10

محضر الاجتماع الحادي عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ ن/1304/2/1 في 2023/10/04، اجتماعها الحادي عشر في يوم الاحد الموافق 2024/03/10 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: المواد الدراسية للماجستير في جامعة الكوفة

ناقشت اللجنة العلمية اعتماد المواد الدراسية لدراسة الماجستير للفصلين ضمن تخصص هندسة المنشات الهيدروليكية/قسم الهندسة المدنية/كلية الهندسة/جامعة الكوفة بموجب كتاب الوزارة ذي العدد ب ت 1745/5 في 2024/2/13، وأوصت اللجنة بما يلي:

التوصية: الموافقة على اعتماد المواد الدراسية للتخصص المشار اليه ضمن الكتاب أعلاه مع ملاحظة التالي:

1) ان ترجمة مادة (Artificial Intelligence in water resources) يجب ان يكون (الذكاء الاصطناعي في الموارد المائية).
2) المادة (المنشات الهيدروليكية) يفترض انه قد تم تدريسها في الدراسات الأولية كونها من اختصاص القسم ويفترض في الدراسات العليا ان يتم التوسع في المادة واضافة كلمة (المتقدمة).
3) اسم المادة (Advanced Design of Reinforced Concrete) يجب ان يكون (Advanced Reinforced Concrete Design).
4) ان ترجمة مادة (optimization) يجب ان يكون (الامثلية)

ثانيا: متطلبات الاعتماد البرامجي

ناقشت اللجنة العلمية محضر لجنة الخبراء المؤرخ في 2024/3/9 والخاص باعداد رسالة ورؤية قسم الهندسة المدنية وكما في المرفقات واطلعت على محاور المحضر ومنها اهداف البرنامج التعليمية، محصلات الخريجين، المنهاج الدراسي للدراسات الاولية، وأوصت اللجنة بما يلي:

التوصية: الموافقة على فقرات المحضر اعلاه.

أ.م.د. ضياء مصطفى ذيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/03/10	2024/03/10	2024/03/10	2024/03/10	2024/03/10

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضوا	رئيس اللجنة العلمية
2024/03/10	2024/03/10	2024/03/10	2024/03/10

السيد رئيس قسم الهندسة المدنية المحترم

م/محضر اجتماع لجنة الخبراء

تحية طيبة

اجتمعت لجنة الخبراء في قسم الهندسة المدنية والمشكلة بموجب الاداري ذي العدد ه.ن./1 /1 / 4261 في 2023/9/18 والصادر من عمادة كلية الهندسة/جامعة النهرين اجتماعا الكترونيا وذلك في يوم السبت الموافق 2024/3/9 وأقرت معايير استبانة المراجعة الذاتية للجاهزية لنظام ادارة الجودة والاعتماد الاكاديمي في قسم الهندسة المدنية وحسب محضر الاجتماع المرفق.

للتفضل بالاطلاع والتنسيب مع التقدير

أ.د.جبار حمود البيضاني

رئيس لجنة الخبراء

2024/3/10

المرفقات:

محضر اجتماع

اللجنة العلمية

لاتخاذ ما يلزم رجاءً

٣/١١

رئيس القسم

المعيار الثالث: المنهاج الدراسي

اجتمعت لجنة الخبراء بتاريخ /2024/3/ واقرت المنهاج الدراسي لقسم الهندسة المدنية وكما مبين ادناه:

Program Structure and Content

Study Plan

The curriculum requirements specify subject areas appropriate to engineering but do not prescribe specific subjects. The study plan components must include:

a. A combination of mathematics and basic sciences general education component (some with experimental experience) appropriate to the discipline.
b. Engineering topics, consisting of engineering sciences and engineering design appropriate to the student's field of study.
c. A general education component that complements the technical content of the curriculum and is consistent with the program and institution objectives.

The civil engineering program must develop the knowledge and skills that will enable students to:

- Apply mathematical and scientific concepts for the description and solution of engineering problems.
- Develop the ability to conduct experiments, and critically analyze and interpret data.
- Identify, formulate, and solve civil engineering problems using modern engineering tools, techniques, and skills.
- Perform civil engineering integrated design of systems, components, or processes by means of practical experiences.
- Collaborate in team work.
- Develop written and oral communication skills through presentations of project results.
- Develop initial proficiency in civil engineering disciplines.
- Acquire an appreciation for some of the ethical problems that arise in the exercise of the profession.

Typical degree program is shown in **Table 3** for General Mechanical engineering.

Table 3: B.Sc. Degree Curriculum / Civil Engineering

AL-NAHRAIN UNIVERSITY

College of Engineering

Department of Civil Engineering

Study Plan for the B.Sc. Degree Course (2022-2023)

First Year

First Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 110	Human Rights	1			1
2	UREQ 111	Computer Fundamentals and Programming I	1	2		2
3	MATH 110	Mathematics I	3		1	3
4	CREQ 110	Engineering Drawings I	1	2		2
5	CREQ 111	Workshop Technology		3		
6	PHYS 110	Physics	2	2		3
7	CIER 110	Engineering Mechanics I	4			4
Total			12	9	1	15
			22			

Second Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 120	Arabic Language I	1			1
2	UREQ 121	English Language I	2			2
3	MATH 120	Mathematics II	3		1	3
4	CREQ 120	Engineering Drawing II	1	2		2
5	CREQ 121	Elective *	2			2
6	CIER 120	Engineering Mechanics II	3		1	3
7	CIER 121	Material Technology	2	2		3
8	CIER 122	Engineering Geology	2	1		2
Total			16	5	2	18
			23			

Second Year

First Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 210	English Language II	2			2
2	UREQ 211	Principles of Management	1			1
3	UREQ 212	Arabic Language II	1			1
4	UREQ 213	Computer Fundamentals and Programming II	1	2		2
5	MATH 210	Mathematics III	3		1	3
6	CIER 210	Mechanics of Materials I	3	2		4
7	CIER 211	Concrete Technology	3	2		4
8	CIER 212	Fluid Mechanics I	3	2		4
9	CIER 213	Geomatics I	2	3		3
Total			19	11	1	24
			31			

<u>Second Semester</u>

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 220	Democracy	1			1
2	MATH 220	Mathematics IV	3		1	3
3	CREQ220	Engineering Statistics	2			2
4	CIER 221	Mechanics of Materials II	3		1	3
5	CIER 220	Building Construction	2	2		3
6	CIER 225	Fluid Mechanics II	3	2		4
7	CIER 222	Geomatics II	2	3		3
Total			16	7	2	19
			25			

Third Year

First Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	CIER 311	Engineering Mathematics I	3			3
2	CIER 310	Soil Mechanics I	3	2		4
3	CIER 312	Theory of Structures I	3		1	3
4	CIER 313	Reinforced Concrete Design I	3		1	3
5	CIER 314	Sanitary Engineering I	2	2	1	3
6	CIER 315	Engineering Management &Economy	3			3
7	CIER 316	Hydrology	2		1	2
8	CIER 317	Traffic Engineering	2		1	2
Total			21	4	5	23
			30			

<u>Second Semester</u>

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 320	English Language III	2			2
2	CIER 321	Engineering Mathematics II	3			3
3	TRAN#90	Summer Training				-
4	CIER 320	Soil Mechanics II	3	2		4
5	CIER 322	Theory of Structures II	3		1	3
6	CIER 323	Reinforced Concrete Design II	3		1	3
7	CIER 324	Sanitary Engineering II	2	2	1	3
8	CIER 326	Construction Methods	2		1	2
9	CIER 327	Hydraulics	2		1	2
Total			20	4	5	22
			29			

Fourth Year

First Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 410	English Language IV	2			2
2	CREQ 410	Project I		4		2
3	CIER 410	Elective I *	3			3
4	CIER 411	Foundation Engineering I	3			3
5	CIER 412	Transportation Engineering I	1	2	1	2
6	CIER 414	Reinforced Concrete Design III	3		1	3
7	CIER 413	Steel Design I	2		2	3
8	CIER 415	Computer Application in Civil Engineering	2		1	2
9	CIER 417	Quantity Surveying	3			3
Total			19	6	5	23
			30			

Second Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	ETHC 420	Professional Ethics	1			1
2	CREQ 420	Project		4		2
3	CIER 420	Elective II *	2		1	2
4	CIER 421	Foundation Engineering II	3			3
5	CIER 422	Transportation Engineering II	2	2		3
6	CIER 424	Reinforced Concrete Design IV	3		1	3
7	CIER 423	Steel Design II	2		2	3
8	CIER 426	Numerical Analysis	2		1	2
Total			15	6	5	19
			26			

Approved Electives:

* Chemistry, Biology, Geology, General Science, Dynamic of Structure, Advanced Concrete Technology, Water Resources, Bridge Engineering, Matrix Structural Analysis, Environmental Engineering, Plumbing Engineering, Airport Engineering, Remote Sensing and GIS, Selected Topics

Republic of Iraq - Ministry of Higher Education and Scientific Research
Al-Nahrain University
Bachelor's degree of Science in Civil Engineering
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2023 - 2024)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
جامعة النهرين
بكالوريوس علوم في الهندسة المدنية
أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوروبية - كل وحدة اوروبية = ٢٥ ساعة
المنهاج الدراسي للعام ٢٠٢٣-٢٠٢٤

BP - Civil Dep.

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	One	1	UREQ 110	Workshop Technology		Arabic				3		0	3	48	27	75	3.00	HSS	
		2	UREQ 111	Computer Fundamentals and Programming I		English	2		2				3	63	12	75	3.00	HSS	
		3	MATH 110	Mathematics		English	4						3	63	62	125	5.00	FS	
		4	CREQ 110	Engineering Drawing		English	2		3				3	78	47	125	5.00	FE	
		5	UREQ 112	Human Rights and Democracy		Arabic	2					0	3	33	17	50	2.00	HSS	
		6	PHYS 110	Physics		English	2		2				3	63	62	125	5.00	FS	
		7	CER 110	Engineering Mechanics I		English	3				1		3	63	62	125	5.00	FE	
		8	UREQ 113	Arabic Language		Arabic	2						3	33	17	50	2.00		
						Total	17	0	7	3	1	0	24	444	306	750	30		

UGI	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Two	1	CREQ 120	Chemistry		English	2		2				3	63	37	100	4.00	FS	
		2	MATH 120	Fundamentals of Engineering Mathematics		English	3				1		3	63	62	125	5.00	FS	MATH 110
		3	CREQ 121	Engineering Graphics		English	2		2				3	63	62	125	5.00	FE	CREQ 110
		4	CREQ 122	Geology		English	2		2				3	63	62	125	5.00	FS	
		5	CER 120	Fundamentals of Static and Dynamic		English	3				1		3	63	62	125	5.00	FE	CIER 110
		6	CER 121	Material Technology		English	2		2				3	63	37	100	4.00	FE	
		7	UREQ 120	English Language I		English	2						3	33	17	50	2.00	HSS	
						Total	16	0	8	0	2	0	21	411	339	750	30		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Three	1	UREQ 210	Computer Fundamentals and Programming II		English	2		2				3	63	12	75	3.00	HSS	UREQ 111
		2	MATH 210	Engineering Mathematics		English	3				1		3	63	62	125	5.00	FS	MATH 120
		3	CER 210	Mechanics of Materials I		English	3				1		3	63	62	125	5.00	FE	CIER 120
		4	CER 211	Concrete Technology		English	3		2				3	78	47	125	5.00	FE	
		5	CER 212	Fluid Mechanics I		English	2		2				3	63	62	125	5.00	FE	
		6	UREQ 211	Crimes of the Defunct Baath Party		Arabic	2						3	33	17	50	2.00	HSS	
		7	CER 213	Geomatics I		English	2		2				3	63	62	125	5.00	FE	
						Total	17	0	8		2		21	426	324	750	30.00		

UGII	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Four	1	MATH 220	Analytic Mathematics		English	3				1		3	63	62	125	5.00	FS	MATH 210
		2	CREQ 220	Engineering Statistics		English	3						3	48	77	125	5.00	FE	
		3	CER 220	Building Construction		English	3				2		3	78	47	125	5.00	FE	
		4	CER 221	Mechanics of Materials II		English	3				1		3	63	62	125	5.00	FE	CIER 210
		5	CER 222	Geomatics II		English	2		2				3	63	37	100	4.00	FE	CIER 213
		6	CER 223	Fluid Mechanics II		English	3		2				3	78	22	100	4.00	FE	CIER 212
		7	UREQ 220	English Language II		English	2						3	33	17	50	2.00	HSS	UREQ 120
						Total	19	0	4	0	4	0	21	426	324	750	30		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Five	1	CER 310	Soil Mechanics I		English	3		2				3	78	22	100	4.00	FE	
		2	CER 311	Engineering and Numerical Analysis		English	5				1		3	93	57	150	6.00	FE	MATH 220
		3	CER 312	Theory of Structures I		English	3				1		3	63	37	100	4.00	FE	CIER 221
		4	CER 313	Reinforced Concrete Design I		English	3				1		3	63	37	100	4.00	ED	CIER 221
		5	CER 314	Sanitary Engineering I		English	2		2				3	63	37	100	4.00	ED	
		6	CER 315	Engineering Management & Economics		English	2						3	33	67	100	4.00	FE	
		7	CER 316	Traffic Engineering I		English	2				1		3	48	52	100	4.00	FE	
						Total	20	0	4		4		21	441	309	750	30.00		

UGIII	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Six	1	CIER 320	Soil Mechanics II		English	3		2				3	78	47	125	5.00	FE	CIER 310
		2	ETHC 320	Professional Ethics		English	2						3	33	17	50	2.00	HSS	
		3	CIER 321	Theory of Structures II		English	3				1		3	63	62	125	5.00	FE	CIER 312
		4	CIER 322	Reinforced Concrete Design II		English	3				1		3	63	62	125	5.00	ED	CIER 313
		5	CIER 323	Sanitary Engineering II		English	2		2		1		3	78	22	100	4.00	ED	CIER 314
		6	CIER 324	Hydrology		English	2				2		3	63	62	125	5.00	FE	
		7	CIER 325	Environmental Engineering		English	2				2		3	63	37	100	4.00	FE	
						Total	17	0	4		7		21	441	309	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Seven	1	CREQ 410	Project I		English				2			3	33	17	50	2.00	ED	
		2	CIER 410	Elective I		English	3				1		3	63	37	100	4.00	FE	
		3	CIER 411	Foundation Engineering I		English	3				1		3	63	62	125	5.00	ED	CIER 320
		4	CIER 412	Geometric Design of Highways		English	3				1		3	63	62	125	5.00	ED	CIER 316
		5	CIER 413	Steel Design I		English	3				1		3	63	62	125	5.00	ED	CIER 321
		6	CIER 414	Reinforced Concrete Design III		English	3				1		3	63	62	125	5.00	ED	CIER 322
		7	CIER 415	Hydraulics		English	2				2		3	63	37	100	4.00	ED	
						Total	17				7		21	411	339	750	30.0		

UGIV	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Eight	1	CREQ 420	Project II		English				2			3	33	17	50	2.00	ED	
		2	CIER 420	Elective II		English	3				1		3	63	62	125	5.00	FE	
		3	CIER 421	Foundation Engineering II		English	3				1		3	63	62	125	5.00	ED	CIER 411
		4	CIER 422	Pavement Engineering		English	2		2				3	63	37	100	4.00	ED	CIER 412
		5	CIER 423	Steel Design II		English	3				1		3	63	62	125	5.00	ED	CIER 413
		6	CIER 424	Reinforced Concrete Design IV		English	3				1		3	63	62	125	5.00	ED	CIER 414
		7	CIER 425	Construction Methods & Estimation		English	3				1		3	63	37	100	4.00	FE	
						Total	17		2	2	5		21	411	339	750	30.0		

Total Recordes	CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam	SSWL	USSWL	SWL	ECTS	Must be 240 ECTS
	140	0	37	5	32	0	171	3411	2589	6000	240.0	

Note: The student should complete 4 weeks of Summer internships to fulfill the requirements of the Bachelor's degree

Structured SWL (hr/w) type		Module Types			
CL	Class Lecture	B	Basic learning activities	SWL:	Student Workload
Lab	Laboratory	C	Core learning activity	SSWL:	Structured SWL
Pr	Practical Training	S	Suport or related learning activity	USSWL:	Unstructured SWL
Tut	Tutorial	E	Elective learning activity		
Lect	Online lecture				
Semn	Seminar				

Note: Columns O, Q and R are programed, protected and should not be edited

Elective Modules I	
1	Airport Engineering
2	Plumbing
3	Masonary Engineering
4	Durability of Concrete Structures
5	Construction Materials
6	Computer Application in Civil Engineering

Elective Modules II	
1	Bridge Engineering
2	Selected Topics in Civil Engineering
3	Railway Engineering
4	Fundamentals of Soil Improvement
5	Traffic Engineering II
6	Earthquake Engineering

محضر اللجنة العلمية لبيان توافق المنهاج الدراسي مع الاهداف التعليمية فقرة (3-1-2)

محضر اللجنة العلمية مثبت فيه المصادقة على الفقرة

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية	محضر اللجنة العلمية رقم المحضر:13 تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ.ن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (**Program Education Objectives**) لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول **3.1** المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد **CLOs** مع محصلات التعلم **GOs** كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي **SAR** للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشأن (او المصلحة) بالبرنامج التعليمي (**Program Constituencies**) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية		محضر اللجنة العلمية رقـــم المحضر:13 تأريخ المحضر: 2024/05/23

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين GOs الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية PEOs وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية PEOs

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite)

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية	محضر اللجنة العلمية رقـــم المحضر:**13** تأريخ المحضر: **2024/05/23**

أ.م.د. ضياء مصطفى نيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/05/23	2024/05/23	2024/05/23	2024/05/23	2024/05/23

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضوا	رئيس اللجنة العلمية
2024/05/23	2024/05/23	2024/05/23	2024/05/23

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقــم المحضـر: **13**
تأريخ المحضر: **2024/05/23**

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ ن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (**Program Education Objectives**) لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول **3.1** المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد **CLOs** مع محصلات التعلم **GOs** كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي **SAR** للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشأن (او المصلحة) بالبرنامج التعليمي (**Program Constituencies**) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية		محضر اللجنة العلمية رقـــم المحضر: **13** تأريخ المحضر: **2024/05/23**

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين GOs الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية PEOs وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية PEOs

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite)

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـــم المحضر:**13**
تأريخ المحضر: **2024/05/23**

أ.م.د. ضياء مصطفى نيبان	**أ.م.د. حسن موسى جواد**	**أ.م.د. هيثم علاء حسين**	**أ.د. حاتم عبد الكريم رشيد**	**أ.د. مصعب عايد كصب**
عضوا ومقررا	**عضوا**	**عضوا**	**عضوا**	**عضوا**
2024/05/23	**2024/05/23**	**2024/05/23**	**2024/05/23**	**2024/05/23**

أ.د. علاء حسين عبد حافظ	**أ.د. أحمد سلطان علي**	**أ.د. جبار حمود عبد النبي البيضاني**	**أ.د. عبد العزيز عبد الرسول عزيز**
عضوا	**عضوا**	**عضوا**	**رئيس اللجنة العلمية**
2024/05/23	**2024/05/23**	**2024/05/23**	**2024/05/23**

المرفق رقم (7)

The relationships of CLOs to GOs might need preparing a “Course Portfolio” for each course

SEMESTER / YEAR	CODE	COURSE OBJECTIVE	GOs						
			I	II	III	IV	V	VI	VII
1st Sem. 1st Year	UREQ 110	Workshop Technology							
	UREQ 111	Computer Fundamentals and Programming I							
	MATH 110	Mathematics	*			*		*	
	CREQ 110	Engineering Drawing							
	UREQ 112	Human Rights and Democracy							
	PHYS 110	Physics	*	*	*				
	CIER 110	Engineering Mechanics I	*	*	*				
	UREQ 113	Arabic Language							
2nd Sem. 1st Year	CREQ 120	Chemistry							
	MATH 120	Fundamentals of Engineering Mathematics	*			*		*	
	CREQ 121	Computer-Aided Drawing II							
	CREQ 122	Geology							
	CIER 120	Fundamentals of Static and Dynamic	*	*	*				
	CIER 121	Material Technology			*	*			*
	UREQ 120	English Language I							
1st Sem. 2nd Year	UREQ 210	Computer Fundamentals and Programming II	*				*	*	*
	MATH 210	Mathematics III	*	*	*		*	*	
	CIER 210	Mechanics of Materials I	*	*	*				
	CIER 211	Concrete Technology							
	CIER 212	Fluid Mechanics I	*	*	*			*	
	UREQ 210	English Language II							
	UREQ 211	Principles of Management							
	UREQ 212	Arabic Language II							
	CIER 213	Geomatics I							
2nd Sem. 2nd Year	MATH 220	Mathematics IV	*	*	*		*	*	
	CREQ 220	Engineering Statistics							
	CIER 220	Building Construction							
	CIER 221	Mechanics of Materials II	*	*	*				
	CIER 222	Geomatics II							
	CIER 223	Fluid Mechanics II	*	*	*			*	
	UREQ 220	Democracy							
1st Sem. 3rd Year	CIER 310	Soil Mechanics I	*	*	*	*	*	*	
	CIER 311	Engineering Mathematics I	*	*	*	*			
	CIER 312	Theory of Structures I	*	*	*		*	*	
	CIER 313	Reinforced Concrete Design I	*	*					
	CIER 314	Sanitary Engineering I	*	*	*	*		*	
	CIER 316	Hydrology							
	CIER 315	Engineering Management & Economics	*	*	*				
	CIER 316	Traffic Engineering I	*	*	*	*	*	*	*
2nd Sem. 3rd Year	CIER 320	Soil Mechanics II	*		*	*		*	*
	CIER 321	Engineering Mathematics II	*	*	*	*			
	CIER 321	Theory of Structures II	*	*	*		*	*	
	CIER 322	Reinforced Concrete Design II	*	*					
	CIER 323	Sanitary Engineering II	*	*	*	*		*	
	CIER 326	Construction Methods	*	*	*	*			
	CIER 327	Hydraulics							
	UREQ 320	English Language III							

1st Sem. 4th Year	CREQ 410	Project							
	UREQ 410	English Language IV							
	CIER 410	Elective I	*	*	*	*			
	CIER 411	Foundation Engineering I	*	*			*		*
	CIER 412	Transportation Engineering I	*	*	*				
	CIER 413	Steel Design I	*	*				*	
	CIER 415	Computer Application in Civil Engineering		*		*		*	*
	CIER 414	Reinforced Concrete Design III	*	*	*	*	*		
	CIER 417	Quantity Surveying							
2nd Sem. 4th Year	CREQ 420	Project							
	CIER 420	Elective II	*	*	*				
	CIER 421	Foundation Engineering II	*	*			*		*
	CIER 422	Transportation Engineering II	*	*	*				
	CIER 423	Steel Design II	*	*				*	
	ETHC 420	Professional Ethics							
	CIER 424	Reinforced Concrete Design IV	*	*	*	*	*		
	CIER 426	Numerical Analysis	*				*	*	*

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقم المحضر:13
تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (Program Education Objectives) لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول 3.1 المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد CLOs مع محصلات التعلم GOs كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي SAR للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشأن (او المصلحة) بالبرنامج التعليمي (Program Constituencies) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

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جامعة النهرين كلية الهندسة قسم الهندسة المدنية		محضر اللجنة العلمية رقـــم المحضر:**13** تأريخ المحضر: **2024/05/23**

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين **GOs** الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs** كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs**

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية **PEOs** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية **PEOs**

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)**

وبهذا اختتم المحضر

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جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

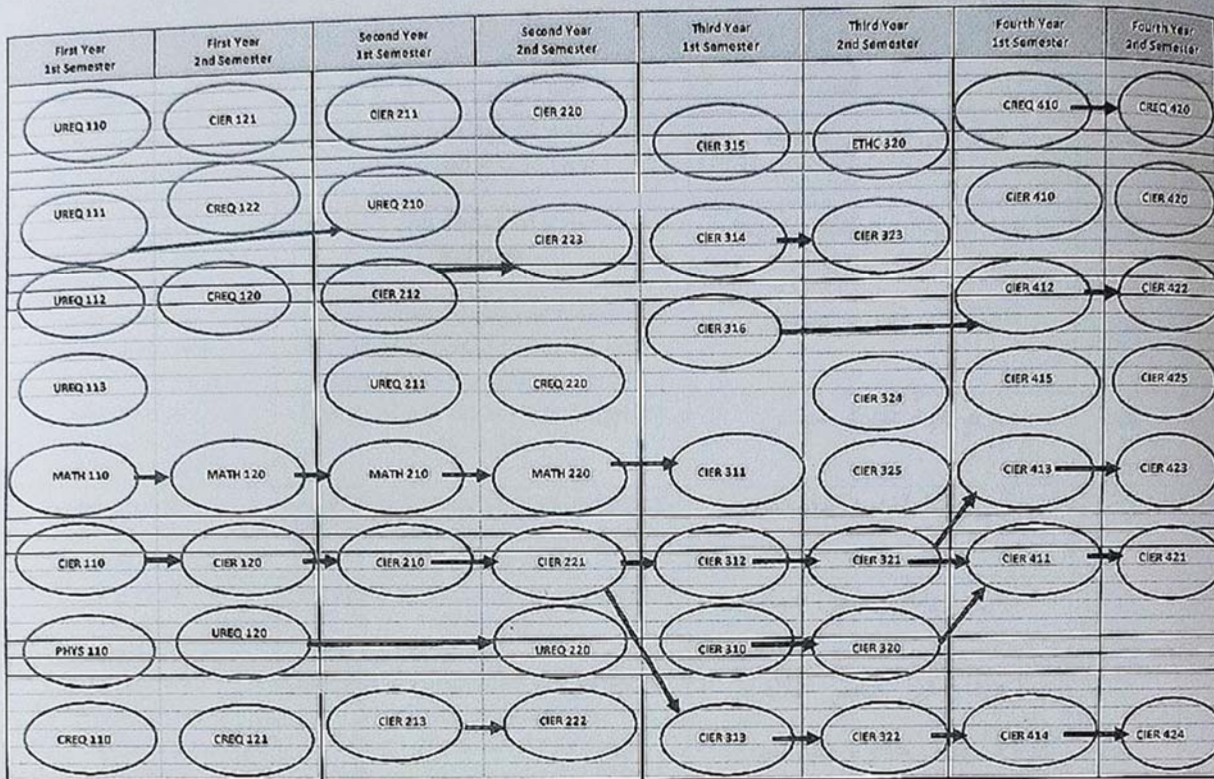
محضر اللجنة العلمية
رقــم المحضر:**13**
تأريخ المحضر: **2024/05/23**

أ.م.د. ضياء مصطفى نيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/05/23	2024/05/23	2024/05/23	2024/05/23	2024/05/23

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضوا	رئيس اللجنة العلمية
2024/05/23	2024/05/23	2024/05/23	2024/05/23

المرفق رقم (5)

البنية العمودية و الافقية للمنهاج الدراسي و المخطط الانسابي للمنهاج الدراسي (Prerequisite) و كما مبينة ادناه:



هل يستوفي المنهاج المكونات الاساسية المطلوبة / الادلة المطلوبة / جدول رقم3.1 فقرة (3-1-5)

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية	محضر اللجنة العلمية رقم المحضر:13 تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (**Program Education Objectives**) لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول **3.1** المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد **CLOs** مع محصلات التعلم **GOs** كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي **SAR** للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشأن (او المصلحة) بالبرنامج التعليمي (**Program Constituencies**) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية		محضر اللجنة العلمية رقـــم المحضر:13 تأريخ المحضر: 2024/05/23

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين GOs الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية PEOs وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية PEOs

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس (Prerequisite)

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـــم المحضر: **13**
تأريخ المحضر: **2024/05/23**

أ.م.د. ضياء مصطفى نيبان	**أ.م.د. حسن موسى جواد**	**أ.م.د. هيثم علاء حسين**	**أ.د. حاتم عبد الكريم رشيد**	**أ.د. مصعب عايد كصب**
عضوا ومقررا	**عضوا**	**عضوا**	**عضوا**	**عضوا**
2024/05/23	**2024/05/23**	**2024/05/23**	**2024/05/23**	**2024/05/23**

أ.د. علاء حسين عبد حافظ	**أ.د. أحمد سلطان علي**	**أ.د. جبار حمود عبد النبي البيضاني**	**أ.د. عبد العزيز عبد الرسول عزيز**
عضوا	**عضوا**	**عضوا**	**رئيس اللجنة العلمية**
2024/05/23	**2024/05/23**	**2024/05/23**	**2024/05/23**

المرفق رقم (3)

مناقشة الجدول 3.1 خطة الدراسة للطلاب في البرنامج التعليمي لقسم الهندسة المدنية بما في ذلك معلومات عن عروض الدورات في شكل جدول موصى به حسب السنة والفصل الدراسي إلى جانب الحد الأقصى لعدد التسجيلات في القسم لجميع المقررات في البرنامج لآخر فصلين دراسيين تم تدريس الدورة فيهما .يظهر أدناه مثال على منهج الدورة التدريبية

Table 3.1: Curriculum Civil Engineering Program

List all courses in the program by term starting with the first term of the first year and ending with the last term of the final year.			Indicate Whether Course is Required, Elective or a Selected Elective by an R, an E or an SE.1	Subject Area (Credit Hours)				Last Two Terms the Course was Offered: Year and Semester	Maximum Section Enrollment for the Last Two Terms the Course was Offered2
Course									
Dept.	Code	Title		Math & Basic Sciences	Engineering Topics. Check if Contains Significant Design (√)	General Education	Other		
1st Sem. 1st Year	UREQ 110	Workshop Technology	R			3		S 23	141
	UREQ 111	Computer Fundamentals and Programming I	R	2		2		S 23	141
	MATH 110	Mathematics	R	4				S 23	141
	CREQ 110	Engineering Drawing	R		2	3		S 23	141
	UREQ 112	Human Rights and Democracy	R				2	S 23	141
	PHYS 110	Physics	R		2	2		S 23	141
	CIER 110	Engineering Mechanics I	R		3	1		S 23	141
	UREQ 113	Arabic Language	R				2	S 23	141
2nd Sem. 1st Year	CREQ 120	Chemistry	R		2	2		S24	141
	MATH 120	Fundamentals of Engineering Mathematics	R	3		1		S24	141
	CREQ 121	Computer-Aided Drawing II	R		2	2		S24	141
	CREQ 122	Geology	R		2	2		S24	141
	CIER 120	Fundamentals of Static and Dynamic	R		3	1		S24	141
	CIER 121	Material Technology	R		2	2		S24	141
	UREQ 120	English Language I	R				2	S24	141
1st Sem. 2nd Year	UREQ 210	Computer Fundamentals and Programming II	R	2		1		S 23	91
	MATH 210	Mathematics III	R	3		1		S 23	91
	CIER 210	Mechanics of Materials I	R		3	2		S 23	91
	CIER 211	Concrete Technology	R		3	2		S 23	91
	CIER 212	Fluid Mechanics I	R		3	2		S 23	91
	UREQ 210	English Language II	R				2	S 23	91
	UREQ 211	Principles of Management	R				1	S 23	91
	UREQ 212	Arabic Language II	R				1	S 23	91
	CIER 213	Geomatics I	R		2	3		S 23	91
2nd Sem. 2nd Year	MATH 220	Mathematics IV	R	3		1		S24	82
	CREQ 220	Engineering Statistics	R	2				S24	74
	CIER 220	Building Construction	R		2	2		S24	79
	CIER 221	Mechanics of Materials II	R		3	1		S24	83
	CIER 222	Geomatics II	R		2	3		S24	80
	CIER 223	Fluid Mechanics II	R		3	2		S24	80
	UREQ 220	Democracy	R				1	S24	75

1st Sem. 3rd Year	CIER 310	Soil Mechanics I	R		3	2		S 23	98
	CIER 311	Engineering Mathematics I	R	3				S 23	98
	CIER 312	Theory of Structures I	R		3	1		S 23	98
	CIER 313	Reinforced Concrete Design I	R		3(√)	1		S 23	98
	CIER 314	Sanitary Engineering I	R		2	2		S 23	98
	CIER 316	Hydrology	R		2	1		S 23	98
	CIER 315	Engineering Management & Economics	R		3			S 23	98
	CIER 316	Traffic Engineering I	R		2	1		S 23	98
2nd Sem. 3rd Year	CIER 320	Soil Mechanics II	R		3	2		S24	84
	CIER 321	Engineering Mathematics II	R	3				S24	83
	CIER 321	Theory of Structures II	R		3	1		S24	83
	CIER 322	Reinforced Concrete Design II	R		3(√)	1		S24	93
	CIER 323	Sanitary Engineering II	R		2	2	1	S24	82
	CIER 326	Construction Methods	R		2	1		S24	80
	CIER 327	Hydraulics	R		2	1		S24	81
	UREQ 320	English Language III	R				2	S24	79
1st Sem. 4th Year	CREQ 410	Project	R			4		S 23	104
	UREQ 410	English Language IV	R				2	S 23	104
	CIER 410	Elective I	E		3			S 23	104
	CIER 411	Foundation Engineering I	R		3			S 23	104
	CIER 412	Transportation Engineering I	R		3	1		S 23	104
	CIER 413	Steel Design I	R		2(√)	2		S 23	104
	CIER 415	Computer Application in Civil Engineering	R		2	1		S 23	104
	CIER 414	Reinforced Concrete Design III	R		3(√)	1		S 23	104
	CIER 417	Quantity Surveying	R		3			S 23	104
2nd Sem. 4th Year	CREQ 420	Project	R			4		S24	97
	CIER 420	Elective II	E		2	1		S24	97
	CIER 421	Foundation Engineering II	R		3			S24	98
	CIER 422	Transportation Engineering II	R		2	2		S24	97
	CIER 423	Steel Design II	R		2(√)	2		S24	98
	ETHC 420	Professional Ethics	R				1	S24	97
	CIER 424	Reinforced Concrete Design IV	R		3(√)	1		S24	100
	CIER 426	Numerical Analysis	R		2	1		S24	97
Add rows as needed to show all courses in the curriculum.									
TOTALS BASIC-LEVEL REQUIREMENTS									
OVERALL TOTAL CREDIT HOURS FOR COMPLETION OF THE PROGRAM									
PERCENT OF TOTAL									
Total must satisfy either credit hours or percentage	Minimum Semester Credit Hours			32 Hours	48 Hours				
	Minimum Percentage of Total Credits Required for Graduation			25%	37.5%				

1. **Required** courses are required of all students in the program, open or free **elective** courses which are optional for students (if any), and **selected elective** courses for which students must take one or more courses from a specified group (if any).
2. For courses that include multiple elements (lecture, laboratory, recitation, etc.), indicate the maximum enrollment in each element. For selected elective courses, indicate the maximum enrollment for each option.

Instructional materials and student work verifying compliance with the Accreditation Criteria for the categories indicated above will be required during the campus visit.

هل يوفر مشروع التخرج فرصة لممارسة التصميم / الادلة المطلوبة / الامر الاداري مع محضر لجنة علمية مثبت فيه اسماء - لمشاريع التخرج للعام الدراسي 2023-2024 المشاريع التي تتناول فرص لممارسة التصاميم

فقرة (3-1-6)

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
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محضر اللجنة العلمية
رقم المحضر:13
تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (Program Education Objectives) لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول 3.1 المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد CLOs مع محصلات التعلم GOs كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي SAR للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشان (او المصلحة) بالبرنامج التعليمي (Program Constituencies) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

1

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رقـــم المحضر:13
تأريخ المحضر: 2024/05/23

التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين **GOs** الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs** كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs**

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية **PEOs** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية **PEOs**

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)**

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

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محضر اللجنة العلمية
رقــم المحضر: **13**
تأريخ المحضر: **2024/05/23**

أ.م.د. ضياء مصطفى نيبان	**أ.م.د. حسن موسى جواد**	**أ.م.د. هيثم علاء حسين**	**أ.د. حاتم عبد الكريم رشيد**	**أ.د. مصعب عايد كصب**
عضوا ومقررا	**عضوا**	**عضوا**	**عضوا**	**عضوا**
2024/05/23	**2024/05/23**	**2024/05/23**	**2024/05/23**	**2024/05/23**

أ.د. علاء حسين عبد حافظ	**أ.د. أحمد سلطان علي**	**أ.د. جبار حمود عبد النبي البيضاني**	**أ.د. عبد العزيز عبد الرسول عزيز**
عضوا	**عضوا**	**عضو**	**رئيس اللجنة العلمية**
2024/05/23	**2024/05/23**	**2024/05/23**	**2024/05/23**

المرفق رقم (6)

المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول التالي

ت	المشرف	عنوان المشروع	اسم الطالب
1	م.زاهر نوري محمد	Analysis and design of water tank using Staad Pro software	محمد مصطفى عمر محمد عبد الحليم جاسم مولود محمد مولود
2	ا.م.د ضياء مصطفى ذيبان	Analysis and design of a High-Rise Building	علي رائد حسين علي علاء فاروق زين العابدين محمود علي
3	م.زاهر نوري محمد	Analysis and design of high-rise buildings exposed to earthquakes using ETABS and SAFE programs	نور خضر عباس علي عباس محسن احمد محمد خلف
4	م.م هبة عماد عباس	Design of R.C. Slabs Using Different Methods	علي كامل هاشم رسل اكرم صادق علي اكرم كاظم
5	ا.م.د سلطان احمد داود	Analysis and Design of Industrial Portal Frame Steel Building using Computer Aids	عبدالله فراس مهدي عبدالله علي نعيم عبد المجيد قاسم شيحان
6	ا.م.د زينة رياض صالح	Analysis and design of multi-story building	سراج اوسام حميد سرمد محمد جاسم
7	ا.م.د زهير خضر علاوي	Design R.C Building subjected to wind and seismic load	محمد حيدر حواس سيف عبدالكريم جاسم
8	ا.د جبار حمود عبدالنبي	Design of a Separate Sewage Network for a residential Area	نوران محمد غني امنه عادل اسماء فاضل

هل تطبق اساليب حديثة للتعليم و التعلم وتقييم الطلبة / الادلة المطلوبة / تم ارفاق نموذج عن اساليب التعليم و التعلم و التقييم للطلبة في حقائب المقررات التعليمية
فقرة (3-1-7)

هل توجد حقائب تعليمية نظامية لكافة المراحل / الادلة المطلوبة / تم ارفاق نموذج عن الحقائب التعليمية
فقرة (3-2-1)

هل تتوافق نواتج تعليم المواد مع محصلات التعلم / الادلة المطلوبة / تم ارفاق نموذج عن الحقائب التعليمية فيه مصفوفة التوافق
فقرة (3-2-2)

المعيار الرابع : التحسين المستمر

3 -1 -4
6 -1 -4

استبانة رأي الطالب بالتدريسي

عزيزي الطالب/ عزيزتي الطالبة(يرجى الاجابة عن الفقرات الاتية بدقة وموضوعية ولا دعي لذكر الاسم)

جامعة...................... الكلية/ المعهد.......................... القسم.............................

اســـــــم التدريســـــــــي.. اســـــــم المـــــــــادة الدراســـــــية..............................
العام الدراسي ٢٠٢١-٢٠٢٢

المستوى الدراسي اول....... ثاني........ ثالث.......... رابع.......... خامس............ سادس

النوع ذكر......... انثى.........

هل تمتلك حاسبة شخصية نعم .... لا............

هل لديك خط انترنيت منزلي نعم............ لا............

ت	الفقرات	جيد جدا	جيد	متوسط	مقبول	ضعيف
١	يمهد للدرس ويراعي التسلسل في عرض المادة بطريقة منطقية ومشوقة					
٢	ينوع اساليب وطرائق التدريس المختلفةداخل المحاضرة					
٣	يحسن اساليب التعامل مع الطلبة ويراعي الفروق الفردية					
٤	يشجعوينمي التعلم الذاتي عند الطلبة					
٥	يستثمرالوقت داخل المحاضرة في اثراء المادة العلمية					
٦	يستخدم وسائل تقليدية والكترونية متنوعة في الاختبارات والتقييم					
٧	يوفير انشطة تعاونية او تنافسية متنوعة لاثارة دافعية الطلبة					
٨	يتابع مستوى الطلبة بصورة مستمرة لغرض تعزيزمواطن القوه ومعالجة مواطن الضعف لديهم					
٩	يناقش اجابات الطلبة ويرد على استفساراتهم بمرونة لخلق بيئة تعليمية امنة					
١٠	ينمي الاتجاهات والعادات والاخلاق الحميدة لدى الطلبة					

ملاحظات وتعليمات مهمة:

١- مراجعة الدليل في احتساب الدرجات حسب النسب الاتية:

جيد جدا: تمثل(نسبة ٨٠٪ فاكثر)

جيد :تمثل (٧٠-٧٩٪)

متوسط :تمثل (نسبة ٦٠-٦٩٪)

مقبول: تمثل(٥٠-٥٩٪)

ضعيف: تمثل مادون ذلك

٢- يتم تطبيق الاستبانة على الطلبة وفق الاتي

- الطلبة العشرة الاوائل من كل مرحلة دراسية
- الطلبـــة المواظبـــون علـــى الـــدوام بنســـبة ٩٠٪ فـــاكثر واختيـــارهم بالطريقـــة الطبقيـــة ذات التوزيـــع المتناســـب على ان لاتقل عن ١٠٪
- عدم اعادة التطبيق لاكثر من مرة واحدة
- الابتعاد عن التحيز بانتقاء اجابات الطلبة
- التطبيـــق يكـــون للتدريســـيين كافـــة حســـب جـــدول الـــدروس (طلبـــة الدراســـات الاوليـــة والعليـــا) و(علـــى مـــلاك الكلية والمحاضرين والمنسبين)
- يشـــرف مســـؤول شـــعبة ضـــمان الجـــودة فـــي الكليـــة علـــى عمليـــة تطبيـــق الاســـتبانة علـــى الطلبـــة وجمـــع الاجابـــات مـــن خـــلال عمـــل forms google للاســـتبانة ضـــمن ايميـــل شـــعبة ضـــمان الجـــودة فـــي الكليـــة (حصـــرا) وتقـــوم الشـــعبة بايجـــاد درجـــات التدريســـيين وتـــدقيقها وتوزيعهـــا علـــى الاقســـام ،ويمنـــع منعـــاً باتـــا تطبيق الاستبانة على الطلبة من قبل اعضاء الارتباط في الاقسام العلمية في الكلية.
- الالتزام بالمدة المحددة للتطبيق التي تحددها الجامعة/ قسم ضمان الجودة وتقويم الاداء الجامعي

REPUBLIC OF IRAQ
STRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH
L-NAHRAIN UNIVERSITY
OLLEGE OF ENGINEERING

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

العدد: هـ. ن. م. د. / ٣٦٣
التاريخ: ١٩/ ٦/ ٢٠٢٣

السيد العميد المحترم

م/استبانة طلبة

تحية طيبة...

نرفق لكم استبانة طلبة قسم الهندسة المدنية حول التدريسيين للفصل الدراسي الاول والثاني للعام الدراسي 2023/2022.

مع التقدير

أ.د.مصعب عايد كصب
رئيس قسم الهندسة المدنية
2023/6/١٩

نسخة منه الى
- الملف

العراق - بغداد - ص ب 64040 الجادرية P.O. Box 64040 Jadriya – Baghdad –Iraq
هاتف: 7786417 – 7784696 Phone: 7786417- 7784696

السيد رئيس قسم الهندسة المدنية المحترم

م / استبانة طلبة قسم الهندسة المدنية حول التدريسي للفصل الدراسي الاول والثاني للعام الدراسي

2023-2022

تحية طيبة ...

ارجو التفضل بالعلم انه تم اجراء استبانة طلبة قسم الهندسة المدنية حول التدريسي للفصل الدراسي الاول والثاني للعام الدراسي 2022-2023 وكان الاستبيان الكترونيا تم عمل نسخ من الفورم للمراحل جميعها (البكلوريوس و الدراسات العليا المرحلة التحضيرية) ومرفق طيا جداول نتائج الاستبانة

للتفضل بالاطلاع .... مع التقدير

أ.م.د. عبدالخالق جبار

رئيس لجنة الجودة / قسم الهندسة المدنية

2023/6/19

المرفقات

- جدول نتائج استبانة طلبة قسم الهندسة المدنية حول التدريسي للفصل الدراسي الاول للعام الدراسي 2022-2023 عدد (2)
- جدول نتائج استبانة طلبة قسم الهندسة المدنية حول التدريسي للفصل الدراسي الاول للعام الدراسي 2022-2023 عدد (2)

السيدة المقرر

يعرض على مجلس الكلية رجاءً

١٩/٧/٢٠٢٣

رئيس القسم

استبانة طلبة قسم الهندسة المدنية حول التدريسي للفصل الدراسي الاول و الثاني للعام الدراسي 2022-2023

ت	أسماء التدريسيين	التقييم النهائي استبانة الطلبة الفصل الاول	التقييم النهائي استبانة الطلبة الفصل الثاني	التقييم النهائي استبانة الطلبة المعدل
1	أ.د.عبدالعزيز عبدالرسول عزيز	82	91	87
2	أ.د. جبار حمود عبدالنبي	95	99	97
3	أ.د.عادل عبد الأمير محمد سعيد	83	100	92
4	أ.د. قاسيون سعدالدين محمد شفيق	93	87	90
5	أ.د. محمود صالح مهدي	77	93	85
6	أ.د. احمد سلطان علي	93	97	95
7	أ.د.محمد عبدالخالق ابراهيم	79	71	75
8	أ.د. حاتم عبدالكريم رشيد	72	78	75
9	أ.د.مصعب عايد كصب	76	86	81
10	أ.د. ابراهيم سليم ابراهيم	89	74	82
11	أ.د. حسام كاظم رسن	89	85	87
12	أ. عباس جواد عبد الحسين	80	69	75
13	أ.م .د أسماء ثامر أبراهيم	76	89	83
14	أ.م.د.ليث خالد كامل حسن	84	87	86
15	أ.م. د.احمد فالح احمد فاضل	74	59	67
16	أ.م.د. عبد الخالق جبار عبد الرضا	79	84	82
17	أ.م.د.هيثم علاء حسين	74	80	77
18	أ.م.د. حسن موسى جواد	86	95	91
19	أ.م.د. رائد احمد داود	76	82	79
20	أ.م.د. زينة رياض صالح	90	83	87
21	أ.م.د. ضياء مصطفى نيبان	85	86	86
22	أ.م.د. محمد علي اكرم شعبان	86	79	83
23	أ.م. داليا شاكر عطوان	77	70	74
24	أ.م. خالدة احمد داود	70	75	73
25	م.د. ياسر محمود كاظم	-	64	64
26	م. د. امنة طلال عبد الحميد	77	مجازة مرضيا	77
27	م. د. زينب محمد اسماعيل	مجازة مرضيا		
28	م.د. احمد هادي عبد الرحيم	67	70	69
29	م.د. احمد عبد الحافظ مصطفى	95	99	97
30	م.د. احمد فرحان مويز	88	87	88
31	م.د. الاء وليد حميد	71	68	70
32	م. ازهر صادق ياسين	78	74	76
33	م.زاهر نوري محمد تقي	92	95	94
34	م. زينة عادل نجيب عبادي	اجازة خمس سنوات		
35	م.الاء احمد شاكر	اجازة خمس سنوات		
36	م. دعاء عبدالرزاق فالح	88	85	87
37	م. نورة سعد فرج	اجازة امومة	-	-
38	م.م. حوراء سعيد جواد	87	67	77
39	م.م. هبة عماد عباس	مجازة مرضيا	-	-
40	م.م. ربى حنا مجيد	88	88	88
41	م.م. مناهل زينو	60	67	64
42	م.م. قتيبة عبدالهادي	-	73	73

استبانة طلبة قسم الهندسة المدنية حول التدريسي للفصل الدراسي الاول و الثاني للعام الدراسي 2022-2023

ت	أسماء التدريسيين خارج القسم	التقييم النهائي استبانة الطلبة الفصل الاول	التقييم النهائي استبانة الطلبة الفصل الثاني	التقييم النهائي استبانة الطلبة المعدل
1	أ.د. فائق محمد سرحان	74	98	86
2	أ.د. علاء حسين عبد	97	94	96
3	أ.م. د. مصطفى كمال محمود	97	91	94
4	أ.م.د. سلطان احمد داوود	45	56	51
5	م.د. انتظار	70	-	70
6	م.د. مصطفى حميد فرحان	80	83	82
7	م.د. زهير خضير علاوي	88	87	88
8	م.د. محمد عاصي	87	85	86
9	م.د. ايمان عباس	77	69	73
10	م.د. عباس (انكليزي)	44	-	44
11	م.د. باسم (حقوق)	89	76	83
12	م. رنا اسماعيل خليل	87	82	85
13	م. اسراء (كيمياء)	-	69	69
14	م.م. بكر (انكليزي)	62	48	55
15	م.م. علي كاظم	85	78	82
16	م.م. سوزان	71	67	69
17	م.م. محمد هاشم	84	88	86
18	م.م. ايناس (مبادئ ادارة)	69	-	69
19	م.م. شيلان	87	84	86
20	م.م. زيد عبدالهادي	70	68	69
21	م.م. احسان	67	-	67
22	م.م عبد السلام	-	77	77

استبانة طلبة قسم الهندسة المدنية حول التدريسي للفصل الدراسي الاول للعام الدراسي 2022-2023

ت	أسماء التدريسيين	المرحلة الاولى	المرحلة الثانية	المرحلة الثالثة	المرحلة الرابعة	ماجستير	دكتوراه	التقييم النهائي استبانة الطلبة
1	أ.د.عبدالعزيز عبدالرسول عزيز					80	84	82
2	ا.د. جبار حمود عبدالنبي				92		98	95
3	أ.د.عادل عبد الأمير محمد سعيد					83		83
4	ا.د. قاسيون سعدالدين محمد شفيق			93		87	98	93
5	ا.د. محمود صالح مهدي		77					77
6	أ.د. احمد سلطان علي						93	93
7	ا.د.محمد عبدالخالق ابراهيم			83 72 81				79
8	ا.د. حاتم عبدالكريم رشيد			67 76				72
9	ا.د.مصعب عايد كصب				76			76
10	أ.د. ابراهيم سليم ابراهيم		89					89
11	أ.د. حسام كاظم رسن			89				89
12	أ. عباس جواد عبد الحسين	80						80
13	أ.م. د أسماء ثامر أبراهيم				86 78 74	66		76
14	أ.م.د.ليث خالد كامل حسن				84			84
15	ا.م. د.احمد فالح احمد فاضل			74				74
16	ا.م.د. عبد الخالق جبار عبد الرضا	85				73		79
17	ا.م.د.هيثم علاء حسين			73 75 74				74
18	أ.م.د. حسن موسى جواد				80 92 85			86
19	أ.م.د. رائد احمد داود		81	70				76
20	أ.م.د. زينة رياض صالح			92	87			90
21	أ.م.د. ضياء مصطفى ذيبان			84	85			85
22	أ.م. داليا شاكر عطوان		77 77					77
23	أ.م. خالدة أحمد داود			75 64				70
24	م.د. محمد علي اكرم شعبان		89		83			86
25	م. د. امنة طلال عبد الحميد			76 73	88 72			77
26	م. د. زينب محمد اسماعيل	مجازة مرضيا						
27	م.د. احمد هادي عبد الرحيم	52 63			89 64 68			67
28	م.د. احمد عبد الحافظ مصطفى		94		94 96			95
29	م.د. احمد فرحان مويز			91	89 85	88		88
30	م.د. الاء وليد حميد	85 51	55 87		79			71
31	م. ازهر صادق ياسين			76 68 89				78
32	م.زاهر نوري محمد تقي			93 90	94			92
33	م. زينة عادل نجيب عيادي	اجازة خمس سنوات						
34	م.الاء احمد شاكر	اجازة خمس سنوات						
35	م. دعاء عبدالرزاق فالح				85 90			88
36	م. نورة سعد فرج	اجازة امومة						
37	م.م. حوراء سعيد جواد	89	85					87
38	م.م. هبة عماد عباس	مجازة مرضيا						
39	م.م. ربى حنا مجيد		90 92		84 87 89			88
40	م.م. مناهل زينو	55 64 68 53						60

استبانة طلبة قسم الهندسة المدنية حول التدريسي للفصل الدراسي الاول للعام الدراسي 2022-2023

ت	أسماء التدريسين خارج القسم	المرحلة الاولى	المرحلة الثانية	المرحلة الثالثة	المرحلة الرابعة	ماجستير	دكتوراه	التقييم النهائي استبانة الطلبة
1	أ.د. فائق محمد سرحان				69 70 83			**74**
2	أ.د. علاء حسين عبد					100	93	**97**
3	أ.م. د. مصطفى كمال محمود						97	**97**
4	أ.م.د. سلطان احمد داوود			45				**45**
5	م.د. انتظار				70			**70**
6	م.د. مصطفى حميد فرحان	71	89					**80**
7	م.د. زهير خضير علاوي	91 89		85				**88**
8	م.د. محمد عاصي	86		87				**87**
9	م.د. ايمان عباس	80 79 72						**77**
10	م.د. عباس (انكليزي)				43 45			**44**
11	م.د. باسم (حقوق)		94 83					**89**
12	م. رنا اسماعيل خليل			87				**87**
13	م.م. بكر (انكليزي)				62			**62**
14	م.م. علي كاظم	73 77 90	97 89					**85**
15	م.م. سوزان		90 71	72 59 63				**71**
16	م.م. محمد هاشم		95 72					**84**
17	م.م. ايناس (مبادئ ادارة)		64 73					**69**
18	م.م. شيلان		94 80					**87**
19	م.م. زيد عبدالهادي			70				**70**
20	م.م. احسان	71 67 64						**67**

استبانة طلبة قسم الهندسة المدنية حول التدريسي للفصل الدراسي الثاني للعام الدراسي 2022-2023

ت	أسماء التدريسيين	المرحلة الاولى	المرحلة الثانية	المرحلة الثالثة	المرحلة الرابعة	ماجستير	دكتوراه	التقييم النهائي استبانة الطلبة
1	أ.د.عبدالعزيز عبدالرسول عزيز					91.5	89.5	**91**
2	ا.د. جبار حمود عبدالنبي					99		**99**
3	أ.د.عادل عبد الأمير محمد سعيد						100	**100**
4	ا.د. قاسيون سعدالدين محمد شفيق			75		98.7		**87**
5	ا.د. محمود صالح مهدي		93					**93**
6	أ.د. احمد سلطان علي					96.7		**97**
7	ا.د.محمد عبدالخالق ابراهيم			71				**71**
8	ا.د. حاتم عبدالكريم رشيد			72	73	90.3		**78**
9	ا.د.مصعب عايد كصب				81	91.2		**86**
10	أ.د. ابراهيم سليم ابراهيم		74					**74**
11	أ.د. حسام كاظم رسن			85				**85**
12	أ. عباس جواد عبد الحسين	69						**69**
13	أ.م .د أسماء ثامر أبراهيم				81		96.5	**89**
14	أ.م.د.ليث خالد كامل حسن				80		93.6	**87**
15	ا.م. د.احمد فالح احمد فاضل			59				**59**
16	ا.م.د. عبد الخالق جبار عبد الرضا	84						**84**
17	ا.م.د.هيثم علاء حسين			73		**86.4**		**80**
18	أ.م.د. حسن موسى جواد				90	**99.6**		**95**
19	أ.م.د. رائد احمد داود		90	74				**82**
20	أ.م.د. زينة رياض صالح				83			**83**
21	أ.م.د. ضياء مصطفى ذيبان			83	89			**86**
22	أ.م.د. محمد علي اكرم شعبان		78		79			**79**
23	أ.م. داليا شاكر عطوان		70					**70**
24	أ.م. خالدة احمد داود			75				**75**
25	م.د. ياسر محمود	64						**64**
26	م. د. امنة طلال عبد الحميد				مجازة مرضيا			
27	م. د. زينب محمد اسماعيل				مجازة مرضيا			
28	م.د. احمد هادي عبد الرحيم				70			**70**
29	م.د. احمد عبد الحافظ مصطفى		99		98			**99**
30	م.د. احمد فرحان مويز				76	**97**		**87**
31	م.د. الاء وليد حميد		68					**68**
32	م. ازهر صادق ياسين			74				**74**
33	م.زاهر نوري محمد تقي			92	98			**95**
34	م. زينة عادل نجيب عبادي				اجازة خمس سنوات			
35	م.الاء احمد شاكر				اجازة خمس سنوات			
36	م. دعاء عبدالرزاق فالح				**85**			**85**
37	م. نورة سعد فرج				اجازة امومة			
38	م.م. حوراء سعيد جواد	67						**67**
39	م.م. هبة عماد عباس				مجازة مرضيا			
40	م.م. ربى حنا مجيد		90		86			**88**
41	م.م. مناهل زينو	67						**67**
42	م.م. قتيبة عبدالهادي		63	66	90			**73**

استبانة طلبة قسم الهندسة المدنية حول التدريسي للفصل الدراسي الثاني للعام الدراسي 2022-2023

ت	أسماء التدريسيين خارج القسم	المرحلة الاولى	المرحلة الثانية	المرحلة الثالثة	المرحلة الرابعة	ماجستير	دكتوراه	التقييم النهائي استبانة الطلبة
1	أ.د. فائق محمد سرحان						97.5	98
2	أ.د. علاء حسين عبد						94.1	94
3	أ.م. د. مصطفى كمال محمود					85.3	96.1	91
4	أ.م.د. سلطان احمد داوود			56				56
5	م.د. مصطفى حميد فرحان		90		76			83
6	م.د. زهير خضير علاوي	89		84				87
7	م.د. محمد عاصي	79	91					85
8	م.د. ايمان عباس	69						69
9	م.د. باسم (حقوق)	76						76
10	م. رنا اسماعيل خليل			82				82
11	م. اسراء (كيمياء)	69						69
12	م.م. بكر (انكليزي)			48				48
13	م.م. علي كاظم	78						78
14	م.م. سوزان			67				67
15	م.م. محمد هاشم		88					88
16	م.م. شيلان	92		76				84
17	م.م. زيد عبدالهادي		83	53				68
18	م.م عبد السلام		77					77

بسم الله الرحمن الرحيم

جامعة النهرين
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تأريخ المحضر: 2024/05/23

محضر الاجتماع الثالث عشر للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ.ن/1304/2/1 في 2023/10/04، اجتماعها الثالث عشر في يوم الخميس الموافق 2024/05/23 برئاسة أ.د. عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: اهداف قسم الهندسة المدنية

ناقشت اللجنة العلمية مدى توافق رؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وكما في المرفق رقم (1)، وأوصت اللجنة بما يلي:

التوصية: بعد الاطلاع وعمل mapping لرؤية ورسالة واهداف قسم الهندسة المدنية مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين الموضحة في المرفق رقم (1) وجدت اللجنة ان رؤية ورسالة واهداف قسم الهندسة المدنية تتوافق بشكل كامل وتام مع رؤية ورسالة واهداف كل من كلية الهندسة وجامعة النهرين وتتكامل بينها لتحقيق مخرجات البرنامج التعليمي لقسم الهندسة المدنية.

ثانيا: اهداف التعليم البرامجي لقسم الهندسة المدنية

ناقشت اللجنة العلمية اهداف التعليم البرامجي (**Program Education Objectives**) لقسم الهندسة المدنية للعام الدراسي 2024/2023 وبيان مطابقة تلك الاهداف مع رسالة القسم كما في المرفق رقم (2)، وأوصت اللجنة بما يلي:

التوصية: اوصت اللجنة بمراجعة أهداف البرنامج التعليمية (PEOs Review Process) كل سنتين.

ثالثا: الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2023-2024

ناقشت اللجنة العلمية الخطة الدراسية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في جدول **3.1** المرفق رقم (3)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على الخطة الدراسية.

رابعا: الخطة الاستراتيجية لقسم الهندسة المدنية

ناقشت اللجنة العلمية الخطة الاستراتيجية لقسم الهندسة المدنية للعام الدراسي 2024/2023 كما في المرفق رقم (4)، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الخطة ورفعها الى عمادة الكلية/وحدة التخطيط والمتابعة.

خامسا: المشاريع التي لها دلالات تصميمية

ناقشت اللجنة العلمية المشاريع التي لها دلالات تصميمية في الهندسة المدنية و المدرجة في الجدول المرفق (مرفق 6) وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على المشاريع التي لها دلالات تصميمية في الهندسة المدنية

سادسا: محصلة التوافق بين نواتج تعلم المواد لقسم الهندسة المدنية

ناقشت اللجنة العلمية محصلة التوافق بين نواتج تعلم المواد **CLOs** مع محصلات التعلم **GOs** كما في المرفق رقم (7)، وأوصت اللجنة بما يلي:

التوصية: المصادقة على التوافق بين نواتج تعلم CLOs المواد مع محصلات التعلم GOs.

سابعا: الحمل الدراسي ضمن تقرير التقييم الذاتي SAR لقسم الهندسة المدنية

ناقشت اللجنة العلمية الحمل الدراسي في المعيار الثالث الخاص بالمنهاج الدراسي ضمن تقرير التقييم الذاتي **SAR** للفصلين الدراسيين الاول و الثاني لقسم الهندسة المدنية للعام الدراسي 2024/2023 (يوضع ايضا في المعيار الثالث لتقرير الجاهزية) ، وبصدده اوصت اللجنة بمايلي:

التوصية: المصادقة على الحمل الدراسي.

ثامنا: الاعتماد البرامجي وأصحاب الشأن التعليمي (Program Constituencies)

ناقشت اللجنة العلمية موضوع الاعتماد البرامجي وتحديد من هم المعنيين اصحاب الشان (او المصلحة) بالبرنامج التعليمي (**Program Constituencies**) الذين يتلقى منهم قسم الهندسة المدنية التغذية الراجعة ، وأوصت اللجنة بما يلي:

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التوصية: تم تحديد اصحاب الشأن المشاركين والمعنيين بالبرنامج (Program Constituencies) والذين يتم تلقي التغذية الراجعة منهم وبيان مدى تلبية اهداف البرنامج التعليمية لاحتياجاتهم وهم: ارباب العمل (الاعضاء الخارجيين في لجنة الخبراء) , الخريجين والطلبة , هيئة التدريس و النظراء والادارة الجامعية

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

تاسعا: محصلات الخريجين

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع المحصلات المحددة في معايير الاعتماد البرامجي الهندسي واوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية باعتماد محصلات الخريجين **GOs** الخاصة بقسم الهندسة المدنية لتوافقها مع متطلبات الاعتماد البرامجي الهندسي.

عاشرا: التوافق بين محصلات الخريجين GOs مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs** كما مبين في المرفق رقم (8) وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين محصلات الخريجين **GOs** مع الاهداف التعليمية **PEOs**

حادي عشر: التوافق بين المنهاج الدراسي مع الاهداف التعليمية PEOs

ناقشت اللجنة العلمية التوافق بين المنهاج الدراسي لقسم الهندسة المدنية مع الاهداف التعليمية **PEOs** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على التوافق بين المنهاج الدراسي والاهداف التعليمية **PEOs**

ثاني عشر: البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية

ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)** وبصدده اوصت اللجنة بما يلي:

التوصية

توصي اللجنة العلمية بالمصادقة على ناقشت اللجنة العلمية البنية العمودية والافقية للمنهاج الدراسي لقسم الهندسة المدنية واطلعت على المخطط الانسيابي للمنهاج وتحديد المتطلبات المسبقة للدروس **(Prerequisite)**

وبهذا اختتم المحضر

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أ.م.د. ضياء مصطفى نيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2024/05/23	2024/05/23	2024/05/23	2024/05/23	2024/05/23

أ.د. علاء حسين عبد حافظ	أ.د. أحمد سلطان علي	أ.د. جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضو	رئيس اللجنة العلمية
2024/05/23	2024/05/23	2024/05/23	2024/05/23

السيد رئيس قسم الهندسة المدنية المحترم

م/محضر اجتماع لجنة الخبراء

تحية طيبة

اجتمعت لجنة الخبراء في قسم الهندسة المدنية والمشكلة بموجب الاداري ذي العدد د.ن./1 /1 / 4261 في 2023/9/18 والصادر من عمادة كلية الهندسة/جامعة النهرين اجتماعا الكترونيا وذلك في يوم السبت الموافق 2024/3/9 وأقرت معايير استبانة المراجعة الذاتية للجاهزية لنظام ادارة الجودة والاعتماد الاكاديمي في قسم الهندسة المدنية وحسب محضر الاجتماع المرفق.

للتفضل بالاطلاع والتنسيب مع التقدير

أ.د.جبار حمود البيضاني

رئيس لجنة الخبراء

2024/3/10

المرفقات:

محضر اجتماع

اللجنة العلمية

لاتخاذ ما يلزم رجاءً

٣/١١ ٢٠٢٤

رئيس القسم

المعيار الأول: أهداف البرنامج التعليمية

اجتمعت لجنة الخبراء بتاريخ 2024/3/9 واقرت رسالة ورؤية قسم الهندسة المدنية وكما مبين ادناه:

Vision

The Department of Civil Engineering endeavors to be one of the leading Civil Engineering Programs in Iraq and the region. The global economy and rapid changes in technology requires an increasing number of civil engineers. Today's civil engineers are confronted with broader job responsibilities, often involving modern technological aspects that must be integrated with the traditional disciplines. The high demand by professional firms in the Construction Industry for civil engineers impose the need for civil engineering programs in which qualifications are valuable for career advancement. The competitive nature of the Construction Industry in the region requires civil engineers that acquire good knowledge and skills in dealing with new technologies. Identifying, evaluating, implementing and managing the most appropriate resources, technologies and systems demands a well-developed level of technical and managerial skills and team-work capabilities. The civil engineering program enhance the technical and managerial knowledge and skills of its graduates to meet today's demands and needs as well as those of the future. The program emphasizes academic and research excellence along with professional development of students in particular areas of interest in civil engineering. The program offers a wide selection of courses and research activities related to civil engineering which satisfies the local as well as the global needs of the Construction Industry. The Main Features of the Program: its quality is comparable with similar international programs while introducing flexibility to meet local needs without affecting its quality. The program is well positioned to address the areas of recent research in the area.

Mission

The Department of Civil Engineering, aspires to be a center of excellence in educating professionals in civil engineering in Iraq. The philosophy of the department is to promote a model of education that promotes both professional and educational aspects of a discipline that supports academic creativity, cultural development, and operates within an environment that encourages technology transfer. The Department offers a comprehensive program at undergraduate and postgraduate levels that can play a pivotal role in the development of the engineering areas in Iraq, and provide a forum for research into topical areas and contribute to policy debates. The department of civil engineering to be one of the leading civil engineering programs in Iraq and the region. Nurturing and care of outstanding students and encouraging them to use their skills.

اجتمعت لجنة الخبراء بتاريخ 2024/3/9 واقرت الأهداف الاستراتيجية وتوافق الأهداف التعليمية مع رسالة القسم لقسم الهندسة المدنية وكما مبين ادناه:

Statement of PEOs

Base on the mission of Al-Nahrain University and the college of Engineering, the graduate of the B.Sc. program in Civil Engineering will be able to:

1. PEO-1: use science, mathematics, computational thinking, and mechanical engineering ideas, such as design theory, experimental techniques, and production, to solve practical problems associated with design, improvement, manufacture and maintenance of mechanical systems.
2. PEO-2: Practice strong critical thanking, innovation, and problem-solving skills in order to pursue a successful career while demonstrating adherence to the professional codes of conduct and professional accountability.
3. PEO-3: Use effective communication skills and participate in multidisciplinary partnerships to demonstrate professional progress and leadership and demonstrate an appreciation and use of modern technological capabilities and to foster collaborative effort among co-workers and other institutions.
4. PEO-4: Work independently and in multidisciplinary teams to efficiently attain personal and organizational objectives, produce a product or construction that meets a social need, and contribute in teaching persons in the field while maintaining ethical and environmental context of their work.
5. PEO-5: Engage in life-long learning and career growth while maintaining professional standards and pursue further education in the form of graduate and professional studies.
6. PEO-6: Identify opportunities to contribute to the development of society life from a variety of positions, ranging from design and produce modern devices and introducing the cost-effective methods in production.

PEOs Consistency with the Mission Statement

The Civil Engineering Department PEOs are directly related to and in line with the department's goal. The first goal (PEO-1) is the first step toward a rewarding and service-oriented career. To accomplish this goal, the necessary information and abilities are obtained. Students get great education through a variety of means, including knowledge, skills, and values as indicated in PEO-1. PEO-1 also addresses professional and ethical problems. PEOs 2, 3, and 4 guarantee that instructional, administrative, and technical personnel have the attributes necessary for self-development, professional growth, and progress. The Civil Engineering Department's PEOs are also directly related to and congruent with the goals of Al-Nahrain University and the College of Engineering.

Table 1: Work Institutions Opinion Questionnaire about Graduates of CE Program

Score		1	2	3	4	5
No.	Do you agree that the graduate possesses sufficient	Strongly Agree	Agree	I Don't Know	Disagree	I Don't Agree at All
1	Has sufficient knowledge and information related to employment issues					
2	Has sufficient skills related to employment issues					
3	Possesses the skills of social communication with customers					
4	Have written communication skills (writing the required reports are properly)					
5	Possesses the skills of research and analysis in the affairs of the work					
6	Possess critical thinking skills and the ability to solve problems					
7	Possesses the skills of teamwork					
8	Has the skills to work within the team					
9	Possesses the skills of planning and organization for work					
10	Has the ability of high productivity at work					
11	Has the quality of work performance piece					
12	Has the capacity to creativity, innovation and work development					
13	Has the ability to comply with the various conditions of the work					
14	Has the ability to take responsibility					
15	Possesses the skills of social interaction with colleagues					
16	Has the ability to accept guidance and ready for implementation					
17	Has a sense of the importance of work performed by					
18	Has the ability to audit and review the work assigned to him					
19	Has the ability to deal with the problems and difficulties of working with					
20	Has the capacity to follow up on any up-dates in the field of work					

المعيار الثاني: محصلات الخريجين

اجتمعت لجنة الخبراء بتاريخ 2024/3/9 واقرت محصلات الخريجين وعملية المراجعة لها لقسم الهندسة المدنية وكما مبين ادناه:

Program Constituencies

The process of review and evaluation of the CE program is done through the following assessment channels:

1. Alumni survey.
2. Employer's survey.
3. Faculty discussion.
4. Student's survey.
5. Industry consultations.

PEOs Review Process

The primary function of the CE program that is compatible with the missions of the College of Engineering of NU is to instill in its graduates a solid foundation of mathematical, scientific, and engineering knowledge in addition to developing the intellectual skills essential for surpassing in their careers. This was assured with a firm process of tracking PEO through specifying and implementing a major objective listed below:

Objective #1 provide students with; a solid foundation in the civil engineering discipline and design methodologies through emphasis on the application of mathematical, scientific, and engineering principles.

Objective #2 focuses on the improvement, development, and qualification of the teaching and administrative activities of the department.

Objectives #3 concentrate on the development and improvement of the faculty, engineering, technical, and administrative staff capabilities.

Objectives #4 Be effective in civil engineering design and the practical application of civil engineering theory. Exhibit team work and effective communication skills.

Objectives #5 considers the optimum use of the department facilities and resources, and improvement and qualification of these facilities.

Objectives #6 Expand their knowledge and capabilities in continuing education or other life- long learning experiences. Serve their communities, whether locally, nationally, or globally.

The assessment process of CE Program objectives is done continuously and informally whenever possible through many channels, such as employees and Alumni surveys, students' questioners process, faculty members' opinions, experts from industry opinions… etc. Starting from the academic years 2015-2016, the Department of Civil Engineering has made a questionnaire of different Public-Sector Institutions and Private Sector Companies, asking them about their opinions in its graduates. The results are analyzed by the faculty and discussed with the Construction Industry consultants seeking their suggestions to improve the program.

اجتمعت لجنة الخبراء بتاريخ 2024/3/9 واقرت الأهداف التعليمية ومصفوفة التوافق بين محصلات الخريجين والأهداف التعليمية
لقسم الهندسة المدنية وكما مبين ادناه

Adopted Graduate Outcomes

The program must have documented published and publicized graduate outcomes that prepare graduates to attain the program educational objectives few years after graduation. The graduate outcomes stated in this document are set according to the Iraqi Engineering Graduate's Attributes in terms of knowledge, skills, abilities and attitudes. Societal and environmental aspects must also be considered under the title of ethics. Students must be directed towards enhancing the quality of human life and maintaining sustainability principles, cultural heritage and humanitarian and patriotism values. Assessment of the graduate outcomes attained by exit students must be annually carried out upon graduation. Additional graduate outcomes can be articulated by any specific program according to its educational objectives. The seven outcomes of civil engineering program are listed below. They have been organized into a logical grouping of the knowledge and skills that are subset of each Graduate Outcomes (GOs).

Graduate outcomes:

i) An ability to distinguish, identify, define, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics.

ii) An ability to produce engineering designs that meet desired needs within certain constraints by applying both analysis and synthesis in the design process.

iii) An ability to create and carry out proper measurement and tests with quality assurance, analyze and interpret results, and utilize engineering judgment to make inferences.

iv) An ability to skillfully communicate orally with a gathering of people and in writing with various managerial levels.

v) An ability to perceive ethical and professional responsibilities in engineering cases and make brilliant judgments considering the consequences in worldwide financial, ecological, and societal considerations.

vi) An ability to perceive the continual necessity for professional knowledge growth and how to find, assess, assemble, and apply it properly.

vii) An ability to work adequately on teams and to set up objectives, plan activities, meet due dates, and manage risk and uncertainty.

Relating GOs to PEOs

Graduate outcomes prepare graduates to attain the program educational objectives. The relationship illustrating the Graduate outcomes serving each program objective is mapped in Table 2.

Table 2: Mapping Between Graduate Outcomes and Program Educational Objectives

Program Educational Objectives	Graduate Outcomes
- Use science, mathematics, computational thinking, and mechanical engineering ideas, such as design theory, experimental techniques, and production, to solve practical problems associated with design, improvement, manufacture and maintenance of mechanical systems.	i , ii &iii
- Practice strong critical thanking, innovation, and problem-solving skills in order to pursue a successful career while demonstrating adherence to the professional codes of conduct and professional accountability.	i, ii, iii & v
- Use effective communication skills and participate in multidisciplinary partnerships to demonstrate professional progress and leadership and demonstrate an appreciation and use of modern technological capabilities and to foster collaborative effort among co-workers and other institutions	iv & v
- Work independently and in multidisciplinary teams to efficiently attain personal and organizational objectives, produce a product or construction that meets a social need, and contribute in teaching persons in the field while maintaining ethical and environmental context of their work.	iv & vi
- Engage in life-long learning and career growth while maintaining professional standards and pursue further education in the form of graduate and professional studies.	iv, v & vi
- Identify opportunities to contribute to the development of society life from a variety of positions, ranging from design and produce modern devices and introducing the cost-effective methods in production.	v, vi & vii

المعيار الثالث: المنهاج الدراسي

اجتمعت لجنة الخبراء بتاريخ /2024/3 وأقرت المنهاج الدراسي لقسم الهندسة المدنية وكما مبين ادناه:

Program Structure and Content

Study Plan

The curriculum requirements specify subject areas appropriate to engineering but do not prescribe specific subjects. The study plan components must include:

a. A combination of mathematics and basic sciences general education component (some with experimental experience) appropriate to the discipline.
b. Engineering topics, consisting of engineering sciences and engineering design appropriate to the student's field of study.
c. A general education component that complements the technical content of the curriculum and is consistent with the program and institution objectives.

The civil engineering program must develop the knowledge and skills that will enable students to:

- Apply mathematical and scientific concepts for the description and solution of engineering problems.
- Develop the ability to conduct experiments, and critically analyze and interpret data.
- Identify, formulate, and solve civil engineering problems using modern engineering tools, techniques, and skills.
- Perform civil engineering integrated design of systems, components, or processes by means of practical experiences.
- Collaborate in team work.
- Develop written and oral communication skills through presentations of project results.
- Develop initial proficiency in civil engineering disciplines.
- Acquire an appreciation for some of the ethical problems that arise in the exercise of the profession.

Typical degree program is shown in **Table 3** for General Mechanical engineering.

Third Year

First Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	CIER 311	Engineering Mathematics I	3			3
2	CIER 310	Soil Mechanics I	3	2		4
3	CIER 312	Theory of Structures I	3		1	3
4	CIER 313	Reinforced Concrete Design I	3		1	3
5	CIER 314	Sanitary Engineering I	2	2	1	3
6	CIER 315	Engineering Management &Economy	3			3
7	CIER 316	Hydrology	2		1	2
8	CIER 317	Traffic Engineering	2		1	2
Total			21	4	5	23
			30			

Second Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 320	English Language III	2			2
2	CIER 321	Engineering Mathematics II	3			3
3	TRAN#90	Summer Training				-
4	CIER 320	Soil Mechanics II	3	2		4
5	CIER 322	Theory of Structures II	3		1	3
6	CIER 323	Reinforced Concrete Design II	3		1	3
7	CIER 324	Sanitary Engineering II	2	2	1	3
8	CIER 326	Construction Methods	2		1	2
9	CIER 327	Hydraulics	2		1	2
Total			20	4	5	22
			29			

Second Year

First Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 210	English Language II	2			2
2	UREQ 211	Principles of Management	1			1
3	UREQ 212	Arabic Language II	1			1
4	UREQ 213	Computer Fundamentals and Programming II	1	2		2
5	MATH 210	Mathematics III	3		1	3
6	CIER 210	Mechanics of Materials I	3	2		4
7	CIER 211	Concrete Technology	3	2		4
8	CIER 212	Fluid Mechanics I	3	2		4
9	CIER 213	Geomatics I	2	3		3
Total			19	11	1	24
			31			

Second Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 220	Democracy	1			1
2	MATH 220	Mathematics IV	3		1	3
3	CREQ220	Engineering Statistics	2			2
4	CIER 221	Mechanics of Materials II	3		1	3
5	CIER 220	Building Construction	2	2		3
6	CIER 225	Fluid Mechanics II	3	2		4
7	CIER 222	Geomatics II	2	3		3
Total			16	7	2	19
			25			

Table 3: B.Sc. Degree Curriculum / Civil Engineering

AL-NAHRAIN UNIVERSITY

College of Engineering

Department of Civil Engineering

Study Plan for the B.Sc. Degree Course (2022-2023)

First Year

<u>First Semester</u>

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 110	Human Rights	1			1
2	UREQ 111	Computer Fundamentals and Programming I	1	2		2
3	MATH 110	Mathematics I	3		1	3
4	CREQ 110	Engineering Drawings I	1	2		2
5	CREQ 111	Workshop Technology		3		
6	PHYS 110	Physics	2	2		3
7	CIER 110	Engineering Mechanics I	4			4
Total			12	9	1	15
			22			

<u>Second Semester</u>

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 120	Arabic Language I	1			1
2	UREQ 121	English Language I	2			2
3	MATH 120	Mathematics II	3		1	3
4	CREQ 120	Engineering Drawing II	1	2		2
5	CREQ 121	Elective *	2			2
6	CIER 120	Engineering Mechanics II	3		1	3
7	CIER 121	Material Technology	2	2		3
8	CIER 122	Engineering Geology	2	1		2
Total			16	5	2	18
			23			

Fourth Year

First Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	UREQ 410	English Language IV	2			2
2	CREQ 410	Project I		4		2
3	CIER 410	Elective I *	3			3
4	CIER 411	Foundation Engineering I	3			3
5	CIER 412	Transportation Engineering I	1	2	1	2
6	CIER 414	Reinforced Concrete Design III	3		1	3
7	CIER 413	Steel Design I	2		2	3
8	CIER 415	Computer Application in Civil Engineering	2		1	2
9	CIER 417	Quantity Surveying	3			3
		Total	19	6	5	23
			30			

Second Semester

No.	CODE	SUBJECT	Hrs. Per Week			Units
			Th	App	Tut	
1	ETHC 420	Professional Ethics	1			1
2	CREQ 420	Project		4		2
3	CIER 420	Elective II *	2		1	2
4	CIER 421	Foundation Engineering II	3			3
5	CIER 422	Transportation Engineering II	2	2		3
6	CIER 424	Reinforced Concrete Design IV	3		1	3
7	CIER 423	Steel Design II	2		2	3
8	CIER 426	Numerical Analysis	2		1	2
		Total	15	6	5	19
			26			

Approved Electives:

* Chemistry, Biology, Geology, General Science, Dynamic of Structure, Advanced Concrete Technology, Water Resources, Bridge Engineering, Matrix Structural Analysis, Environmental Engineering, Plumbing Engineering, Airport Engineering, Remote Sensing and GIS, Selected Topics

اجتمعت لجنة الخبراء بتاريخ 2024/3/9 واقرت التوافق بين المنهاج الدراسي مع الأهداف التعليمية والتوافق بين المنهاج الدراسي مع محصلات الخريجين لقسم الهندسة المدنية وكما مبين ادناه:

Alignment with PEOs

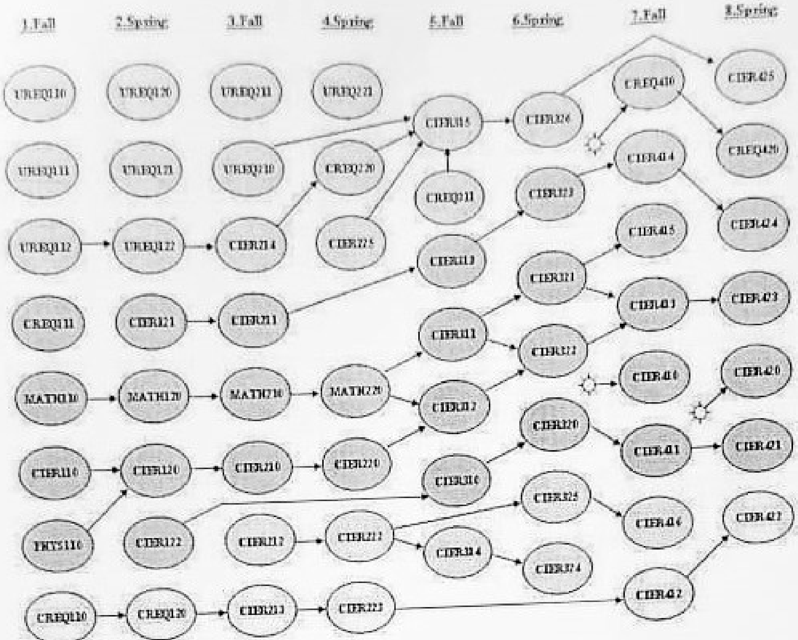
The faculty has complete authority to define, revise, implement, and achieve program educational objectives. Input is required from the students, alumni, and the employers of our alumni in the implementation of program objectives. The major role of the faculty is to create, revise, and evaluate subjects for the program as well as define and revise program educational objectives and ensure achievement of student outcomes. Therefore, the above process ensures alignment of the curriculum with Program Educational Objectives as shown in various tables. The faculty ensures that the students receive all the engineering analysis within the context of engineering program.

Attainment of GOs

The curriculum and its associated prerequisite structure support the attainment of the graduate outcomes through developing of the knowledge and skills that will enable students to:

- Apply basic mathematical and scientific concepts for the description and solution of engineering problems.
- Develop initial proficiency in mechanical engineering disciplines.
- Develop the ability to conduct experiments, and critically analyze and interpret data.
- Perform mechanical engineering integrated design of systems, components, or processes by means of practical experiences (group projects).
- Identify, formulate, and solve mechanical engineering problems using modern engineering tools, techniques and skills.
- Collaborate in group-projects.
- Develop their written and oral communication skills through presentations of project results.
- Acquire an appreciation for some of the ethical problems that arise in the exercise of the profession.

اجتمعت لجنة الخبراء بتاريخ 2024/3/9 واقرت البنية العمودية والأفقية للمنهاج الدراسي لقسم الهندسة المدنية وكما مبين ادناه:



وبهذا ختم المحضر

المهندس الخبير اسماعيل عابد جاسم
دائرة الشؤون الهندسية/ديوان الوقف السني
عضوا
2024/3/9

المهندس مهند شهيد محسن سعود
المدير المفوض لشركة الرافدة المشتركة
عضوا
2024/3/9

أ.د.محمد عبدالخالق ابراهيم
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

أ.د.علاء حسين عبد حافظ
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
2024/3/9

أ.د. عبدالعزيز عبدالرسول عزيز
قسم الهندسة المدنية/كلية الهندسة
/جامعة النهرين
عضوا
9/3/2024

أ.م.د.ليث خالد كامل
قسم الهندسة المدنية/كلية
الهندسة /جامعة النهرين
رئيسا
9/3/2024

أ.د.جبار حمود البيضاني
قسم الهندسة المدنية/كلية الهندسة/جامعة النهرين
رئيسا

9/3/2024

استبيان الطلبة الدراسي 2022-2023 الفصل الاول (قسم الهندسة المدنية)

7 responses

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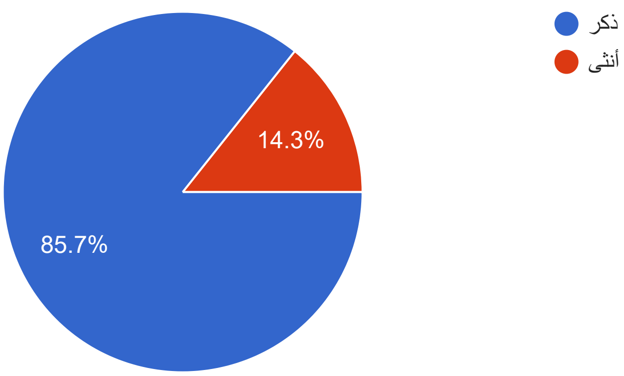

هل تمتلك حاسبة شخصية

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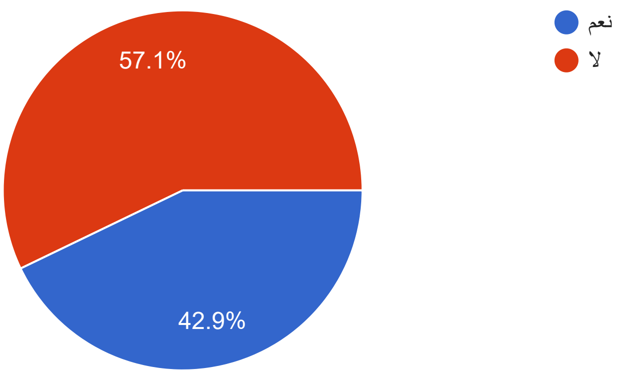

هل لديك خط انترنت منزلي؟

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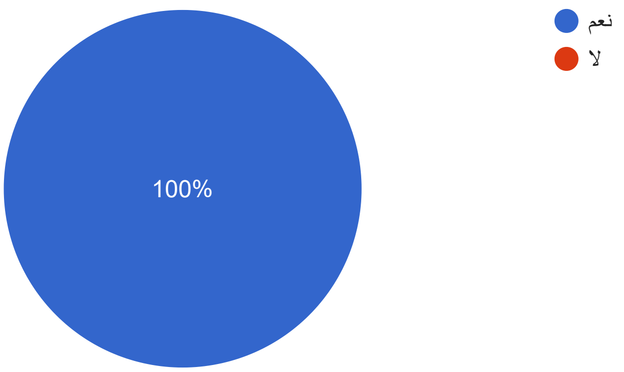

تعليمات الإجابة: الأرقام من 1 - 5 تمثل **التقييم للسؤال** وكما موضح أدناه

الأستبيان حول التدريسي: (د. عبدالخالق جبار)

(1) يمهد للدرس ويراعي التسلسل في عرض المادة بطريقة منطقية ومشوقة.

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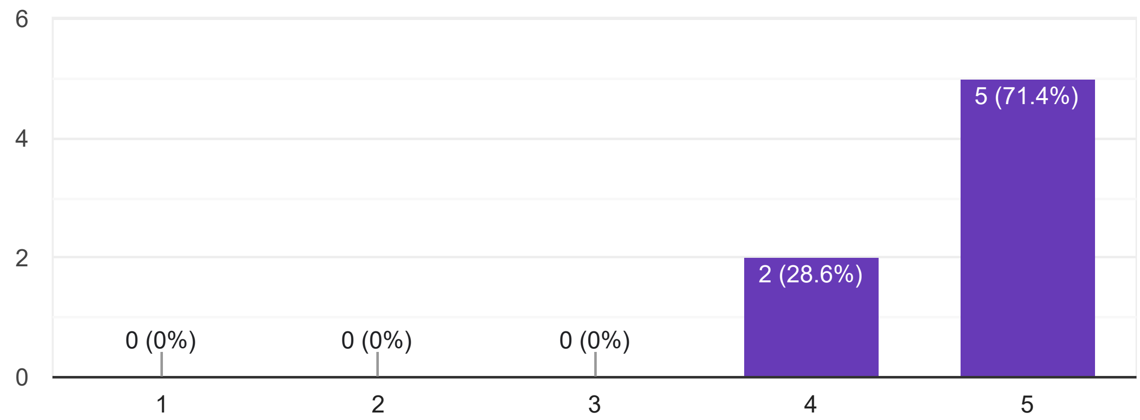

(2) ينوع اساليب وطرائق التدريس المختلفة داخل المحاضرة.

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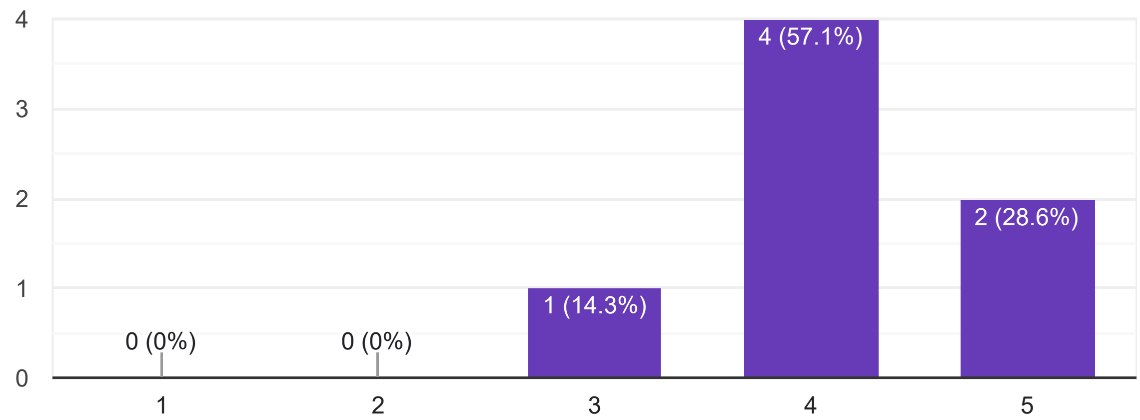

يحسن اساليب التعامل مع الطلبة ويراعي الفروق الفردية (3)

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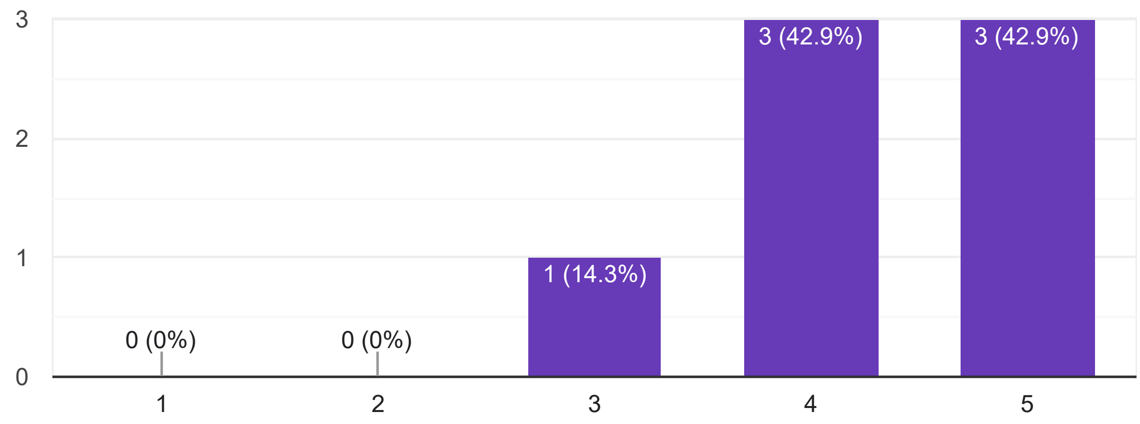

يشجع وينمي التعلم الذاتي عند الطلبة (4)

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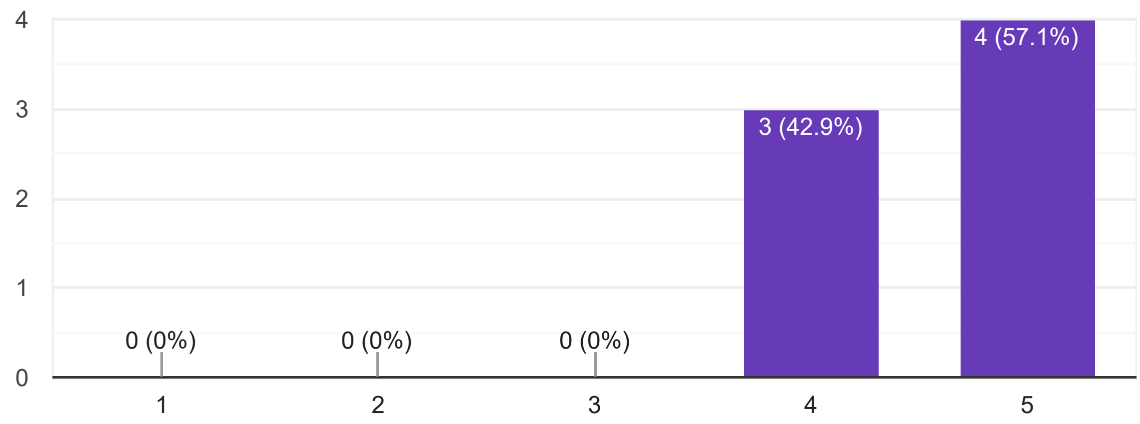

يستثمر الوقت داخل المحاضرة في اثراء المادة العلمية (5)

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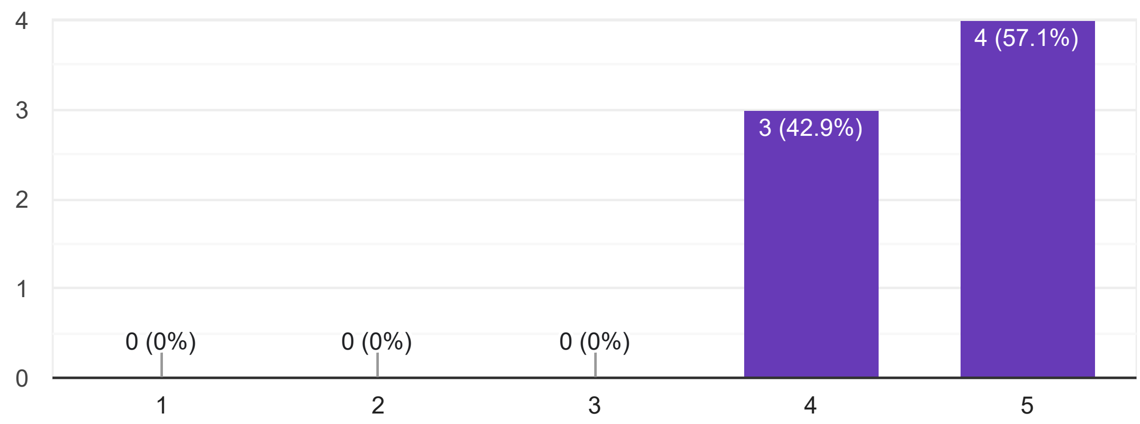

يستخدم وسائل تقليدية والكترونية متنوعة في الاختبارات والتقييم (6)

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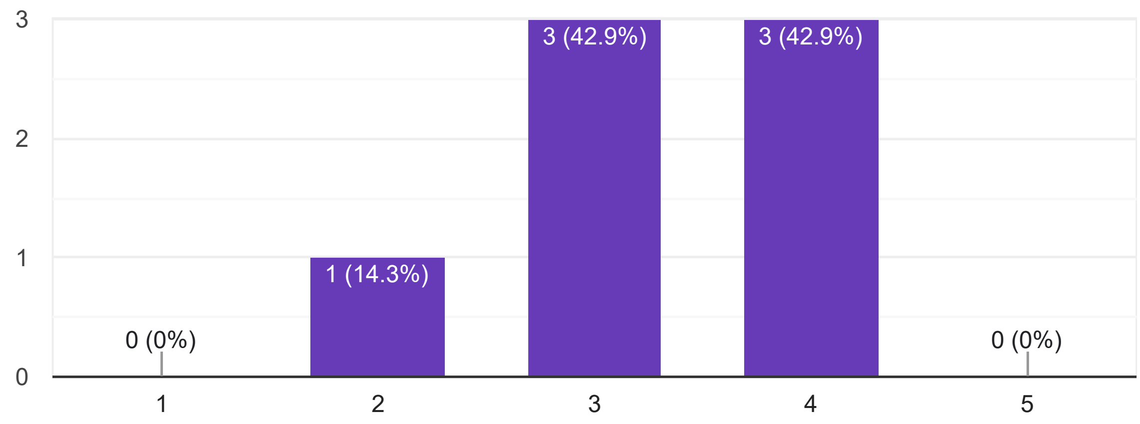

يوفر انشطة تعاونية او تنافسية متنوعة لاثارة دافعية الطلبة (7)

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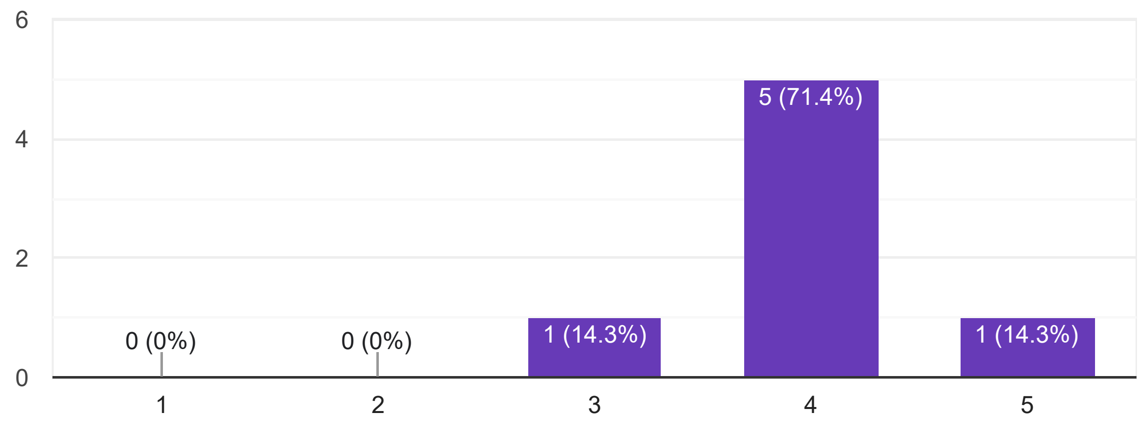

يتابع مستوى الطلبة بصورة مستمرة لغرض تعزيزمواطن القوة ومعالجة مواطن الضعف لديهم (8)

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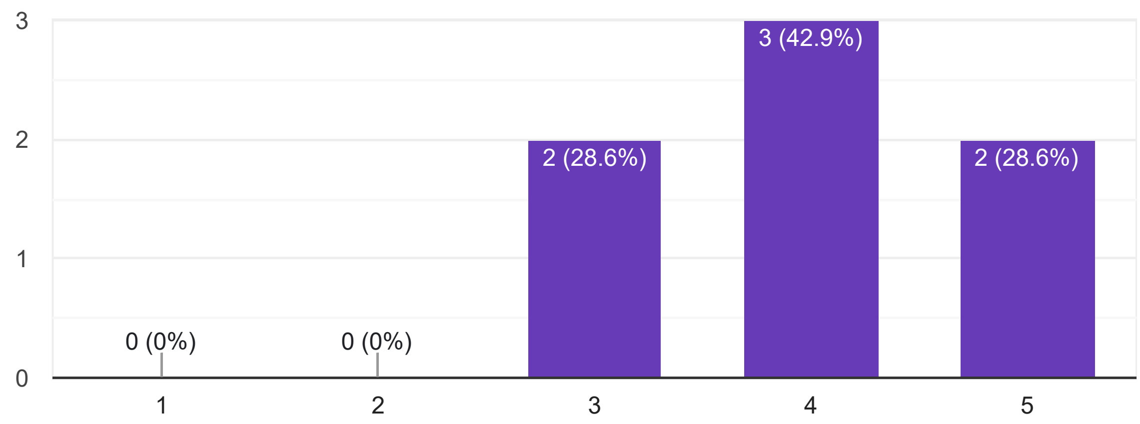

(9) يناقش اجابات الطلبة ويرد على استفساراتهم بمرونة لخلق بيئة تعليمية امنة

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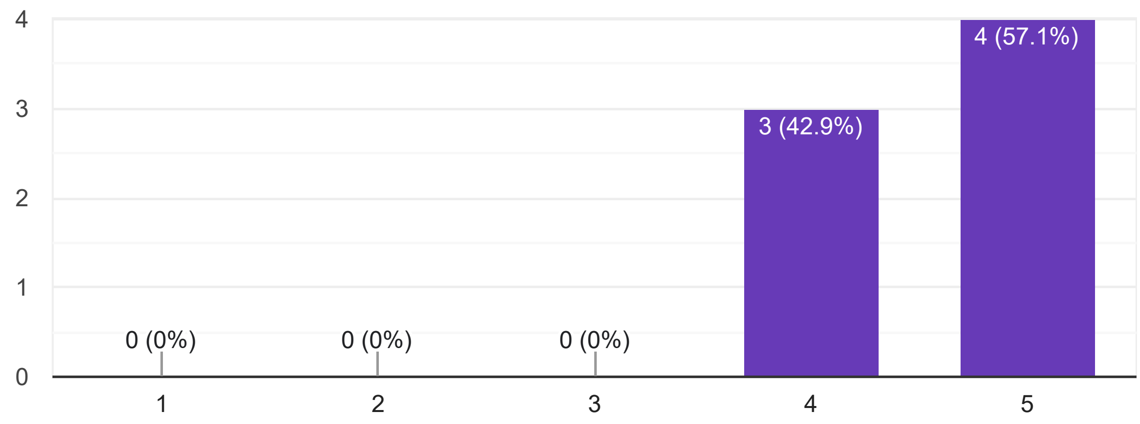

(10) ينمي الاتجاهات والعادات والاخلاق الحميدة لدى الطلبة

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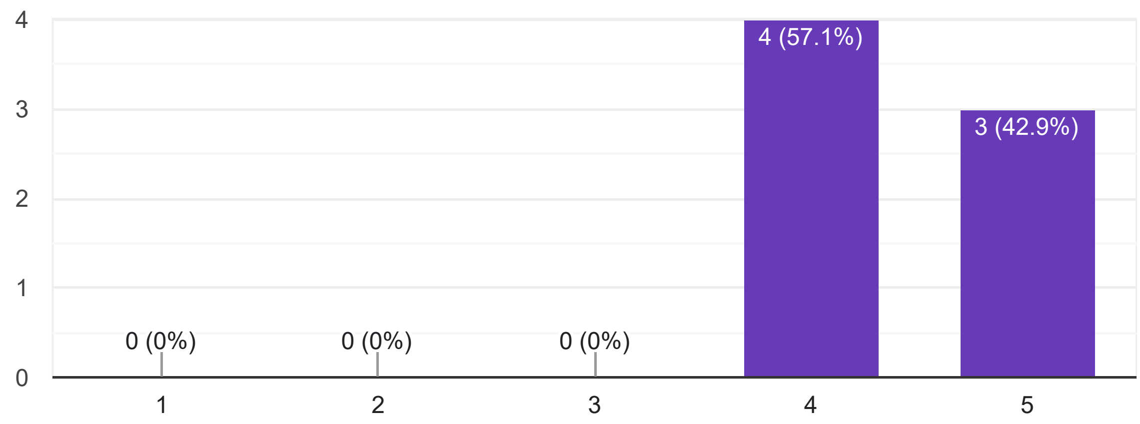

الأستبيان حول التدريسي: (م.م. مناهل زينو)

(1) يمهد للدرس ويراعي التسلسل في عرض المادة بطريقة منطقية ومشوقة.

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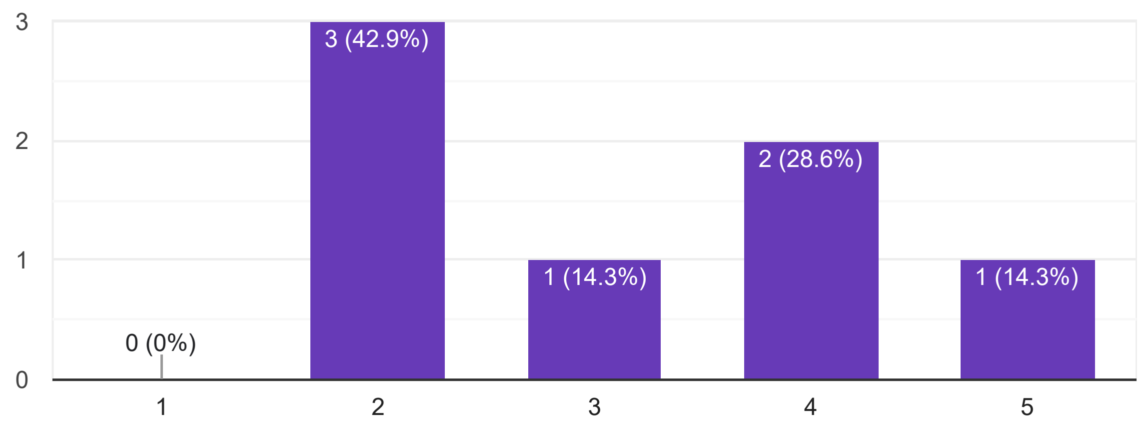

(2) ينوع اساليب وطرائق التدريس المختلفة داخل المحاضرة.

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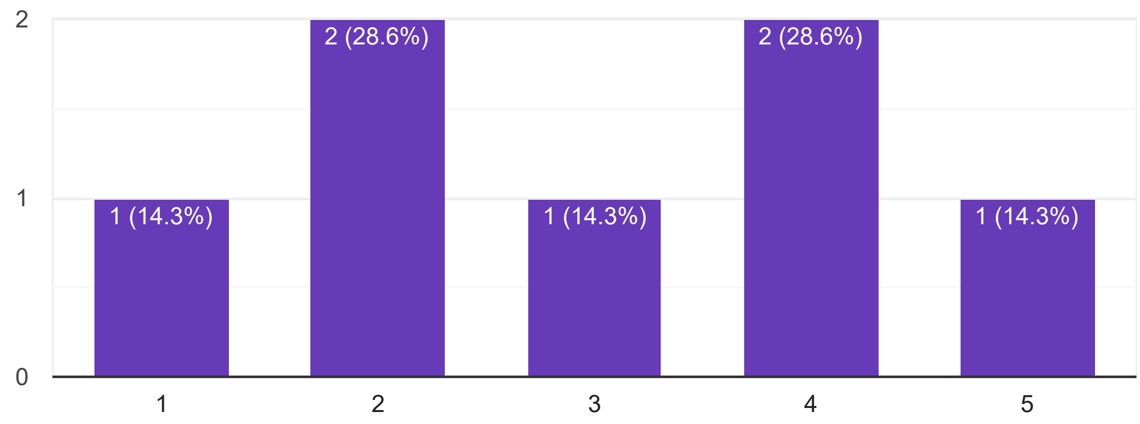

(3) يحسن اساليب التعامل مع الطلبة ويراعي الفروق الفردية

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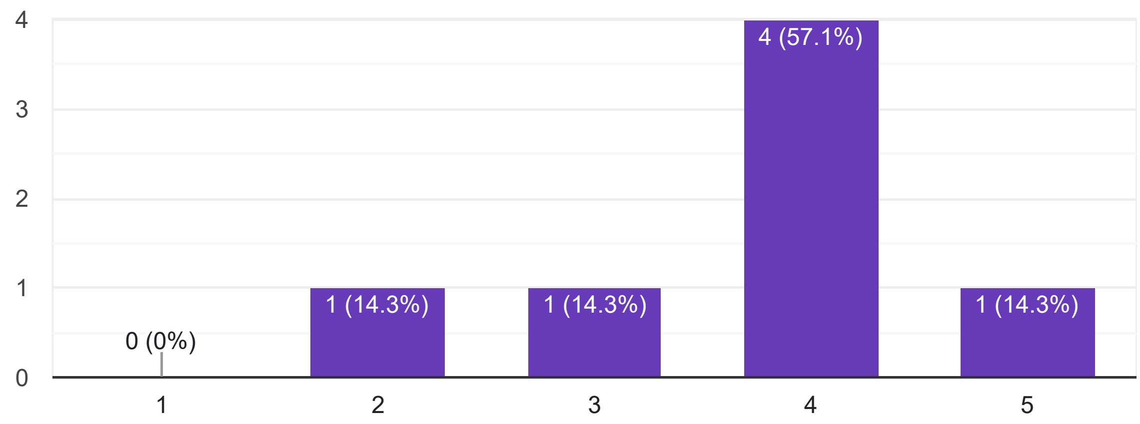

(4) يشجع وينمي التعلم الذاتي عند الطلبة

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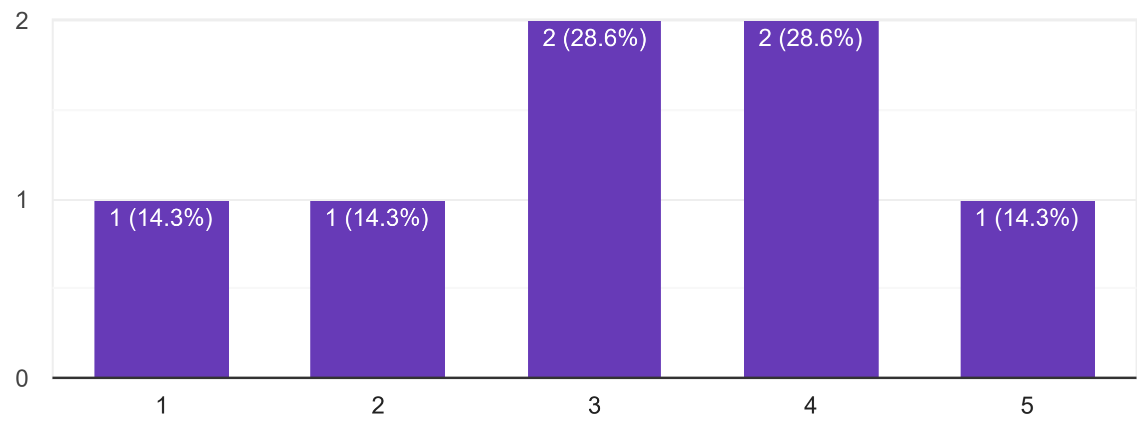

يستثمر الوقت داخل المحاضرة في اثراء المادة العلمية (5)

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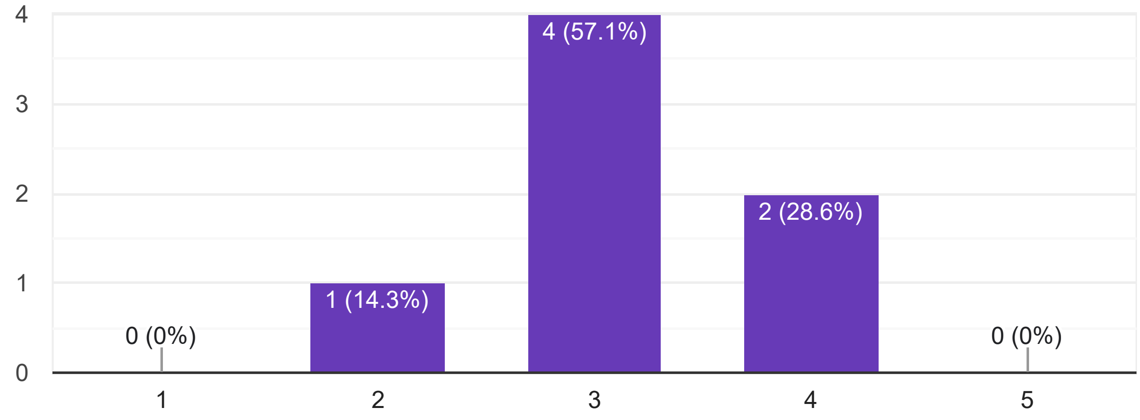

يستخدم وسائل تقليدية والكترونية متنوعة في الاختبارات والتقييم (6)

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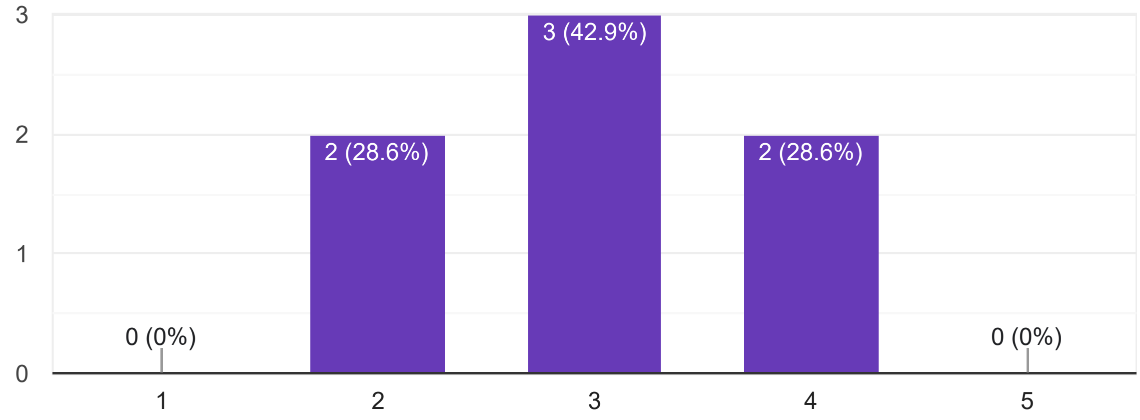

يوفر انشطة تعاونية او تنافسية متنوعة لاثارة دافعية الطلبة (7)

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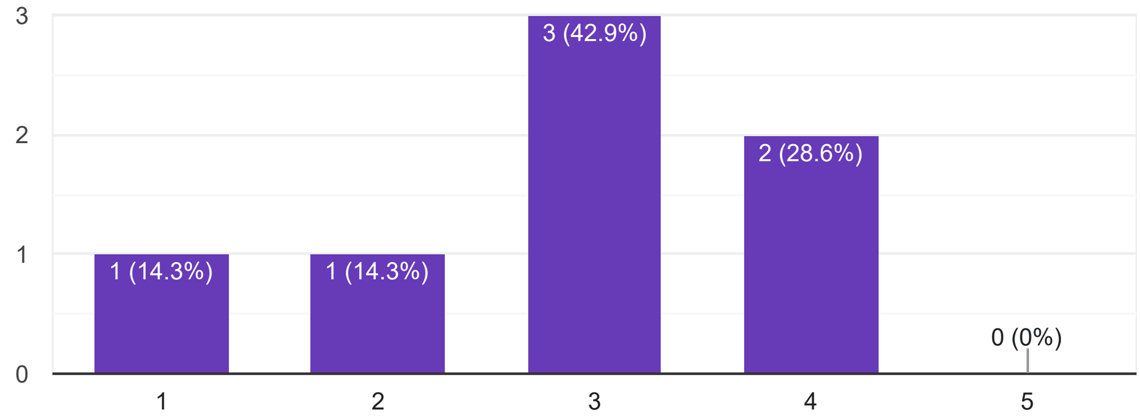

(8) يتابع مستوى الطلبة بصورة مستمرة لغرض تعزيزمواطن القوة ومعالجة مواطن الضعف لديهم

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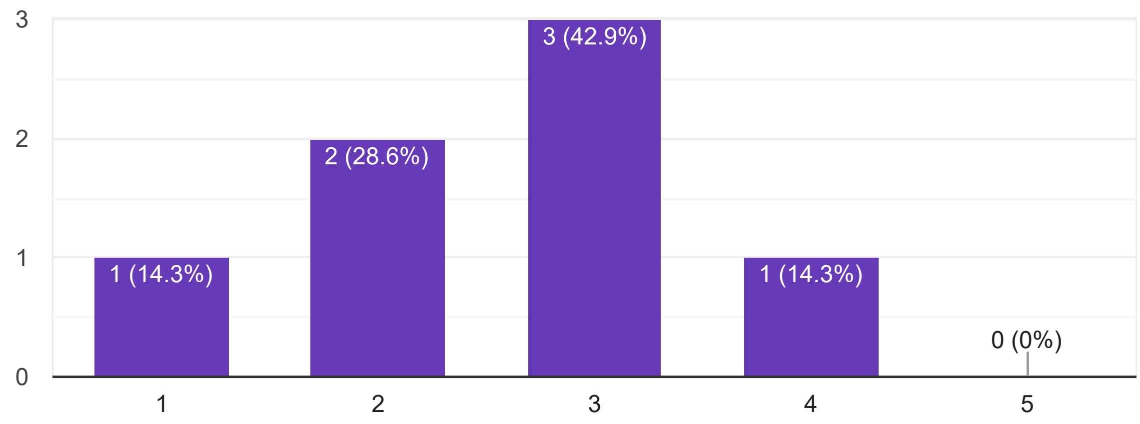

(9) يناقش اجابات الطلبة ويرد على استفساراتهم بمرونة لخلق بيئة تعليمية امنة

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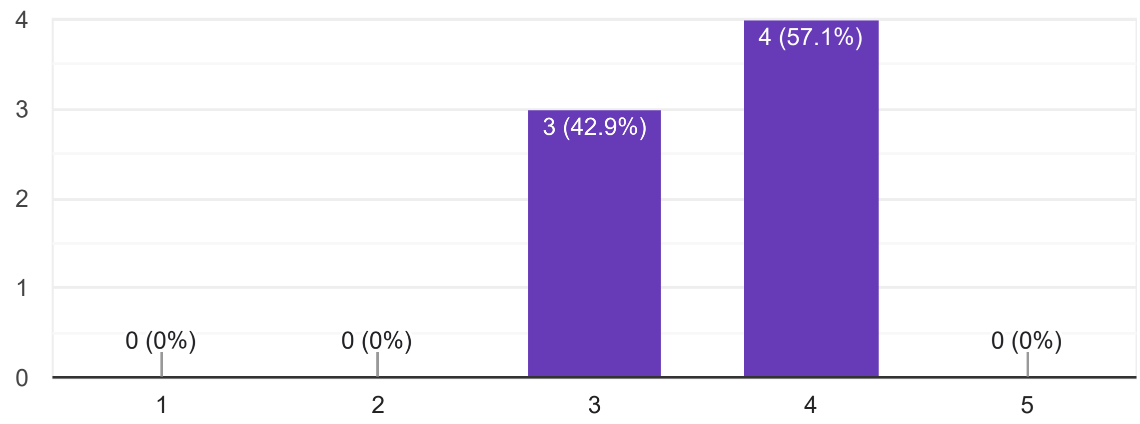

(10) ينمي الاتجاهات والعادات والاخلاق الحميدة لدى الطلبة

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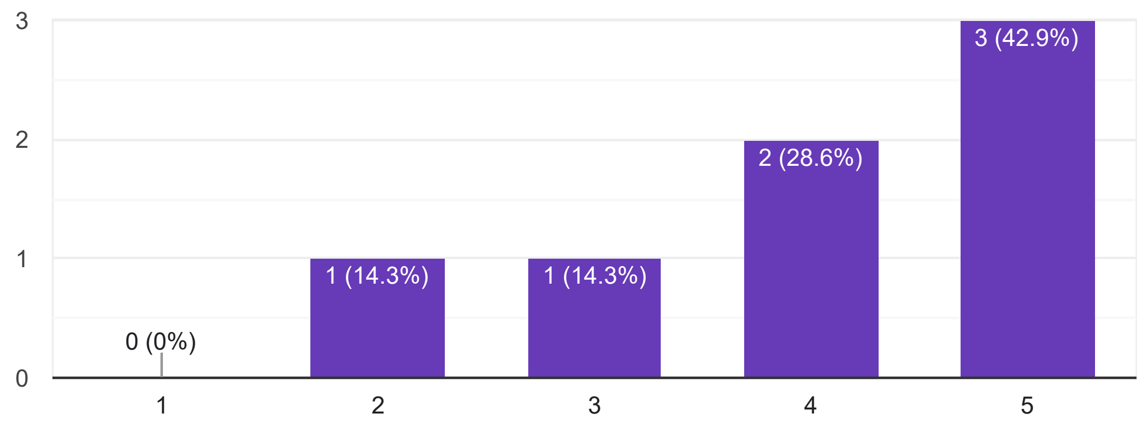

(1) يمهد للدرس ويراعي التسلسل في عرض المادة بطريقة منطقية ومشوقة.

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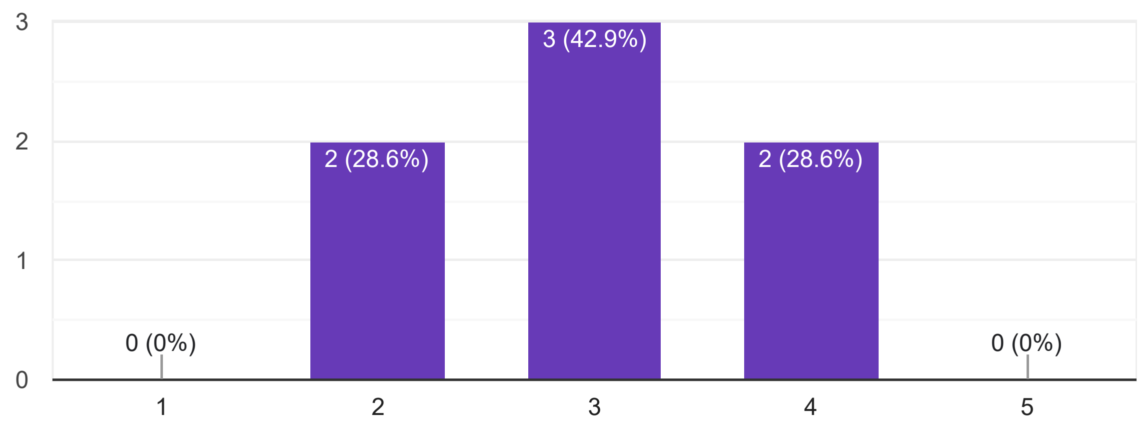

(2) ينوع اساليب وطرائق التدريس المختلفة داخل المحاضرة.

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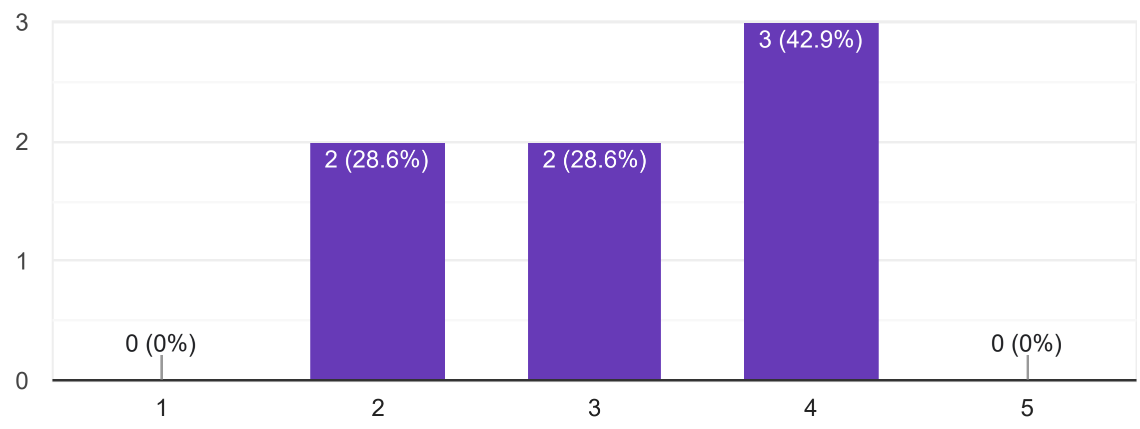

(3) يحسن اساليب التعامل مع الطلبة ويراعي الفروق الفردية

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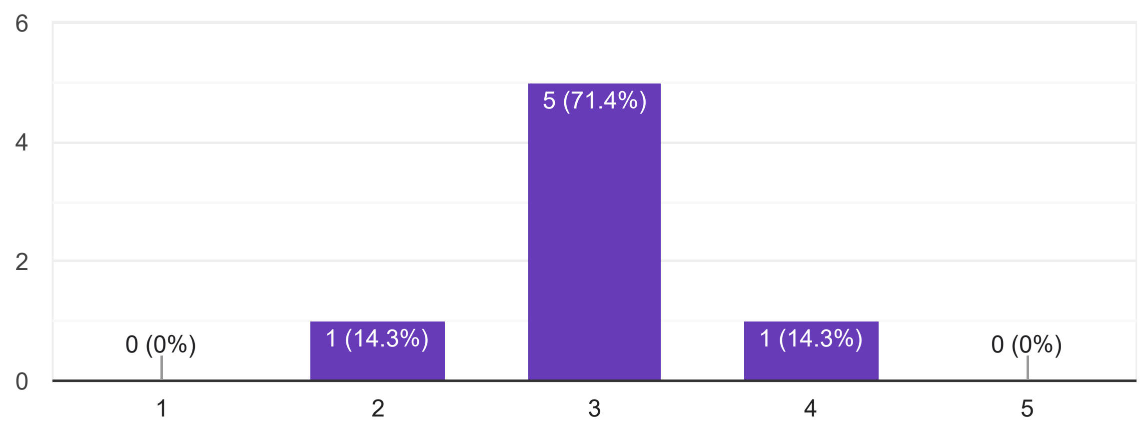

(4) يشجع وينمي التعلم الذاتي عند الطلبة

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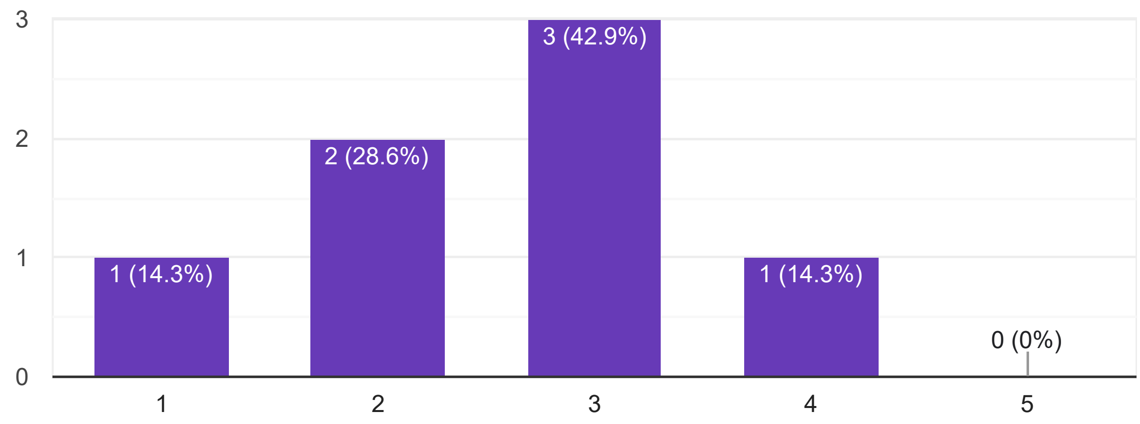

(5) يستثمر الوقت داخل المحاضرة في اثراء المادة العلمية

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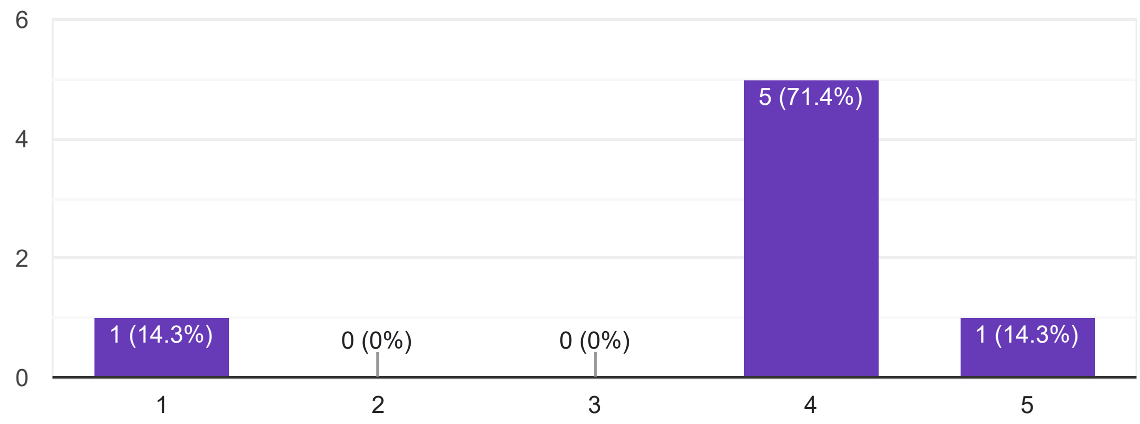

(6) يستخدم وسائل تقليدية والكترونية متنوعة في الاختبارات والتقييم

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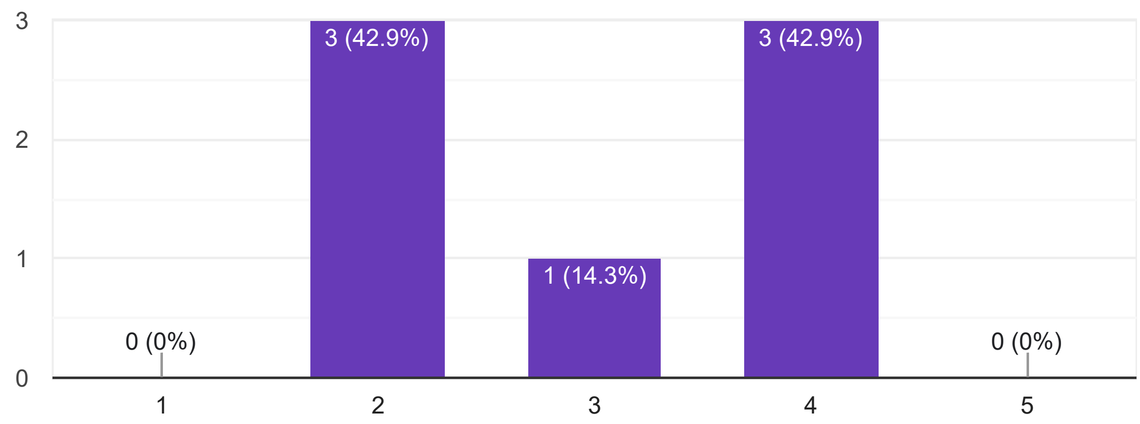

يوفر انشطة تعاونية او تنافسية متنوعة لاثارة دافعية الطلبة (7)

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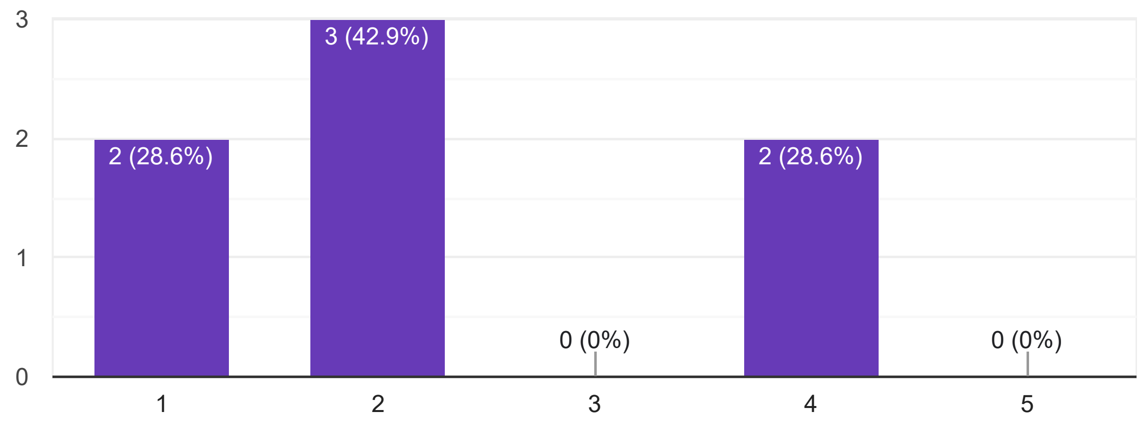
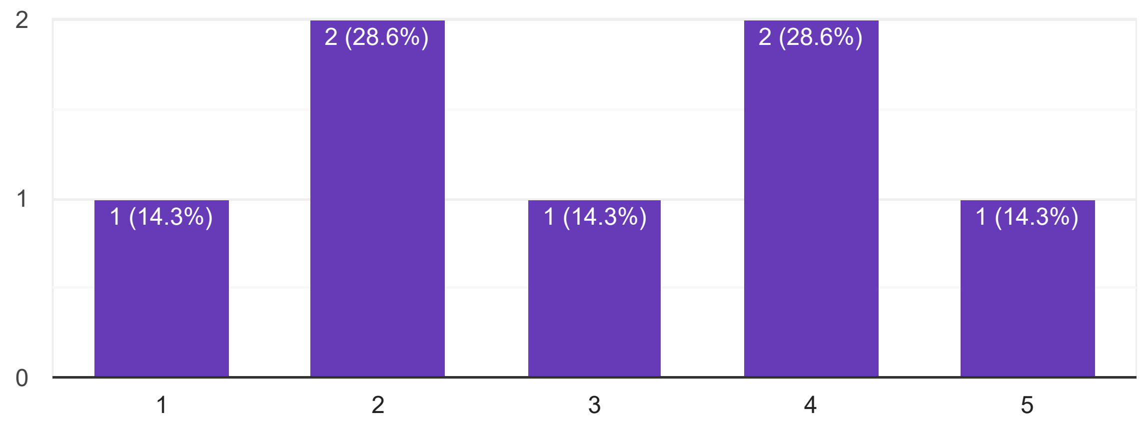
7 responses



يتابع مستوى الطلبة بصورة مستمرة لغرض تعزيزمواطن القوة ومعالجة مواطن الضعف لديهم (8)

Copy

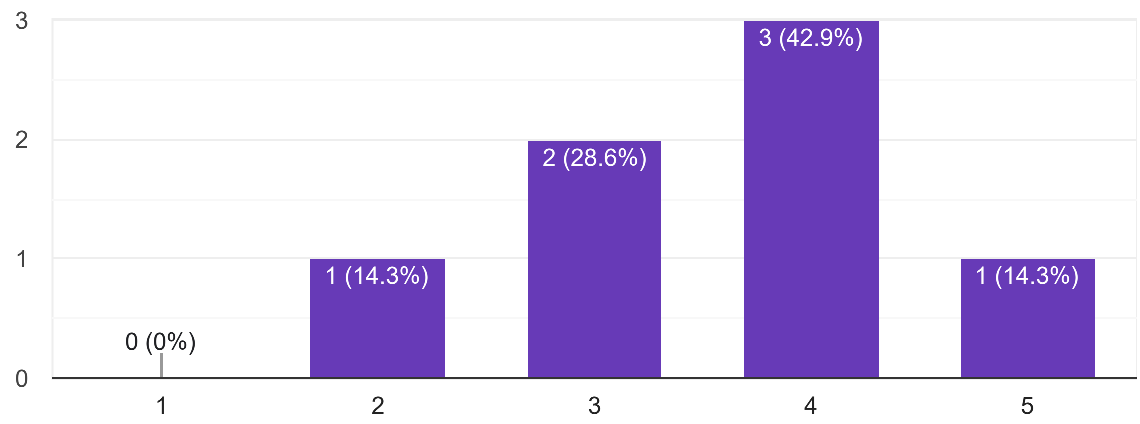
7 responses



يناقش اجابات الطلبة ويرد على استفساراتهم بمرونة لخلق بيئة تعليمية امنة (9)

Copy

7 responses



يني الاتجاهات والعادات والاخلاق الحميدة لدى الطلبة (10)

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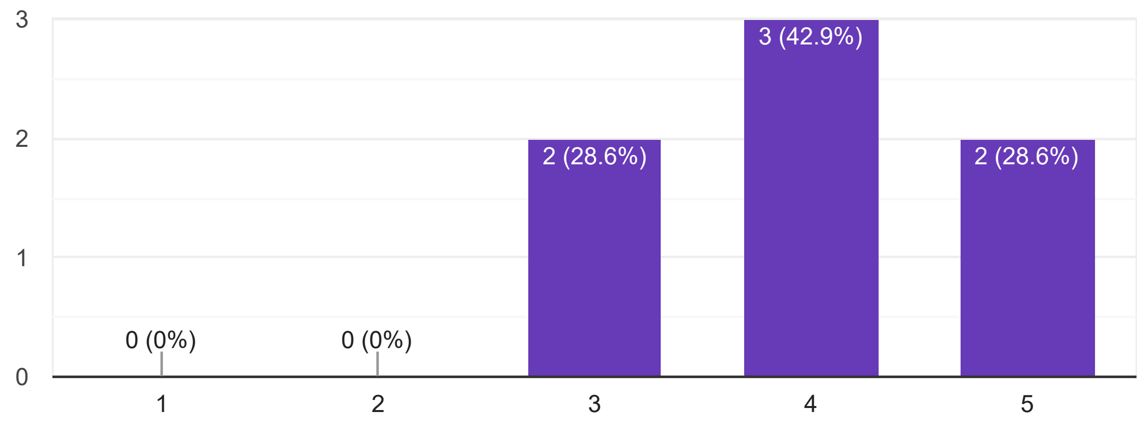
7 responses

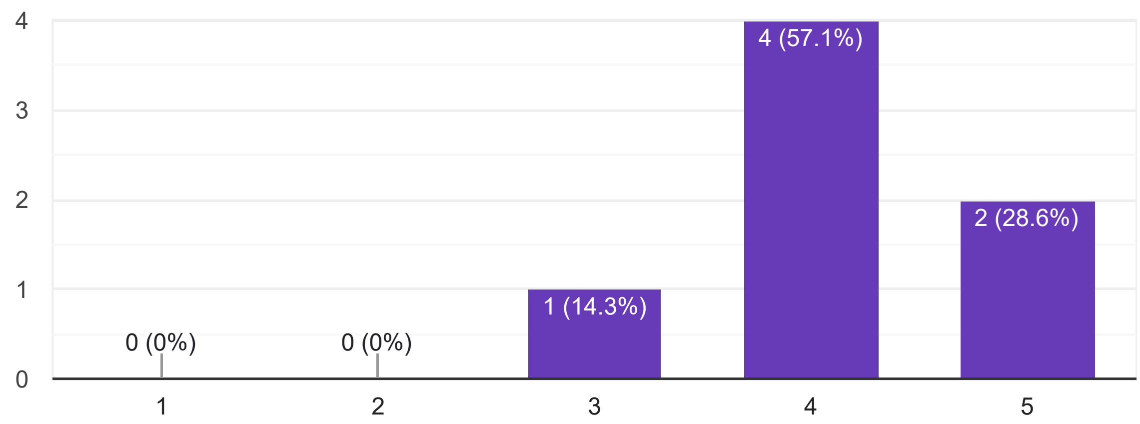


الأستبيان حول التدريسي: (د. ايمان عباس)

يمهد للدرس ويراعي التسلسل في عرض المادة بطريقة منطقية ومشوقة. (1)

Copy

7 responses



ينوع اساليب وطرائق التدريس المختلفة داخل المحاضرة. (2)

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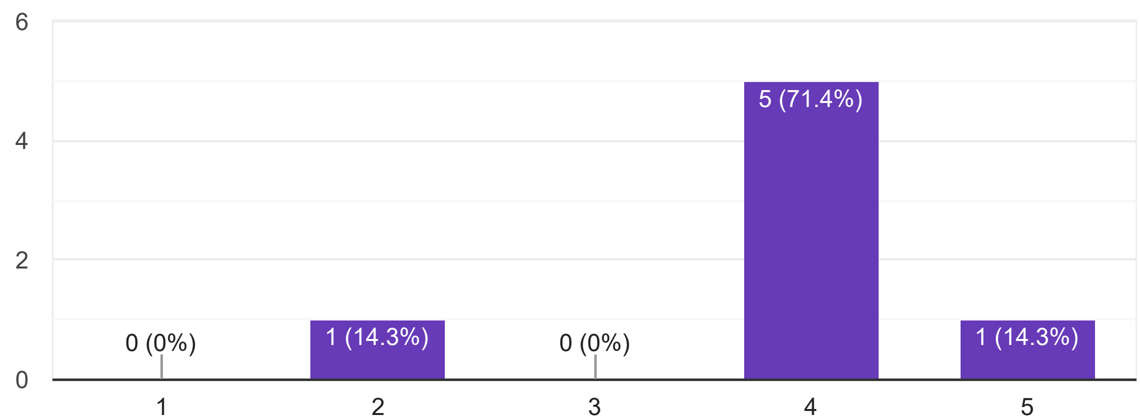
7 responses



يحسن اساليب التعامل مع الطلبة ويراعي الفروق الفردية (3)

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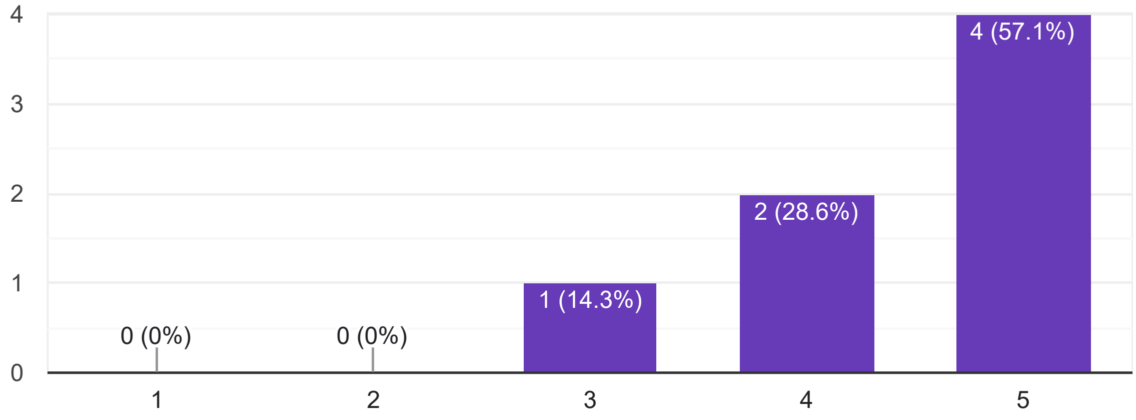
7 responses



يشجع وينمي التعلم الذاتي عند الطلبة (4)

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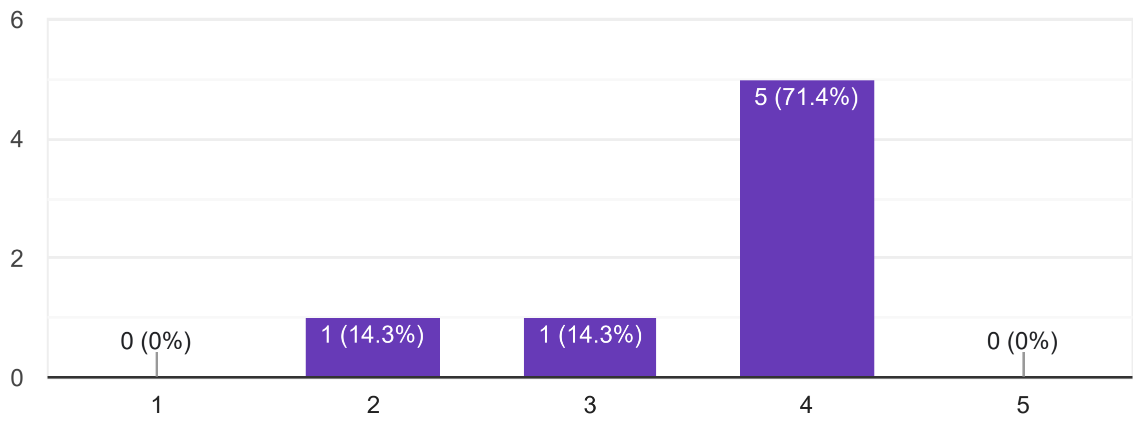
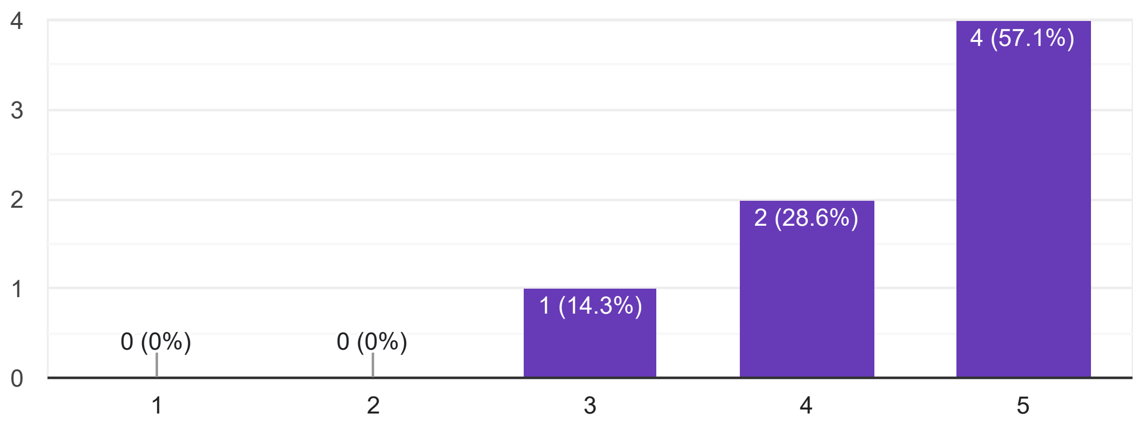
7 responses



يستثمر الوقت داخل المحاضرة في اثراء المادة العلمية (5)

Copy

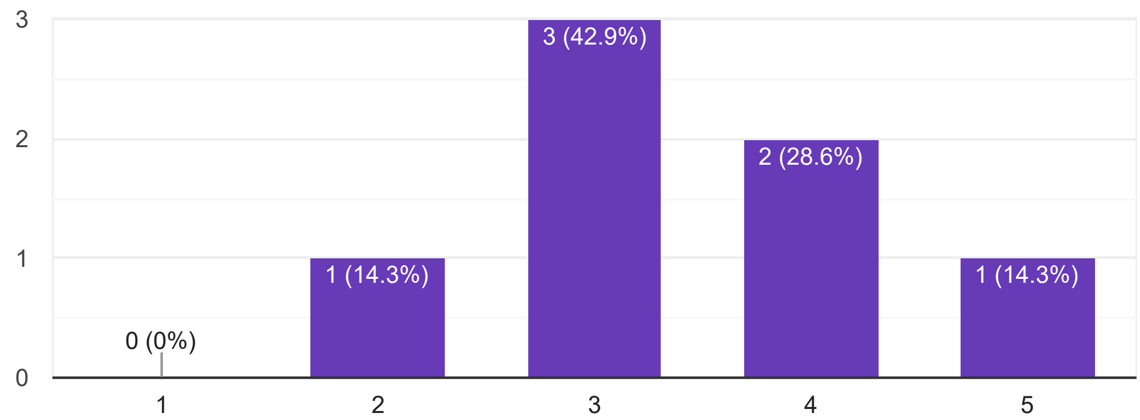
7 responses



يستخدم وسائل تقليدية والكترونية متنوعة في الاختبارات والتقييم (6)

Copy

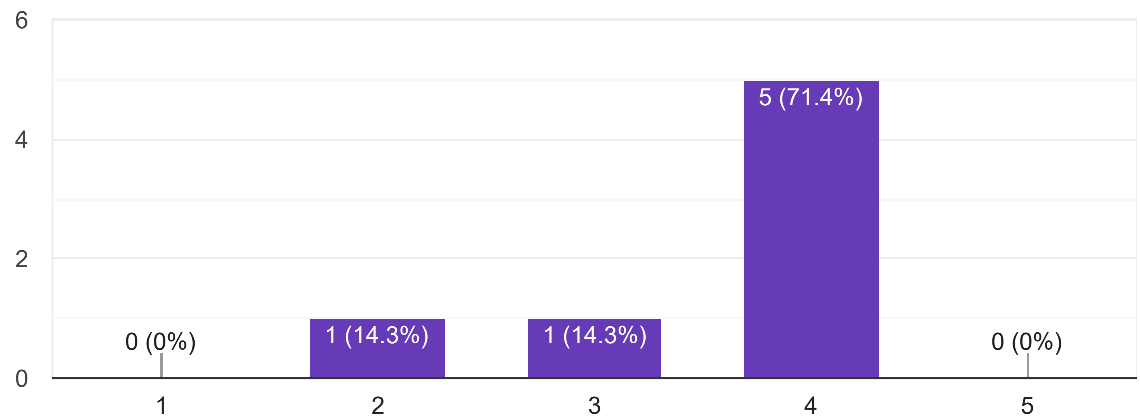
7 responses



يوفر انشطة تعاونية او تنافسية متنوعة لاثارة دافعية الطلبة (7)

Copy

7 responses



يتابع مستوى الطلبة بصورة مستمرة لغرض تعزيزمواطن القوة ومعالجة مواطن الضعف لديهم (8)

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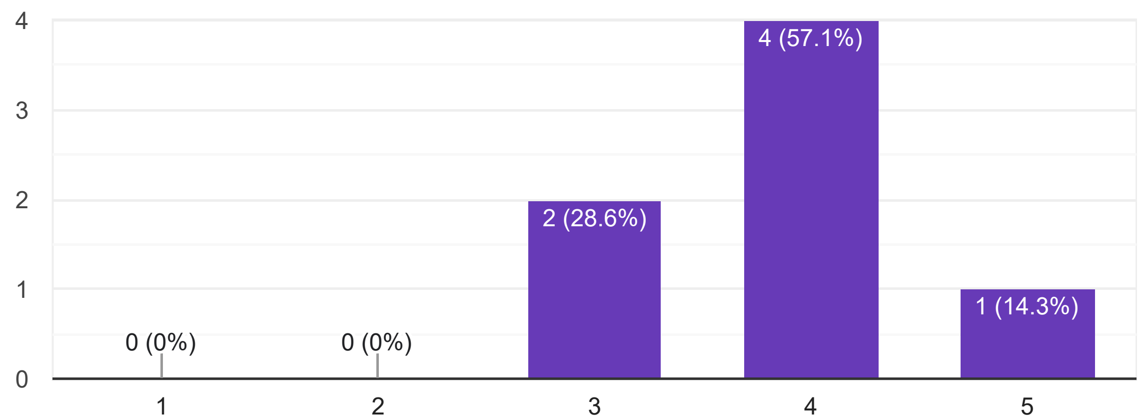
7 responses



(9) يناقش اجابات الطلبة ويرد على استفساراتهم بمرونة لخلق بيئة تعليمية امنة

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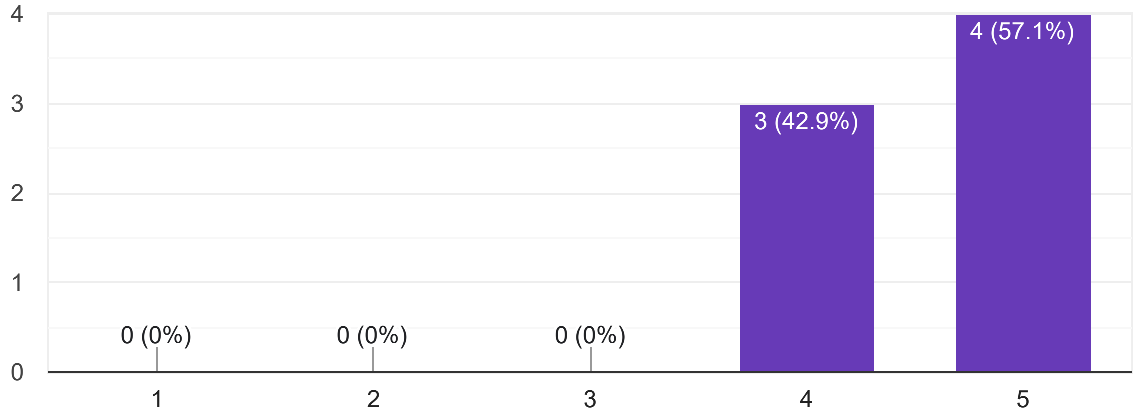
7 responses



(10) ينمي الاتجاهات والعادات والاخلاق الحميدة لدى الطلبة

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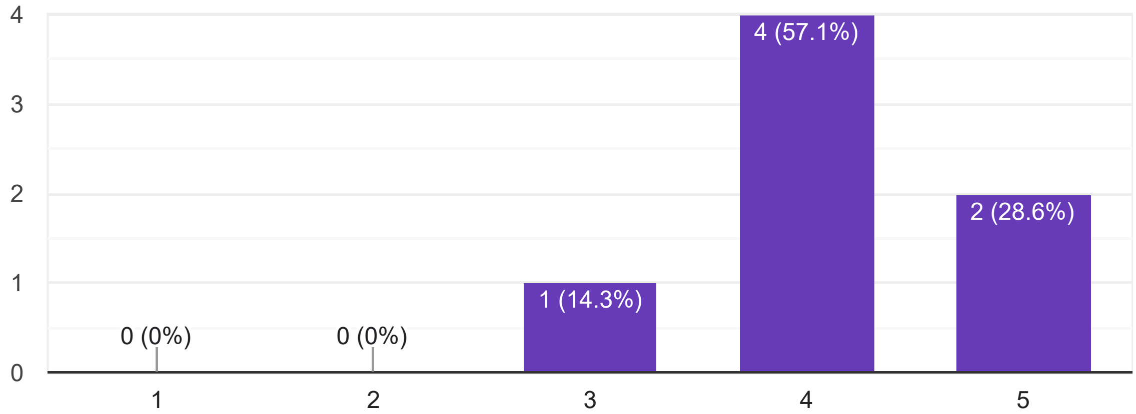
7 responses

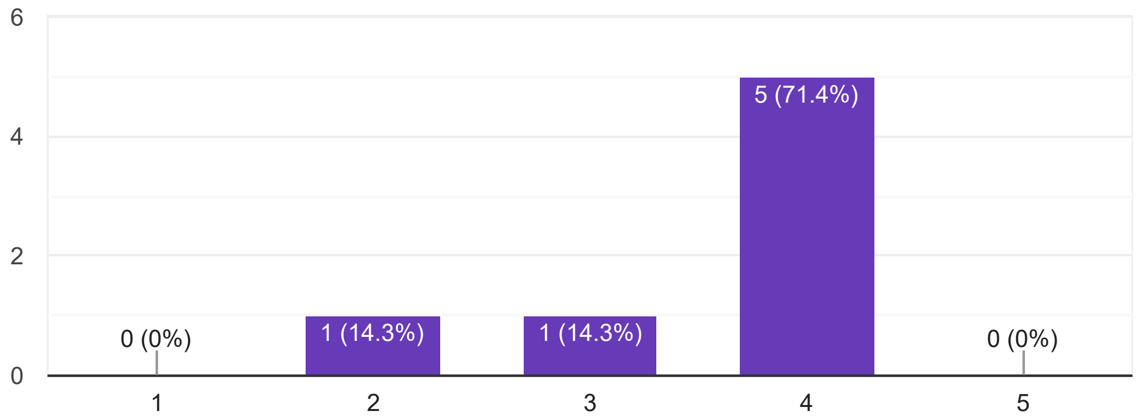


الأستبيان حول التدريسي: (د.مصطفى حميد)

(1) يمهد للدرس ويراعي التسلسل في عرض المادة بطريقة منطقية ومشوقة.

Copy

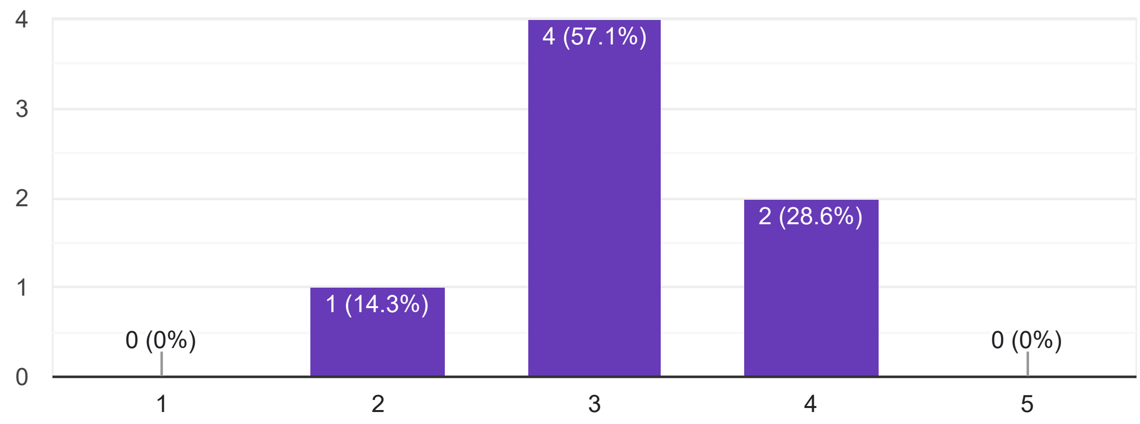
7 responses



(2) ينوع اساليب وطرائق التدريس المختلفة داخل المحاضرة.

Copy

7 responses



(3) يحسن اساليب التعامل مع الطلبة ويراعي الفروق الفردية

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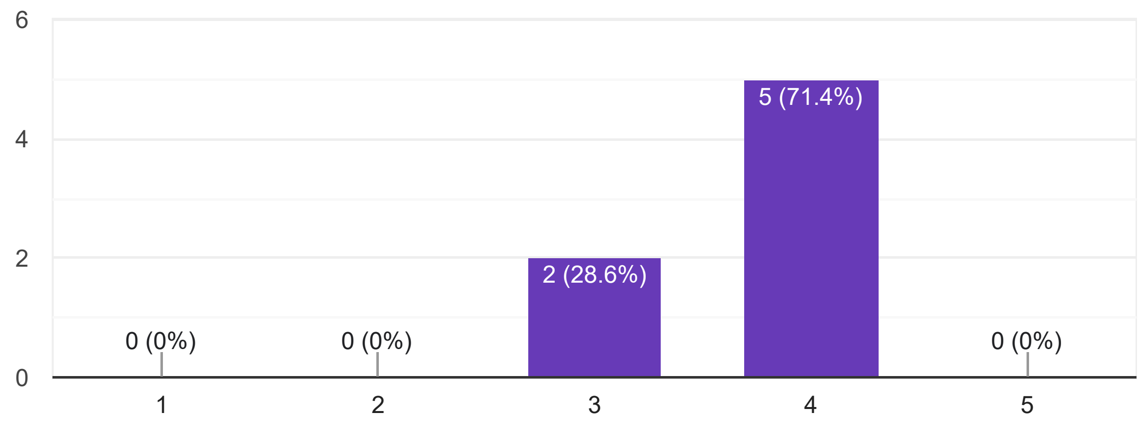
7 responses



(4) يشجع وينمي التعلم الذاتي عند الطلبة

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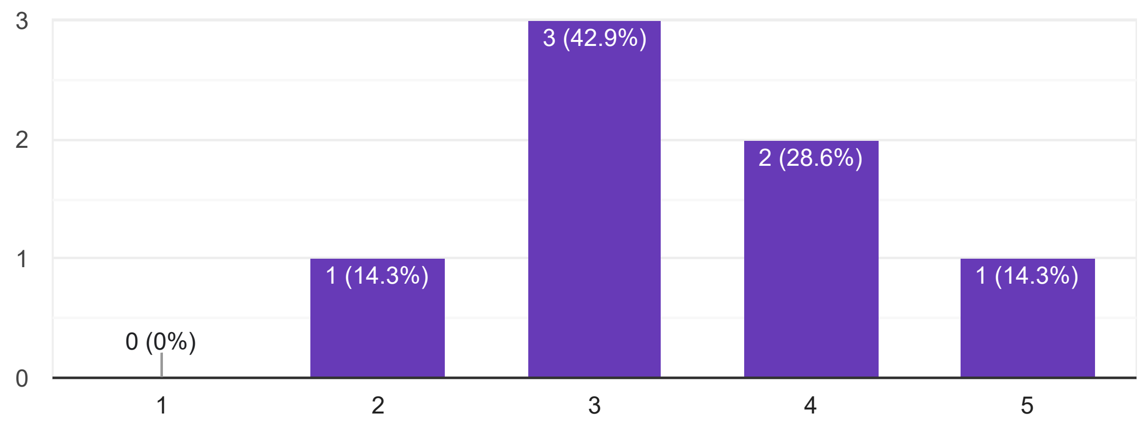
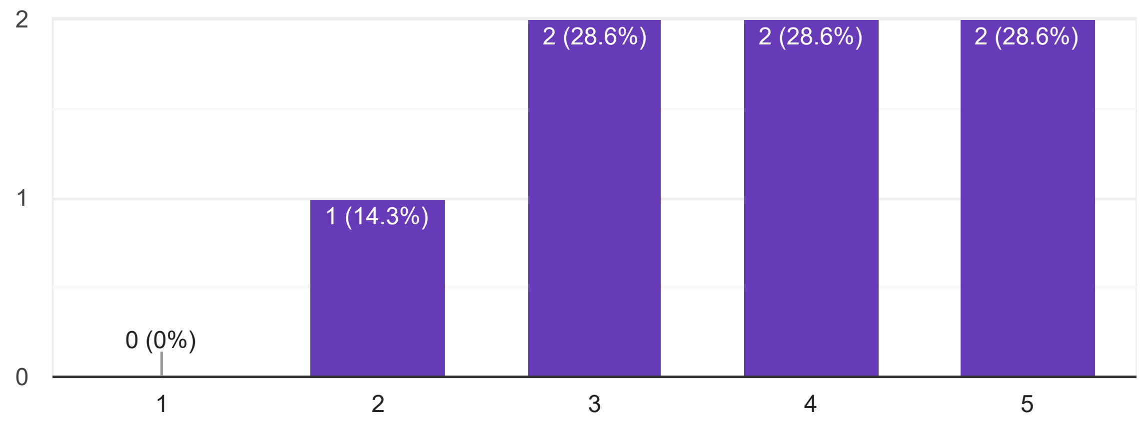
7 responses



(5) يستثمر الوقت داخل المحاضرة في اثراء المادة العلمية

Copy

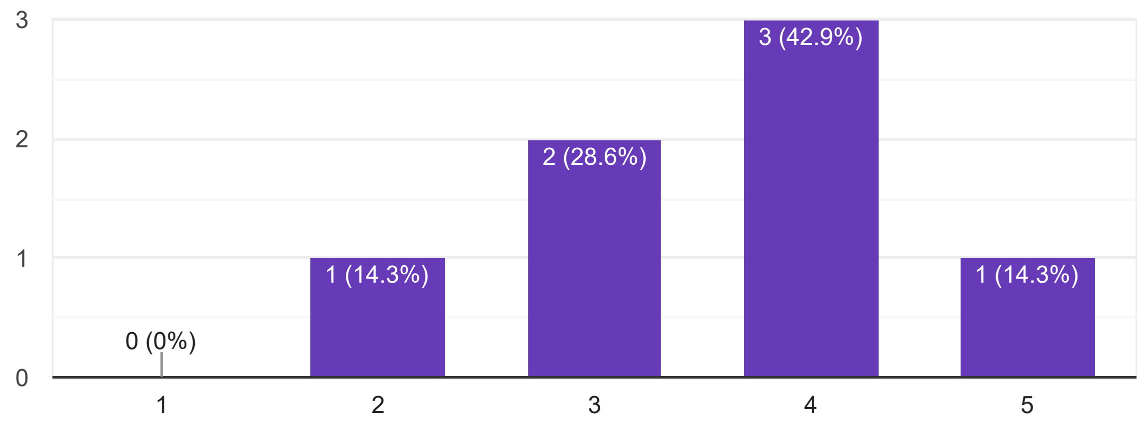
7 responses



(6) يستخدم وسائل تقليدية والكترونية متنوعة في الاختبارات والتقييم

Copy

7 responses



(7) يوفر انشطة تعاونية او تنافسية متنوعة لاثارة دافعية الطلبة

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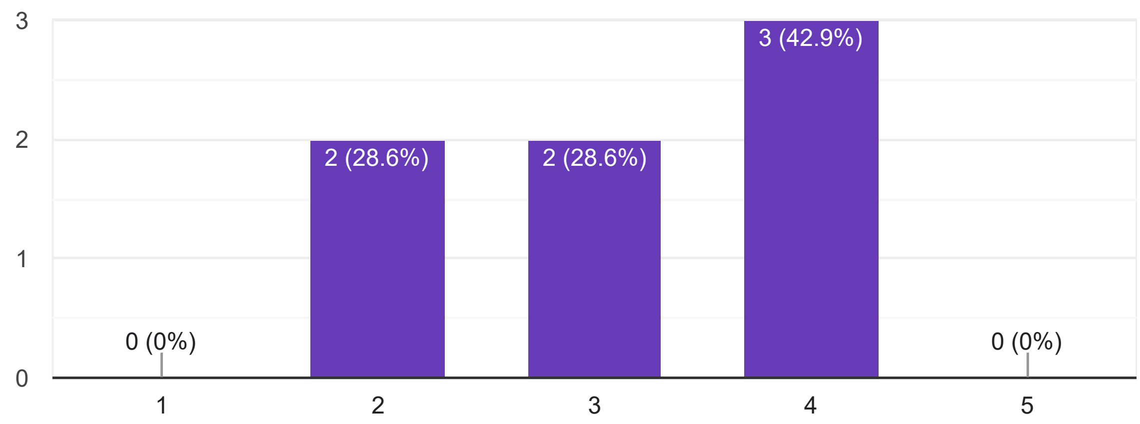
7 responses



(8) يتابع مستوى الطلبة بصورة مستمرة لغرض تعزيزمواطن القوة ومعالجة مواطن الضعف لديهم

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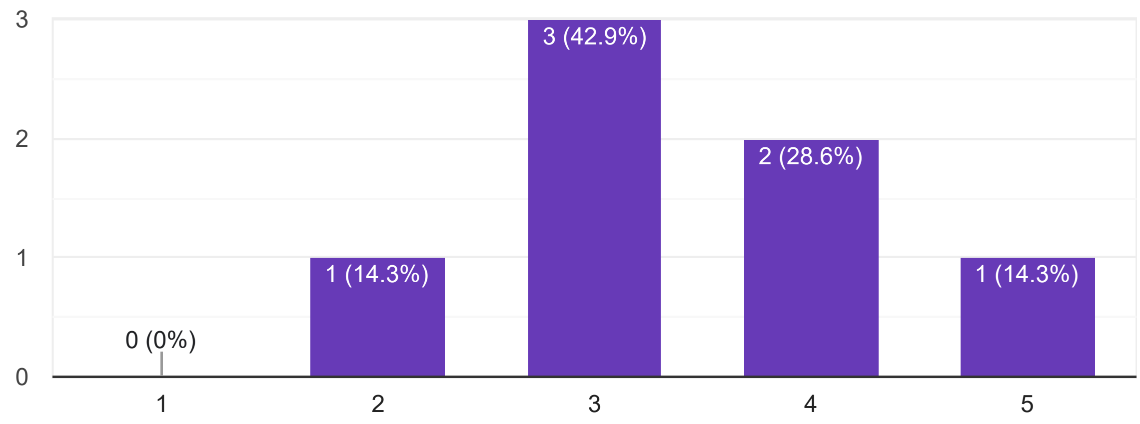
7 responses



(9) يناقش اجابات الطلبة ويرد على استفساراتهم بمرونة لخلق بيئة تعليمية امنة

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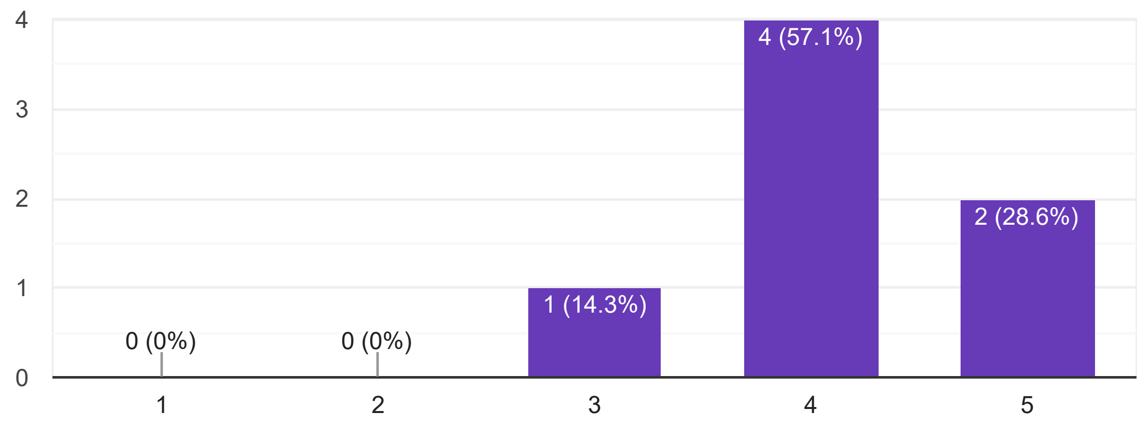
7 responses



(10) ينمي الاتجاهات والعادات والاخلاق الحميدة لدى الطلبة

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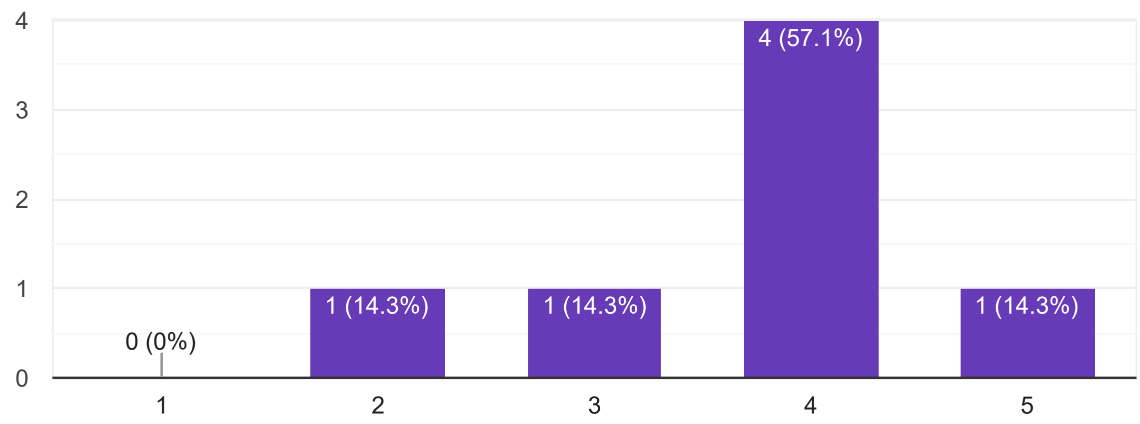
7 responses



يمهد للدرس ويراعي التسلسل في عرض المادة بطريقة منطقية ومشوقة. (1)

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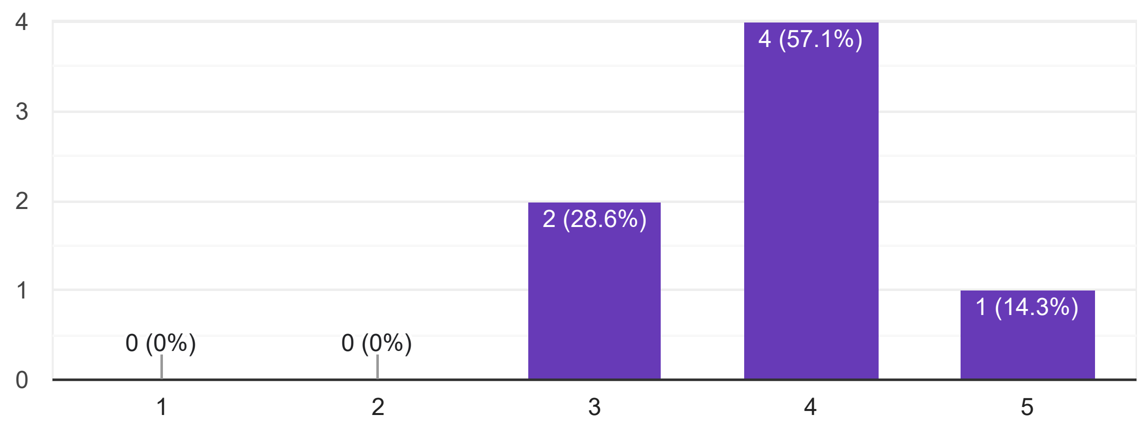
7 responses



ينوع اساليب وطرائق التدريس المختلفة داخل المحاضرة. (2)

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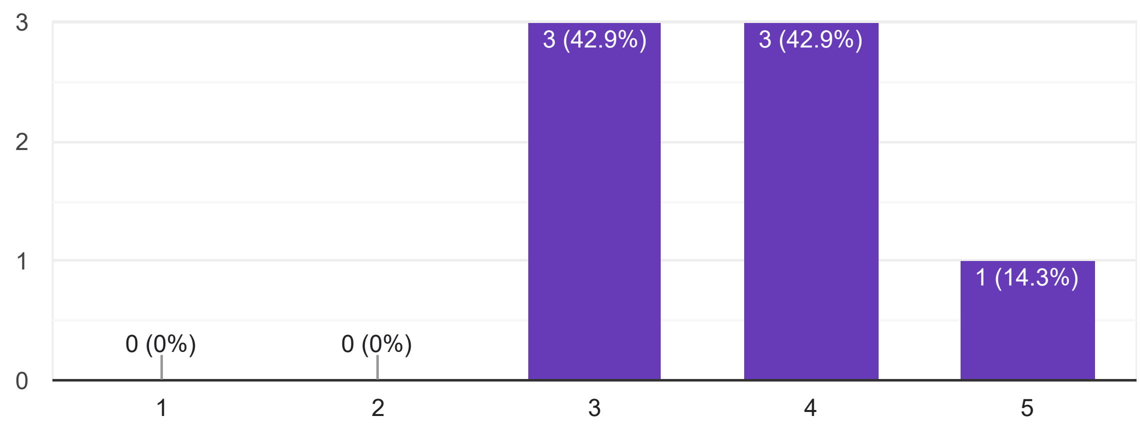
7 responses



يحسن اساليب التعامل مع الطلبة ويراعي الفروق الفردية (3)

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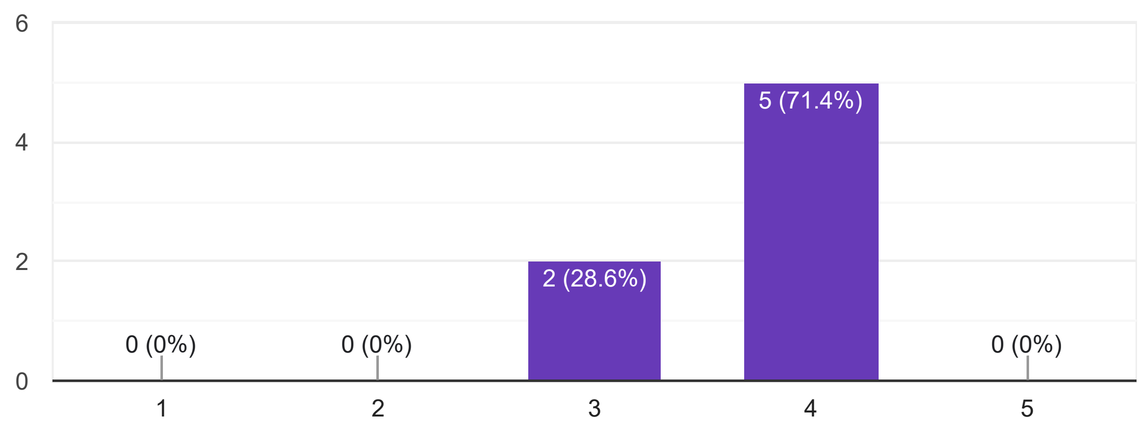
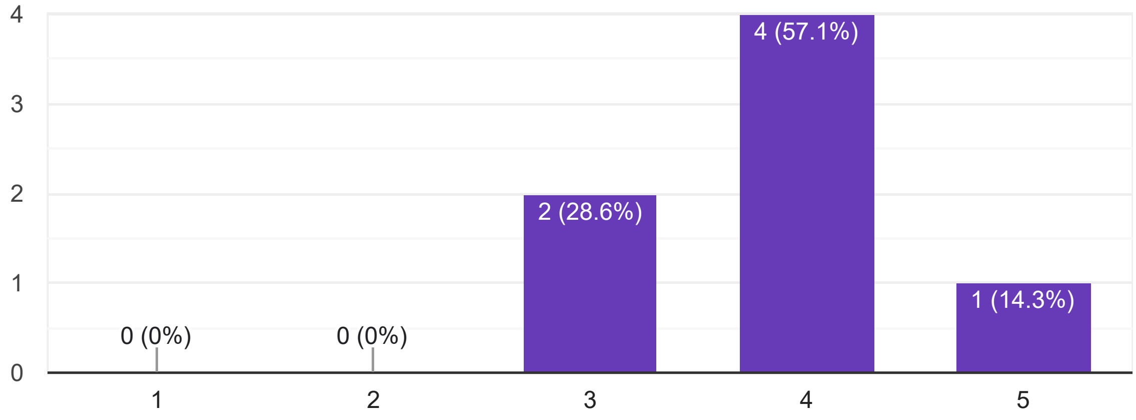
7 responses



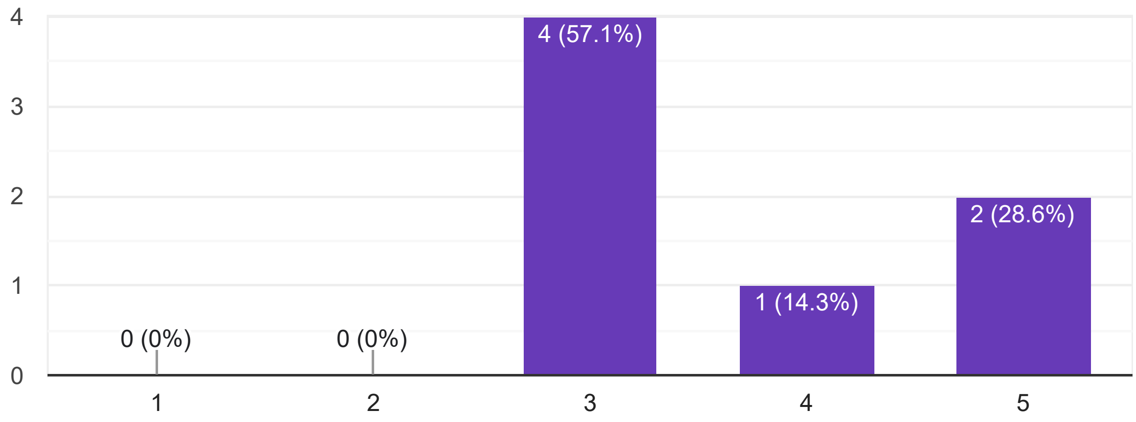
(4) يشجع وينمي التعلم الذاتي عند الطلبة

7 responses



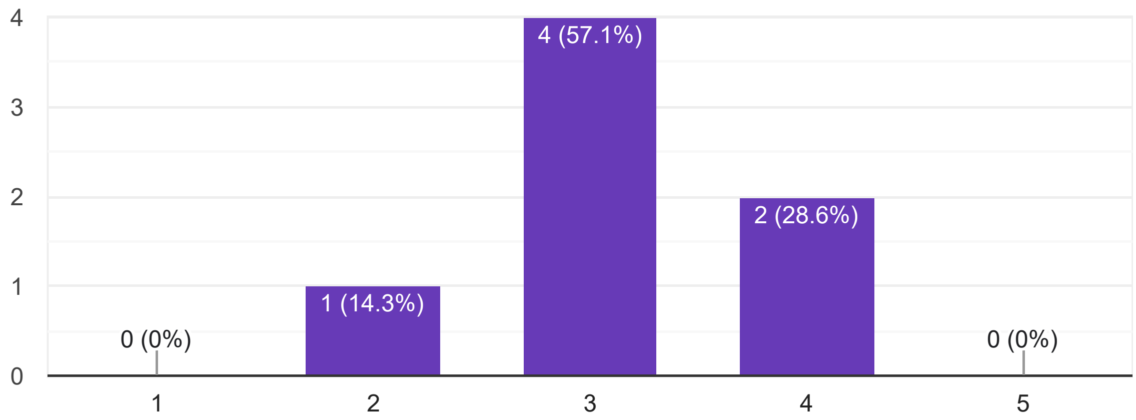
(5) يستثمر الوقت داخل المحاضرة في اثراء المادة العلمية

7 responses



(6) يستخدم وسائل تقليدية والكترونية متنوعة في الاختبارات والتقييم

7 responses



(7) يوفر انشطة تعاونية او تنافسية متنوعة لاثارة دافعية الطلبة

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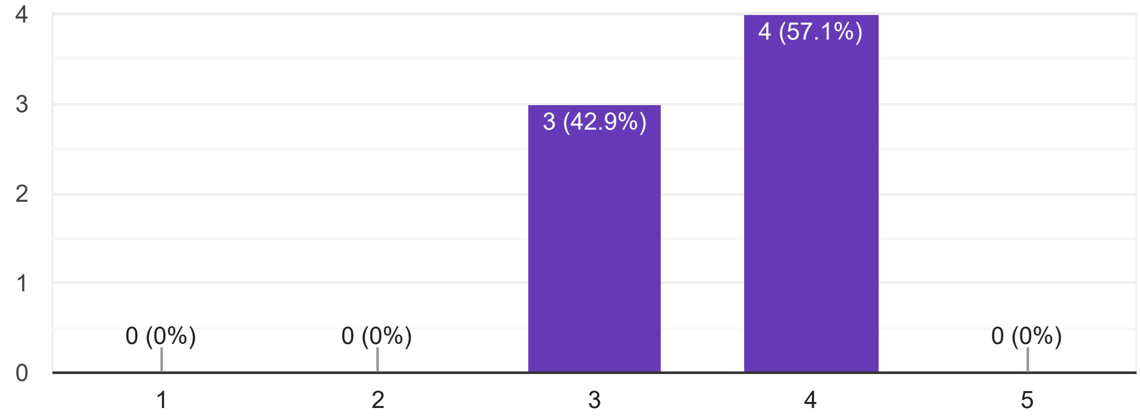
7 responses



(8) يتابع مستوى الطلبة بصورة مستمرة لغرض تعزيزمواطن القوة ومعالجة مواطن الضعف لديهم

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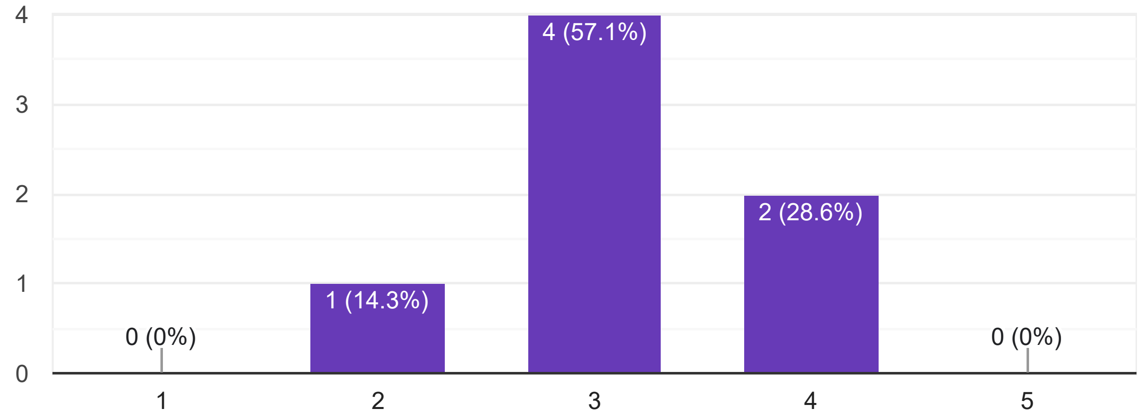
7 responses



(9) يناقش اجابات الطلبة ويرد على استفساراتهم بمرونة لخلق بيئة تعليمية امنة

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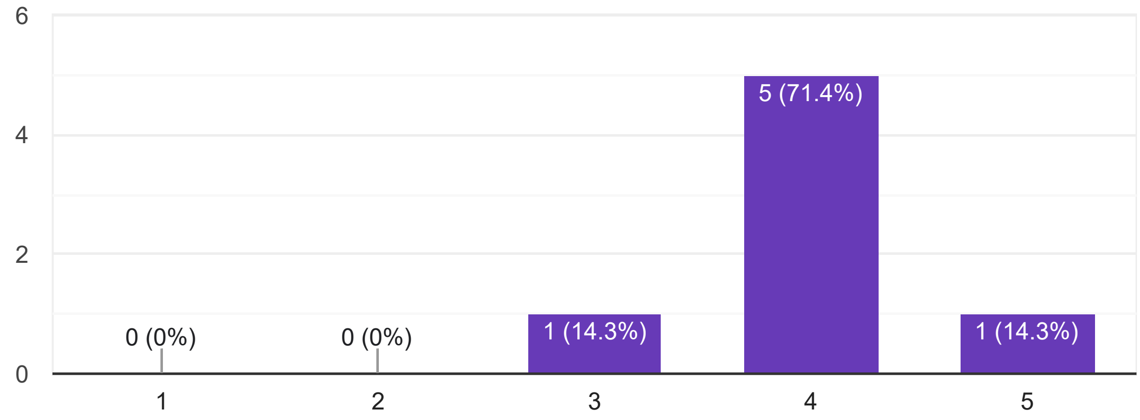
7 responses



(10) ينمي الاتجاهات والعادات والاخلاق الحميدة لدى الطلبة

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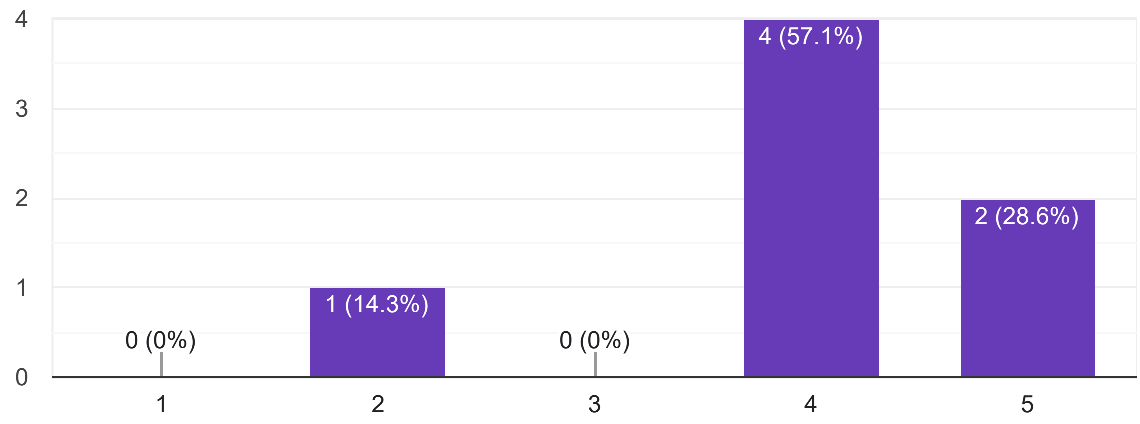
7 responses



الأستبيان حول التدريسي: (د. ايمان عباس)

(1) يمهد للدرس ويراعي التسلسل في عرض المادة بطريقة منطقية ومشوقة.

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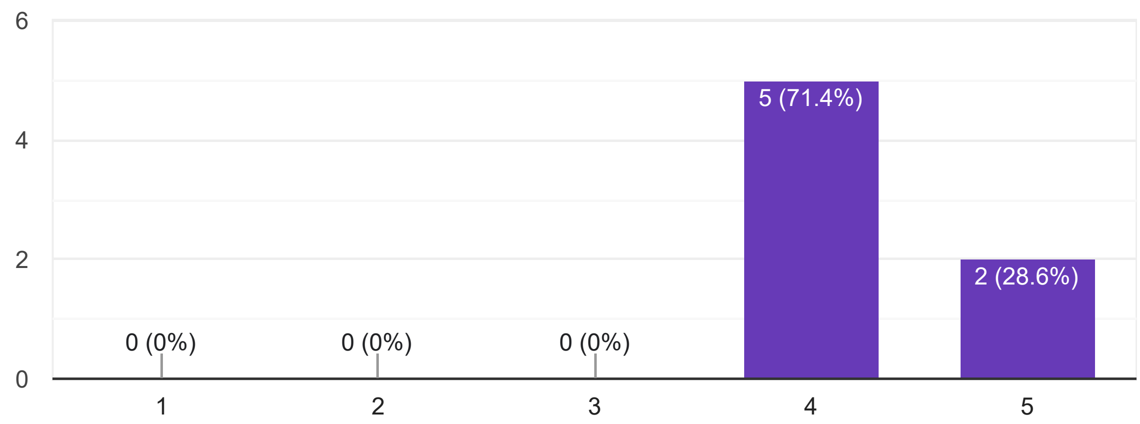
7 responses



(2) ينوع اساليب وطرائق التدريس المختلفة داخل المحاضرة.

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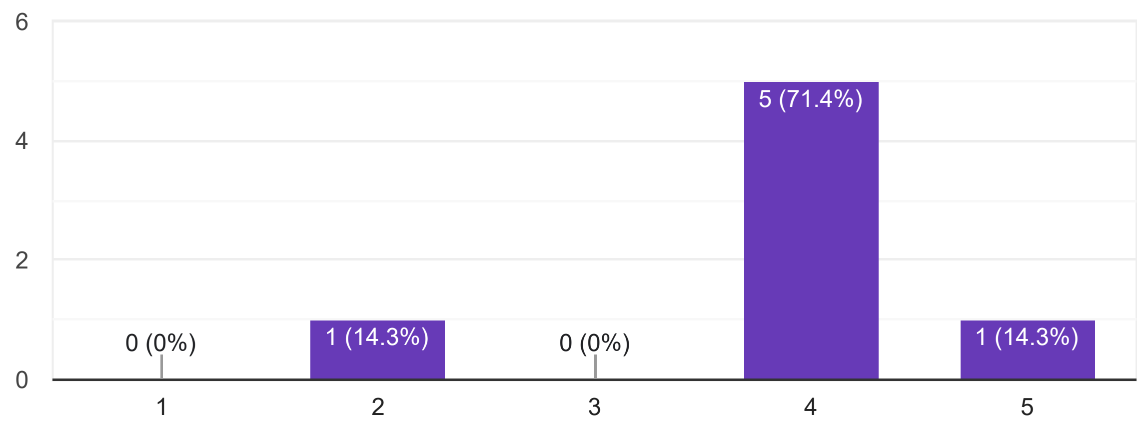
7 responses



يحسن اساليب التعامل مع الطلبة ويراعي الفروق الفردية (3)

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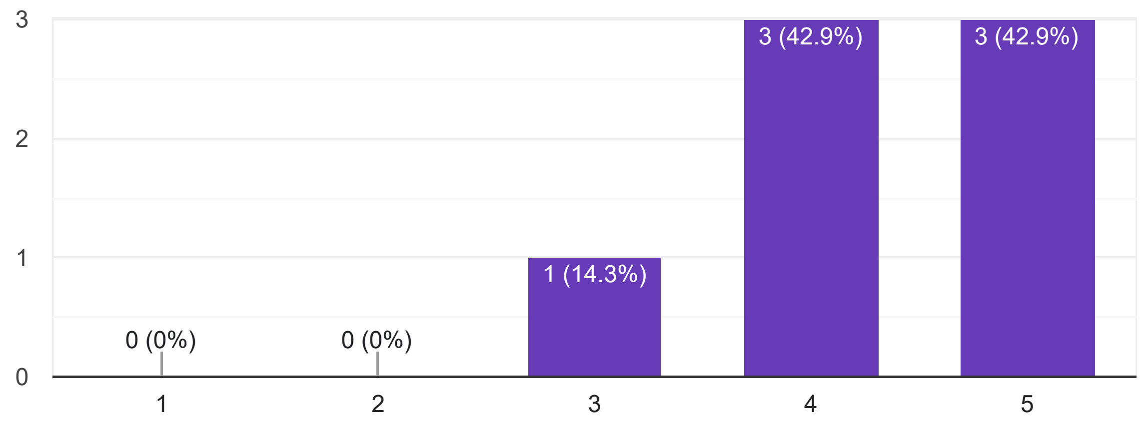
7 responses



يشجع وينمي التعلم الذاتي عند الطلبة (4)

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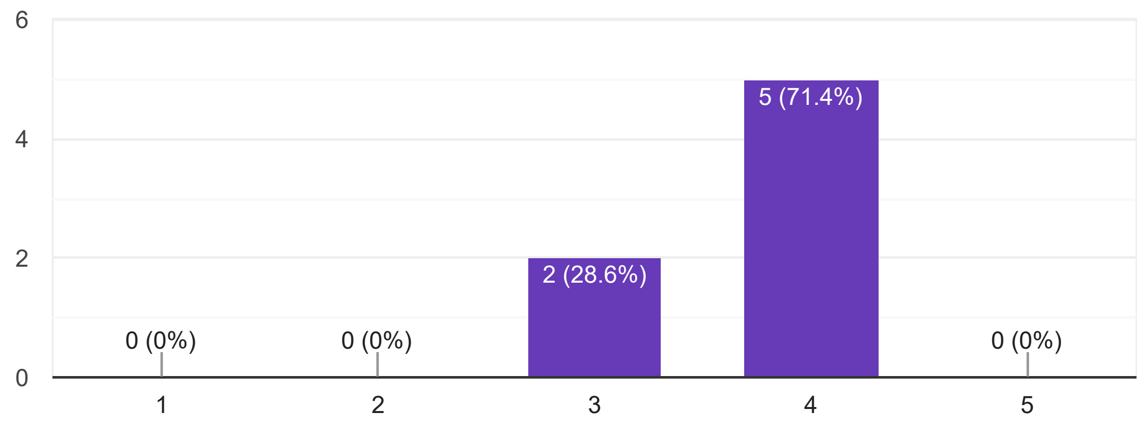
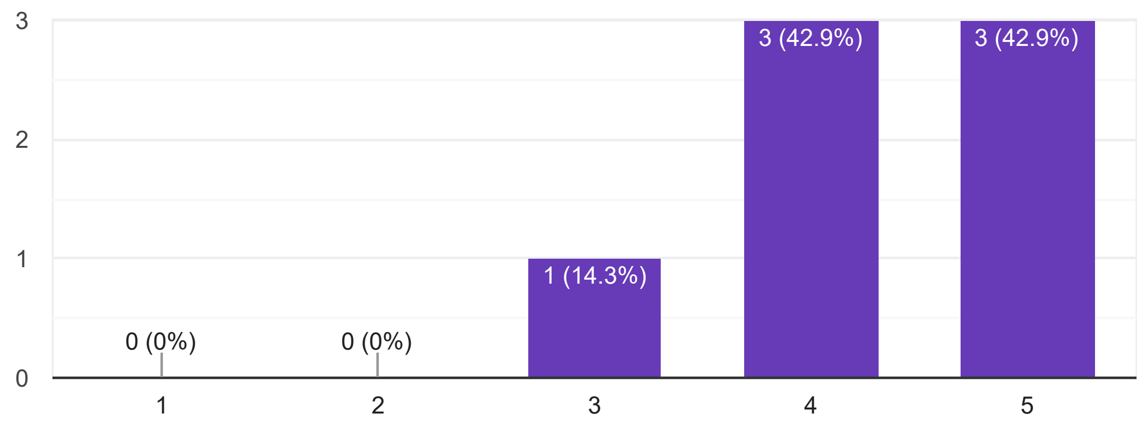
7 responses



يستثمر الوقت داخل المحاضرة في اثراء المادة العلمية (5)

Copy

7 responses



يستخدم وسائل تقليدية والكترونية متنوعة في الاختبارات والتقييم (6)

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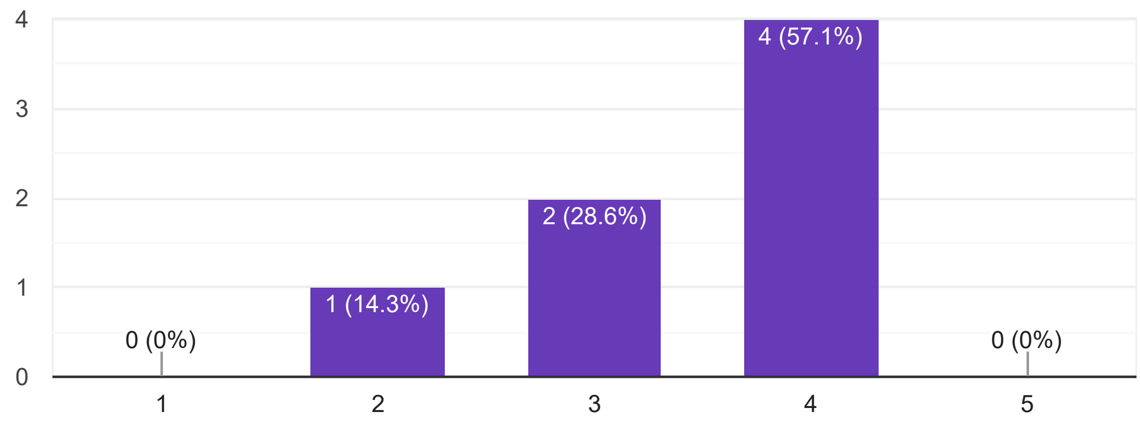
7 responses



يوفر انشطة تعاونية او تنافسية متنوعة لاثارة دافعية الطلبة (7)

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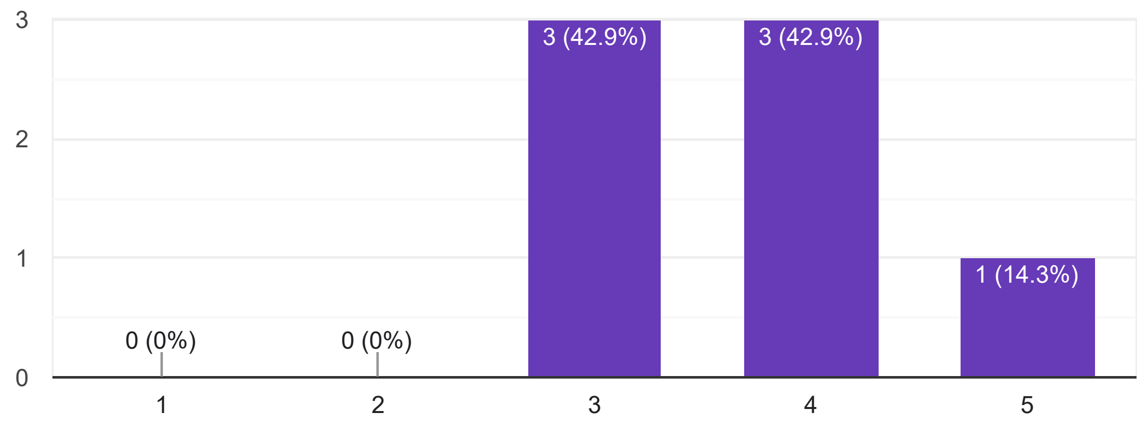
7 responses



يتابع مستوى الطلبة بصورة مستمرة لغرض تعزيزمواطن القوة ومعالجة مواطن الضعف لديهم (8)

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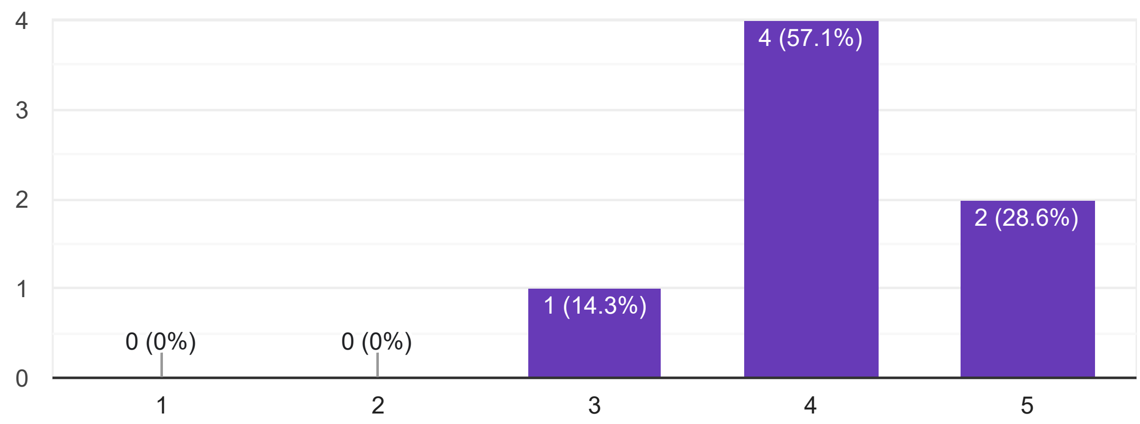
7 responses



(9) يناقش اجابات الطلبة ويرد على استفساراتهم بمرونة لخلق بيئة تعليمية امنة

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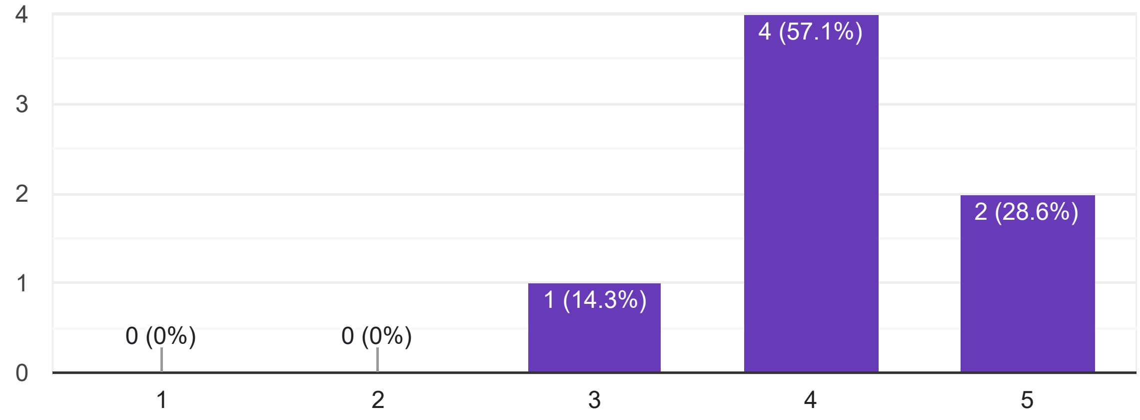
7 responses



(10) ينمي الاتجاهات والعادات والاخلاق الحميدة لدى الطلبة

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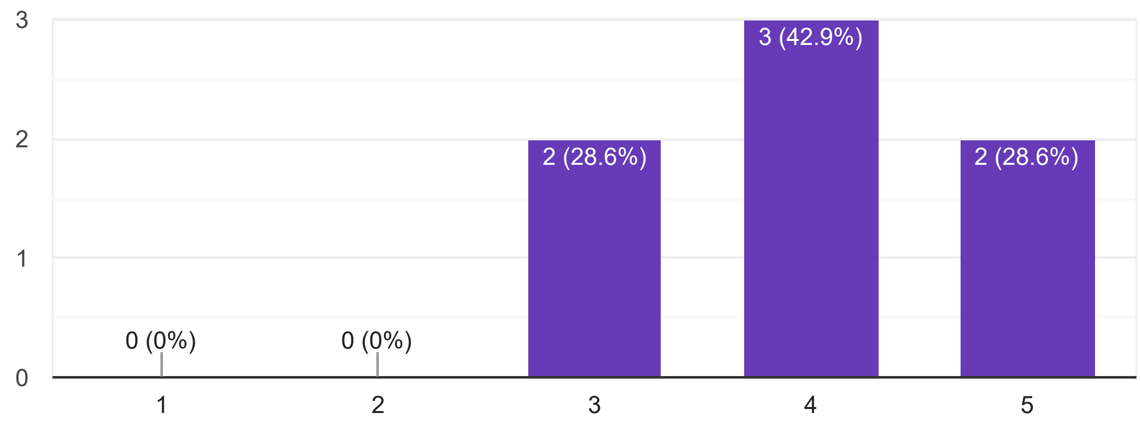
7 responses



الأستبيان حول التدريسي: (م.م. حسان)

(1) يمهد للدرس ويراعي التسلسل في عرض المادة بطريقة منطقية ومشوقة.

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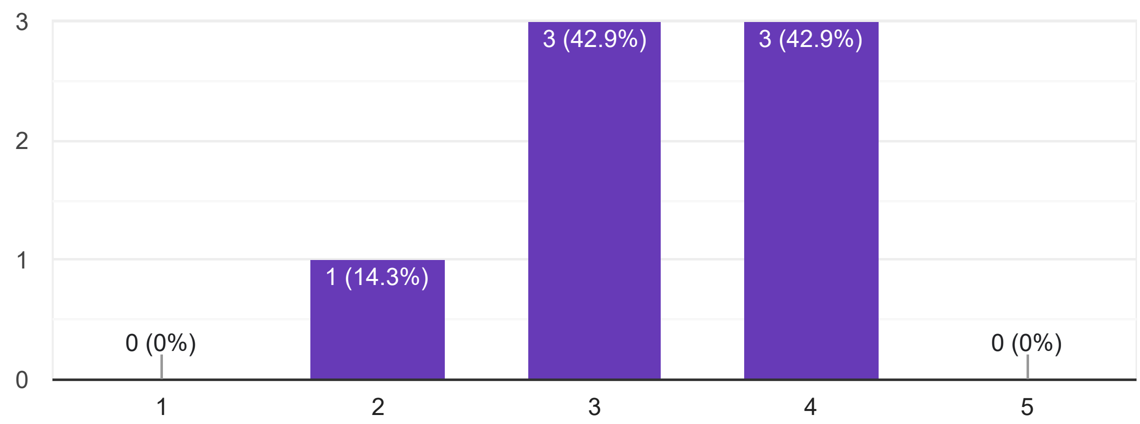
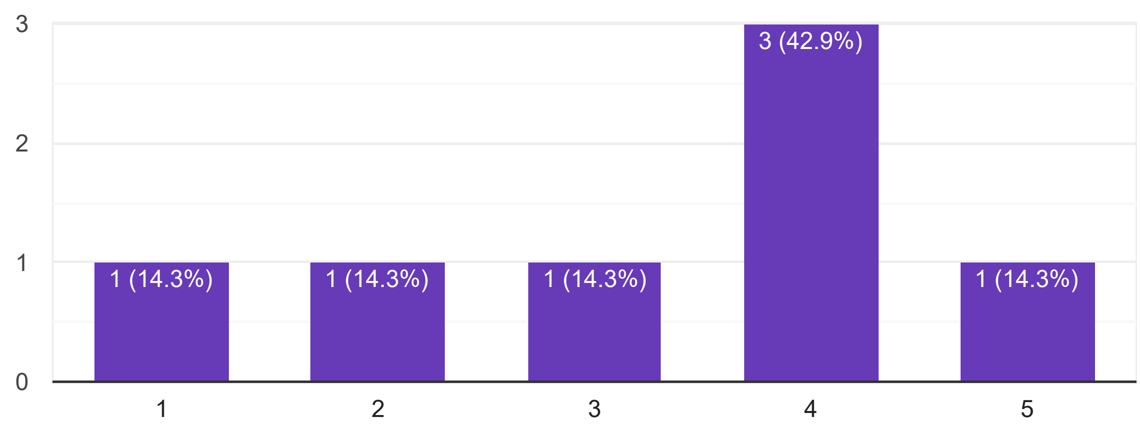
7 responses



(2) ينوع اساليب وطرائق التدريس المختلفة داخل المحاضرة.

Copy

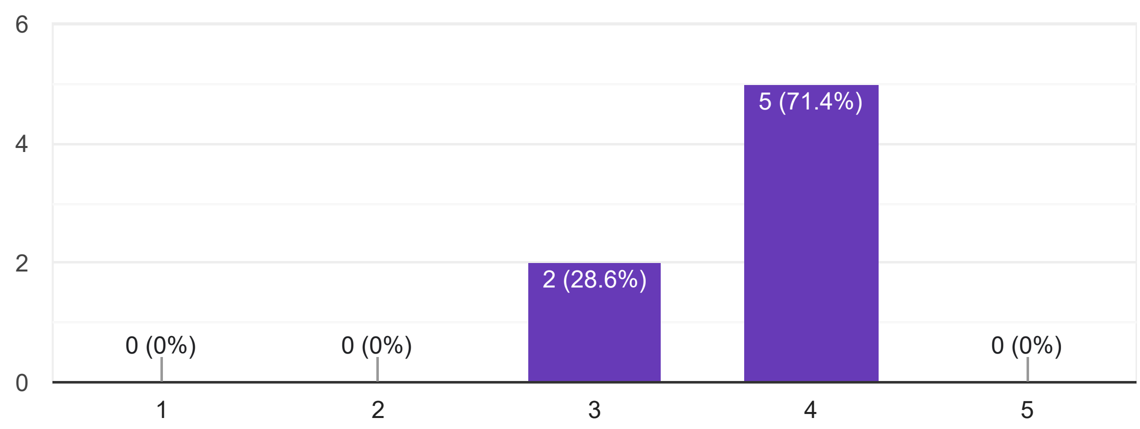
7 responses



(3) يحسن اساليب التعامل مع الطلبة ويراعي الفروق الفردية

Copy

7 responses



(4) يشجع وينمي التعلم الذاتي عند الطلبة

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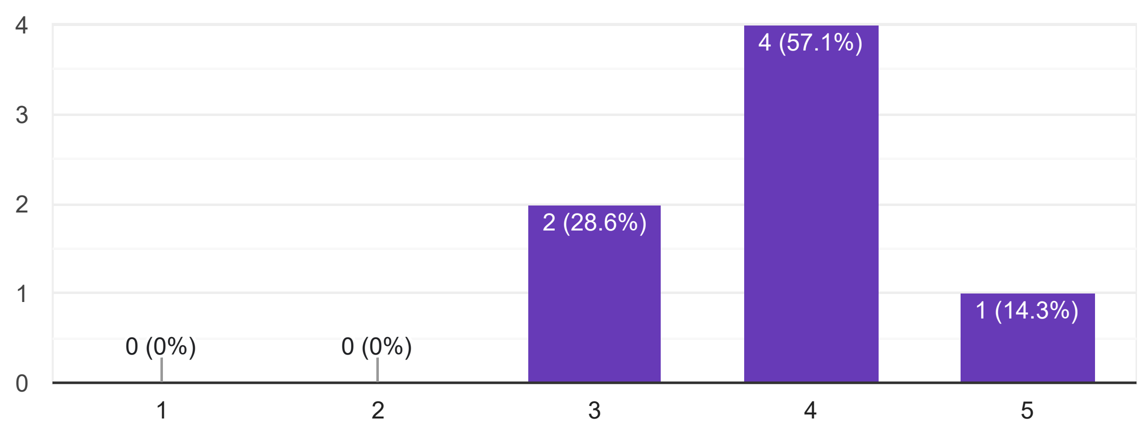
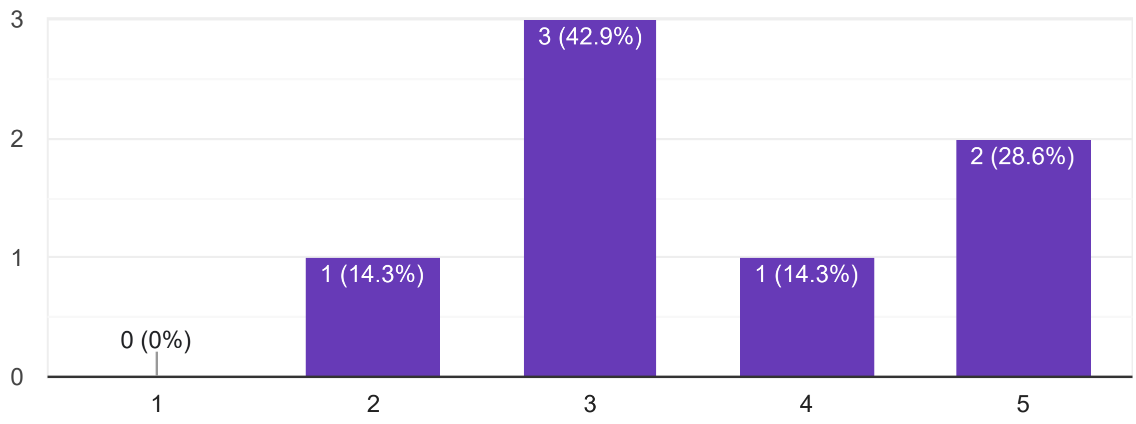
7 responses



يستثمر الوقت داخل المحاضرة في اثراء المادة العلمية (5)

Copy

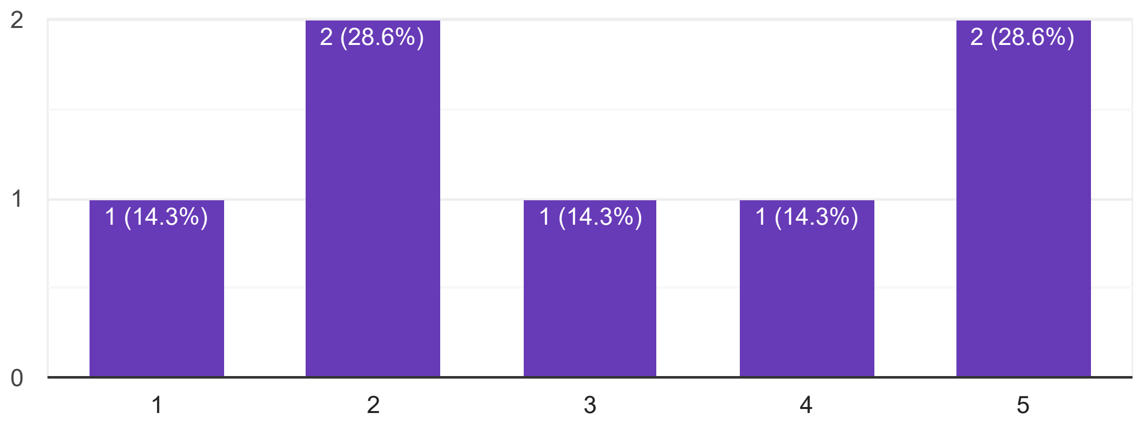
7 responses



يستخدم وسائل تقليدية والكترونية متنوعة في الاختبارات والتقييم (6)

Copy

7 responses



يوفر انشطة تعاونية او تنافسية متنوعة لاثارة دافعية الطلبة (7)

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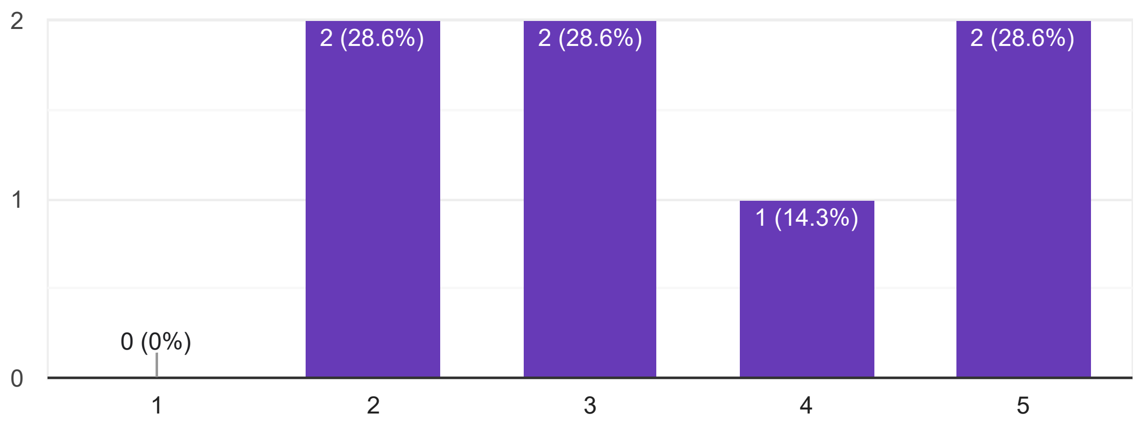
7 responses



(8) يتابع مستوى الطلبة بصورة مستمرة لغرض تعزيزمواطن القوة ومعالجة مواطن الضعف لديهم

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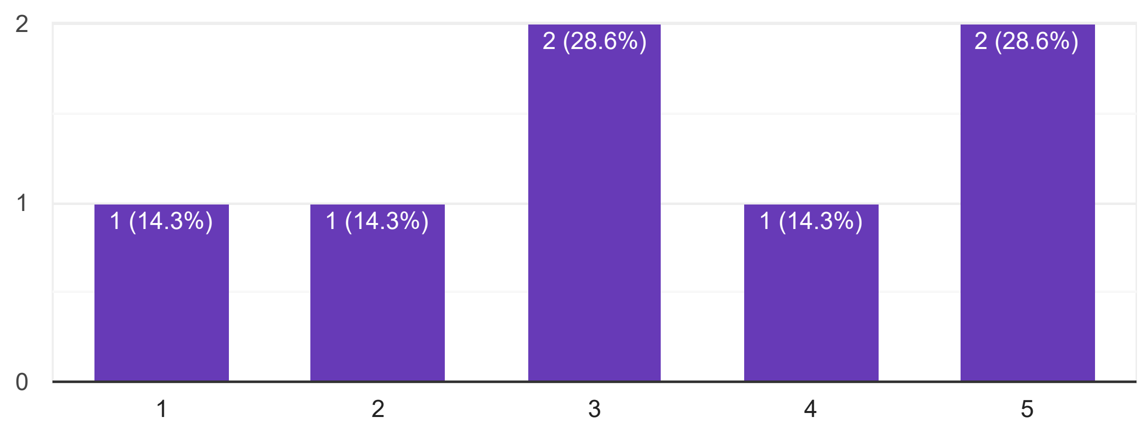
7 responses



(9) يناقش اجابات الطلبة ويرد على استفساراتهم بمرونة لخلق بيئة تعليمية امنة

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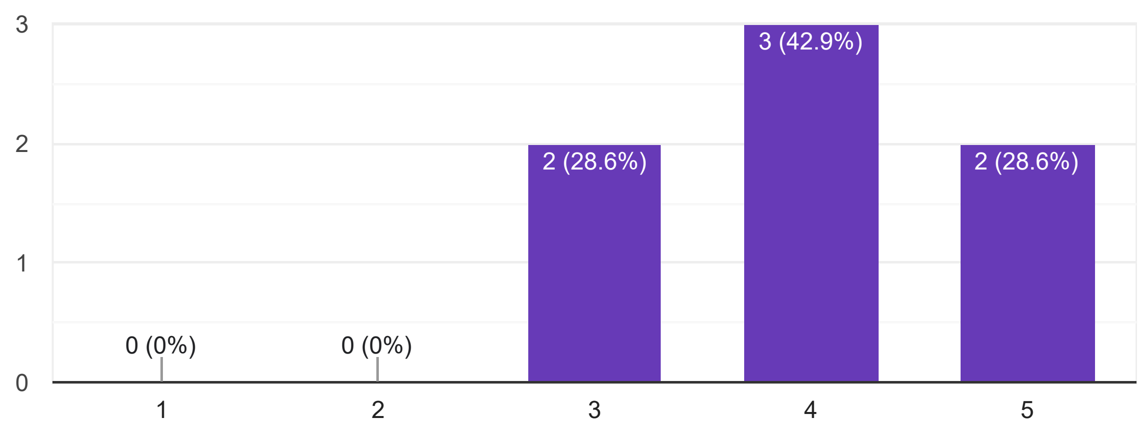

(10) ينمي الاتجاهات والعادات والاخلاق الحميدة لدى الطلبة

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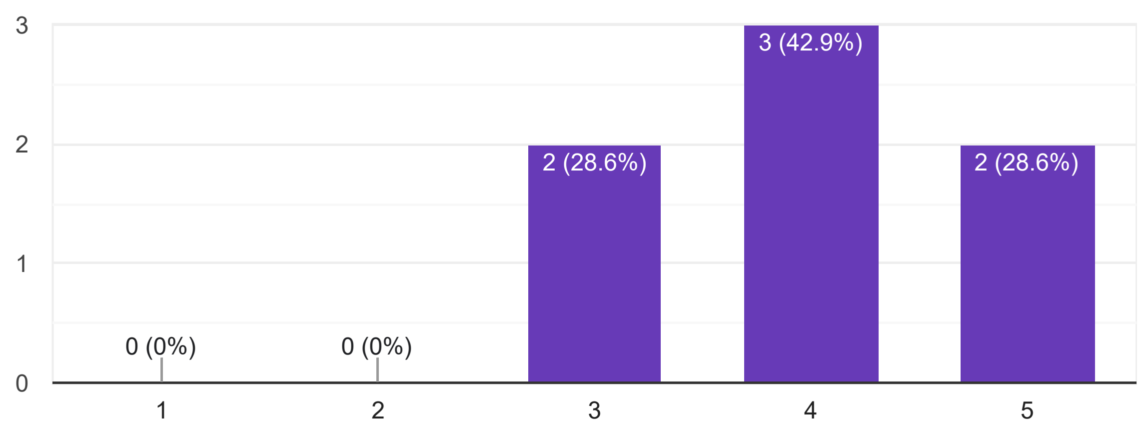


شكراً لكم

المعيار الخامس: الطلبة

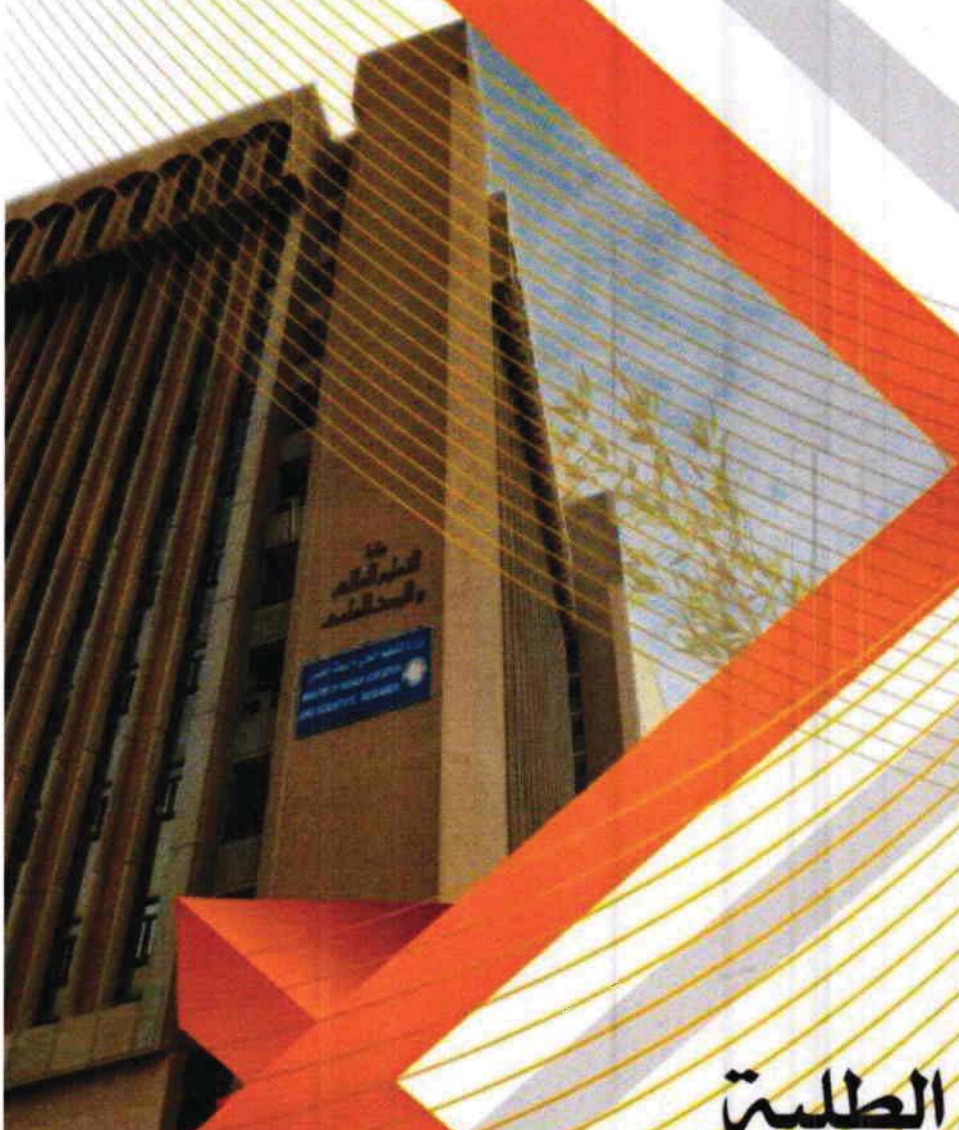
5-1) قبول وتسجيل الطلبة:

1-5) متطلبات القبول واجراءات التسجيل:

1- أصل وثيقة الدراسة الاعدادية المعززة بتصديق المديرية العامة للتربية في المحافظة.
2- كفالة ضامنة على وفق نوذج من قسم الشؤون القانونية في الكلية.
3- نسخة ملونة من (شهادة الجنسية، وهوية الاحوال المدنية العراقية، أو البطاقة الوطنية الموحدة).
4- صور حديثة عدد (3).
5- إستمارة الفحص الطبي.
6- وصل التسجيل.
7- تعتمد نتائج القبول المعلنة على الموقع الالكتروني الرسمي للجامعة ويعد الاعلان إشعارا رسميا الى القسم العلمي للبدء بتسجيل الطلبة ويعد يوم الدوام التالي لاعلان النتائج على الموقع هو اليوم الرسمي لبدء التسجيل. على أن يتم التسجيل في القسم المقبول فيه الطالب خلال مدة (15) يوم دوام إبتداءا من تأريخ بدء التسجيل.
8- يمنح الطلبة الذين لم تظهر أسمائهم عند اعلان نتائج القبول المباشر لأي سبب من الاسباب مدة (10) أيام دوام من تأريخ ظهور نتائج القبول للاعتراض كما يحق للطالب الاعتراض على نتيجة قبوله.
9- يجب أن يسجل الطالب في القسم المقبول فيه حتى مع تقديمه للاعتراض وفي حالة ظهور أحقيته بالاعتراض فيتم تعديل قبوله وتتخذ إجراءات التسجيل وفق قبوله الجديد بالاعتماد على كتاب صادر من تسجيل الجامعة ويعاد تسليم المستمسكات المقدمة من قبل الطالب بكتاب رسمي ومحضر تسليم وإستلام بين القسمين وإكمال إجراءات التسجيل وفق الفقرة (1) أعلاه.

الاستاذ الدكتور
مصعب عايد كصب
رئيس قسم الهندسة المدنية

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
دائرة الدراسات والتخطيط والمتابعة



دليل
إجراءات شؤون الطلبة وضوابط القبول وشروطه

للسنة الدراسية
٢٠٢٣ _ ٢٠٢٤

الفصل الأول: شروط وضوابط القبول المركزي في الجامعات العراقية:

أ-١- الشروط العامة للقبول:

يشترط في الطالب الذي يقبل في الجامعات أن يكون:

١. عراقي الجنسية.

٢. حائزا على شهادة الدراسة الإعدادية العراقية معززة بتصديق من المديرية العامة للتربية في المحافظة أو على شهادة تعادلها.

٣. ان يكون الطالب من مواليد ١٩٩٩ صعوداً.

٤. ناجحاً في الفحص الطبي على وفق الشروط الخاصة بكل دراسة، ويتم مطالبة الطلبة المقبولين في الكليات والمعاهد بفحص (CBC) او (Hb-Electrophoreis) في مراكز الفحص المختصة، على ان يكون تقديم الطالب المكفوف (الذي تتوفر فيه الشروط التقديم للدراسات الإنسانية الملائمة) عن طريق القبول المركزي.

٥. متفرغاً للدراسة ولا يجوز الجمع بين الوظيفة والدراسة (في الوقت ذاته) في الكليات والمعاهد الصباحية ويشمل ذلك منتسبي المؤسسات الحكومية كافة ويشترط في استمرارهم بالدراسة الحصول على إجازة دراسية من دوائرهم ابتداءً على وفق التعليمات النافذة، ولا يجوز الجمع بين دراستين أيضاً وفي حال ثبوت خلاف ذلك يكتب إلى الوزارة لإلغاء قبوله، اما فيما يخص الطلبة الذين لديهم قبولين مختلفين لنفس السنة فيخير الطالب بالغاء احدهما.

٦. من خريجي:

أ. السنة الدراسية الحالية.

ب. السنة الدراسية السابقة من غير المقبولين قبولا مركزياً في أية كلية أو معهد ويتم قبولهم ضمن قناة قبول الطلبة من خريجي السنة الدراسية السابقة على وفق الحدود الدنيا لسنة تخرجهم شرط عدم التحاقهم باحدى الدراسات (المسائية، الأهلية، التعليم الحكومي الخاص الصباحي، احدى الكليات التابعة للوقفين، المعاهد التابعة للوزارات الاخرى).

٧. يحق للطلبة الوافدين للسنة الدراسية (٢٠٢٣/٢٠٢٤) التقديم عن طريق البوابة الالكترونية الخاصة بدائرة الدراسات والتخطيط والمتابعة ومن خلال الاستمارة الالكترونية الخاصة بهم ويتم اعتماد التقديم الالكتروني بعد جلب شهادة معادلة مؤقتة من وزارة التربية مديرية التعادل والشهادات، اما بشأن خريجي السنة السابقة فيكون التقديم للقبول عن طريق قسم القبول المركزي شعبة الوافدين.

٨. الطلبة غير العراقيين الحاصلين على شهادة الإعدادية العراقية والمقبولين مركزياً يتم إبلاغهم خطياً بمراجعة قسم القبول المركزي/شعبة الوافدين لبيان إعفائهم أو مطالبتهم بالأجور الدراسية بالعملة الأجنبية بحسب الضوابط الواردة في الفصل السابع من دليل اجراءات شؤون الطلبة وضوابط القبول وشروطه.

أ-٢- الأسس العامة التي يعتمدها نظام القبول المركزي:

يكون ترشيح الطلبة للقبول في الكليات والمعاهد بموجب نظام القبول المركزي المنفذ الكترونيا حسب الأسس الآتية:

١. يقبل الطالب على وفق الاختيارات المثبتة في استمارة التقديم عن طريق البوابة الالكترونية لدائرة الدراسات والتخطيط والمتابعة وعلى أساس المنافسة في المجموع.

٢. يتوجب على الطلبة:

أ. خريجي الفرعين (احيائي، تطبيقي): ملء (٥٠) اختيارا في الاستمارة الالكترونية على ألا يقل عدد المعاهد عن (١٠).

ب. خريجي الفرع الادبي: ملء ما لا يقل عن (٢٥) اختيارا ولغاية (٥٠) اختيار في الاستمارة الالكترونية على ألا يقل عدد المعاهد عن (١٠).

ج. خريجي فرع الفنون: ملء (١٠) اختيارات في الاستمارة الالكترونية على الا يقل عدد المعاهد عن (٢).

٣. إن تقديم الطالب لاستمارة القبول غير ملزم لقبوله وفق الاختيارات المقدمة من قبله بصورة نهائية إذ إن قبوله يعتمد على تنافسه مع بقية الطلبة على وفق الأسس المعمول بها.

٤. يكون التقديم لكلية القانون (الحقوق) مقتصرا على سكنة المحافظة حصراً ولا يحق للطالب التقديم الى الكلية المذكورة في الجامعات التي تقع خارج محافظته.

٥. يكون التقديم الى كليات الهندسة من خلال الاستمارة الالكترونية بحسب الاقسام.

٦. يكون التقديم على قسم اللغة الانكليزية في كليات التربية والتربية للعلوم الانسانية من خلال الاستمارة الالكترونية بحسب القسم.

٧. لأغراض المفاضلة في القبول:

أ. تحتسب نسبة (٨%) من درجة اللغات الأجنبية المضافة وتضاف إلى مجموع الطالب.

ب. تحتسب درجة إضافية على المعدل لخريجي الدور الأول (عدا الطلبة المشمولين بنظام المحاولات).

٨. لا يُعمل بمبدأ دروس المفاضلة إلا في حالة المنافسة على المقاعد الأخيرة في خطة القبول المعتمدة.

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Republic of Iraq
Ministry of Higher Education and Scientific Research

أ-٣- ضوابط تقديم ذوي الشهداء المشمولين بقانوني ٥٧ لسنة ٢٠١٥ و٢ لسنة ٢٠١٦ وتعديله القانون (٢) لسنة ٢٠٢٠:

١. الفئات المشمولة بهذه الضوابط هم كل من:

أ. ذوي شهداء ضحايا جرائم حزب البعث المنحل.

ب. ذوي شهداء الحشد الشعبي.

ج. ذوي ضحايا العمليات الحربية والاخطاء العسكرية والعمليات الإرهابية وللجرحى المشمولين بقانون (٥٧) لسنة ٢٠١٥.

٢. يكون التقديم والقبول للفئات المذكورة في الفقرة (١) أعلاه بنسبة (١٠%) من خطة القبول لكل فئة، ويكون التنافس على المقاعد لكل فئة على حدة.

٣. يتنافس الطلبة للقبول في:

أ- كليات المجموعة الطبية (الطب، طب الاسنان، الصيدلة) بفارق معدل (٥) درجات او اقل من الحد الادنى للقبول في هذه الكليات ضمن القبول المركزي للسنة الدراسية (٢٠٢٣/٢٠٢٤)، على ألا يقل معدل الطالب عن (٩٠%) بدون إضافات.

ب- باقي التخصصات بفارق معدل (٧) درجات او اقل من أدنى معدل يتم قبوله في الكلية او المعهد ضمن القبول المركزي للسنة الدراسية (٢٠٢٣/٢٠٢٤).

٤. اعتماد قبول الطلبة من ذوي الشهداء في الجامعات التقنية بنسبة (٢%) من خريجي الإعداديات للفروع (الاحيائي، التطبيقي، الادبي، الفنون) ونسبة (٨%) لخريجي الاعداديات المهنية.

٥. يحق للطلبة من ذوي الشهداء التقديم على قنوات القبول المباشر وعلى وفق الضوابط المدرجة لكل تخصص شرط الا يكونوا من المستفيدين في السنة السابقة من القبول ضمن قناة ذوي الشهداء في الدراستين المسائية أو الأهلية مع مراعاة ما جاء في الفقرة (٣/ب) اعلاه.

٦. يكون توزيع الطلبة المقبولين ضمن قناة ذوي الشهداء على الاقسام في الكليات المقبولين فيها مركزياً حسب المعدل (وفق ما جاء في الفقرة ٣ أعلاه) والرغبة ويتم التنافس فيما بينهم للقبول في الاقسام على حسب خطة الكلية والنسبة المحددة في الفقرة (٢) اعلاه.

٧. يتم التقديم عن طريق البوابة الكترونية الخاصة بدائرة الدراسات والتخطيط والمتابعة ومن خلال الاستمارة الالكترونية الخاصة بهذه القناة، ويتم اعتماد التقديم الالكتروني للطالب بعد تصديق مؤسسة الشهداء بأن الطالب من المشمولين بأحكام القانون اعلاه.

٨. يلتزم الطالب عند اكمال التقديم الكترونيا بمراجعة مؤسسة الشهداء لإكمال إجراءات المصادقة على التقديم وخلافه يتم قبوله وفق القناة العامة (القبول المركزي).

٩. لا يتم مباشرة الطالب المقبول في الدراسة ضمن قنوات ذوي الشهداء الا بعد جلبه كتاب تأييد من قبل مديريات مؤسسة الشهداء/شعب الرعاية العلمية، وتُعتمد كتأييد نهائي للقبول وتحفظ في ملفة الطالب.

الفصل الرابع: ضوابط وشروط القبول المركزي للقنوات الاخرى

د-١- قبول الطلبة الأوائل على العراق من خريجي فروع الدراسة المهنية (أو ما يعادلها):

١. يشترط في الطالب الذي يقبل في الجامعات العراقية ان يكون:

أ. عراقي الجنسية

ب. حائزا على الدراسة الاعدادية المهنية العراقية معززة بتصديق من المديرية العامة للتعليم المهني في المحافظة.

ج. من مواليد ١٩٩٩ صعوداً.

د. من خريجي السنة الدراسية الحالية.

٢. يتم قبول الطلبة الاوائل على العراق من خريجي الدور الاول حصراً من الاعداديات المهنية للدراسة الصباحية والمسائية في كل اختصاص.

٣. يتم قبولهم في كليات الجامعات التقنية (الدراسة الصباحية) في التخصص المناظر أو القريب وحسب الاقسام.

٤. يسمح لخريجي الفرع الزراعي التقديم للقبول في الكليات التقنية الزراعية وكليات الزراعة في الجامعات وكلية التحسس النائي والجيوفيزيائي واقسام البيئة في كليات العلوم وعلوم الطاقة والبيئة وعلوم البيئة وتقاناتها وكلية علوم الاغذية وحسب الاقسام المناظرة أو القريبة.

٥. يقبل الطالب على وفق الاختيارات المثبتة في استمارة التقديم عن طريق البوابة الالكترونية لدائرة الدراسات والتخطيط والمتابعة وعلى أساس المنافسة في المجموع.

٦. يسمح لخريجي فرع السياحة والفندقة والفرع التجاري/السياحة وادارة الفنادق التقديم للقبول في أقسام السياحة والفندقة في كليات الإدارة والاقتصاد والكليات التقنية الادارية وكليات العلوم السياحية في الجامعات وحسب الاقسام المناظرة أو القريبة.

٧. يتم قبول الطلبة المشمولين بالفقرات اعلاه وفق النسب المبينة في أدناه:

أ. الـ (١٠) الاوائل للتخصصات ذات المخرجات القليلة.

ب. الـ (١٠) الاوائل من خريجي فرع السياحة والفندقة على ألا يقل معدلهم عن ٦٥%.

ج. (٢٥%) الاوائل للفرعين (الزراعي والفنون التطبيقية) على ألا يقل معدلهم عن ٦٥%.

د. (١٥%) الاوائل للفروع (الصناعي والتجاري والحاسبات) على ألا يقل معدلهم عن ٧٠% لفرعي الصناعي والحاسبات و٦٥% للفرع التجاري.

هـ. الـ (١٠) الأوائل على العراق من خريجي اعدادية التمريض على ألا يقل معدلهم عن ٨٥% .

٨. يحق للطلبة الاوائل على العراق من خريجي الفروع المهنية بتعديل الترشيح للسنة الدراسية اللاحقة وحسب الاختصاص المناظر او القريب.

د-٢ قبول الطلبة من خريجي فروع الدراسة المهنية في المعاهد:

١. يحق لخريجي الإعداديات المهنية (للدراستين الصباحية والمسائية) التقديم إلى الجامعات التقنية للنظر في قبولهم في المعاهد التقنية، على أن تحدد نسب قبولهم على وفق متطلبات خطة القبول في الجامعات التقنية وتكون المنافسة بين الطلبة على أساس المعدل الحاصل عليه الطالب في الدراسة الإعدادية، على ألا يقل معدل المتقدم عن ٥٥%، ويتم قبولهم عن طريق لجنة مختصة في الجامعات التقنية مع تزويد الوزارة/دائرة الدراسات والتخطيط والمتابعة بأسماء المتقدمين والمقبولين ومعلوماتهم كافة لأغراض تدقيقية.

٢. يحق للطلبة من خريجي الاعداديات المهنية / فرع التمريض التقديم للقبول في معاهد الجامعات التقنية في التخصصات المناظرة على ألا يقل معدل المتقدم عن (٧٥%) ويتم اعلان قبولهم من قبل اللجنة المختصة في الجامعة التقنية الوسطى ويتم تزويد الوزارة/دائرة الدراسات والتخطيط والمتابعة بأسماء المتقدمين والمقبولين ومعلوماتهم كافة لأغراض التدقيق.

د-٣ قبول الطلبة الـ (١٠%) الأوائل من خريجي المعاهد في الكليات:

١. تحتسب نسبة الـ (١٠%) الأوائل لكل اختصاص على حدة، مع جبر كسر العدد لمصلحة الطالب (مثال: في الاختصاص الذي يكون فيه عدد خريجي الدور الأول (٤٣) طالب يتم ترشيح ٥ طلاب).

٢. يحق للطلبة الـ (١٠%) الاوائل من خريجي معاهد الفنون الجميلة الصباحية والمسائية اكمال دراستهم الجامعية في كليات الفنون الجميلة، الفنون التطبيقية، التربية الاساسية.

٣. يتم استلام بيانات الطلبة المذكورين أعلاه من خلال البوابة الإلكترونية لدائرة الدراسات والتخطيط والمتابعة.

٤. يشمل بنسبة القبول اعلاه خريجو الدور الثاني للحالات التي تم فيها تأجيل امتحانات الدور الأول إلى الدور الثاني لأسباب موجبة حتماً وبحسب ماجاء بالمادة (١٠) من التعليمات الإمتحانية رقم ١٣٤ لسنة ٢٠٠٠ النافذة، على ألا تقل معدلاتهم عن الحد الأدنى للمعدل المقبول في الدور الأول.

٥. يتم قبول خريجي المعاهد الصباحية في الكليات الصباحية وخريجي المعاهد المسائية في الكليات المسائية على وفق التخصصات المناظرة أو القريبة وبما لا يزيد عن (١٠%) من خطة القبول.

٦. الملحق رقم (٨) يتضمن جدولاً للاختصاصات المناظرة في الكليات.

٧. تتم المنافسة بين الـ (١٠%) الأوائل من خريجي التخصصات المماثلة من خلال تحديد التسلسلات (الأوائل، الثواني، الثوالث، وهكذا....) وتتم المنافسة بين التسلسل الواحد بحسب تسلسل رغبات الخريجين ومعدل كل منهم.

٨. يحق لمن تم استبعاده من القبول في الدراسة الصباحية عند المنافسة مع أقرانه وبحسب خطة القبول، التقديم للدراسة المسائية إن توفرت، ويتنافسون مع الطلبة الذين يتقدمون بموجب الفقرة (٢٠) من البند (ج-١) من الفصل الثالث.

٩. يكون قبول الطلبة للسنة الدراسية (٢٠٢٣/٢٠٢٤) من خريجي السنة الدراسية (٢٠٢٢/٢٠٢٣) فقط.

١٠. لا يحق للطالب الجمع بين الدراسة والوظيفة.

١١. في حال انسحاب الطالب لرغبته في التعيين بعد إصدار أوامر القبول، يتم مفاتحة دائرة الدراسات والتخطيط والمتابعة لإلغاء قبوله وحرمانه من التقديم ضمن قنوات القبول لمدة اربع سنوات.

١٢. لا يشمل الطلبة المقبولون ضمن قناة الـ (١٠%) الأوائل على المعاهد بشرط العمر وذلك كون قبولهم في سنة تخرجهم حصراً.

١٣. لا يحق للطالب تغيير جهة قبوله إذا كان قبوله صحيحا وعلى أساس خياراته وتسلسله والمعدل، ولا يحق له تعديل الترشيح في السنة اللاحقة.

١٤. يحق للطلبة في السنوات الدراسية فوق الاولى النقل عن طريق الجامعات وعلى وفق ضوابط انتقال الطلبة الواردة في الفصل الثامن.

١٥. يقبل الطلبة في السنة الدراسية الأولى في الكليات المناظرة مع ملاحظة ما ورد في الملحق (١٢) المتضمن تحديد المرحلة الدراسية دون الحاجة لإجراء المقاصة العلمية، وتحتسب مرتبة النجاح للطالب وفق المادة(١٦/ثالثا) من التعليمات الإمتحانية رقم ١٣٤ لسنة ٢٠٠٠ وتعديلاتها.

د-٤- قبول الموظفين المتميزين:

١. أن يكون المرشح من مواليد سنة ١٩٨٣ فصاعدا.

٢. أن تكون له خدمة فعلية لا تقل عن سنتين لغاية ٢٠٢٣/١٠/١.

٣. يتم ترشيح الموظفين الحاصلين على الشهادة الإعدادية للقبول في المعاهد التقنية وترشيح الموظفين الحاصلين على شهادة الدبلوم الفني للقبول في الكليات المناظرة.

٤. يشترط في الموظف المرشح للقبول في المعاهد التقنية ألا يقل معدله عن (٦٥%) في الدراسة الإعدادية بفروعها (العلمي والأدبي والمهني).

٥. يحق لخريجي المراكز المهنية (مركز المعتصم ومركز الوليد ومركز المعتز) الذين أدوا الامتحانات الوزاري (البكلوريا) حصرا التقديم للقبول في المعاهد التقنية ضمن قناة المتميزين لاعتبار شهادتهم معادلة لشهادة الإعدادية على ألا يقل معدلهم عن (٦٥%).

الفصل السابع: الية تسجيل الطلبة المقبولين في الجامعات :

تسري الضوابط المنصوص عليها في هذا الفصل على قنوات القبول كافة ومختلف أنواع الدراسة.

ز-١- الوثائق المطلوبة للتسجيل وآلية التسجيل:

يقدم الطالب إلى الجهة التي يرشح إليها المستمسكات الآتية:

١. أصل وثيقة الدراسة الإعدادية المعززة بتصديق المديرية العامة للتربية في المحافظة أو أصول الوثائق الأخرى (وبحسب قناة القبول) مصدقة أصوليا في موعد لا يتجاوز ٢٠٢٤/٤/١٨ ويقدم تعهداً خطياً بذلك الى تسجيل الكلية وبخلافه يلغى قبوله.

٢. كفالة ضامنة على وفق نموذج معد من قسم الشؤون القانونية في الجامعة (على أن تتضمن في فقراتها مادة تحمل الطالب مسؤولية المحافظة على ممتلكات الدولة وعدم العبث بها وبعكس ذلك يتحمل الغرامة عن الأضرار الناتجة).

٣. نسخة ملونة عن شهادة الجنسية وهوية الأحوال المدنية العراقية أو البطاقة الوطنية الموحدة.

٤. صور حديثة عدد (٣).

٥. استمارة الفحص الطبي (على وفق نظام اللياقة الصحية رقم ٥ لسنة ١٩٩٢ والضوابط والشروط الخاصة به) مع مراعاة الاتي:

أ. لا يسجل الطالب في حالة عدم تقديم الاستمارة المذكورة مطلقاً.

ب. يجب تسليم أصل الاستمارة ولا تقبل نسخة عنها.

ت. تلاحظ نتيجة الفحص الطبي من الجهة المرشح إليها الطالب مباشرة وفي حال عدم لياقته للدراسة المرشح إليها يفاتح قسم القبول المركزي/ دائرة الدراسات والتخطيط والمتابعة لتعديل ترشيحه على وفق لياقته الصحية.

ث. يحق للطالب استئناف نتيجة الفحص لدى قسم اللجان/اللجنة الاستئنافية في وزارة الصحة عن طريق الجهة المرشح للقبول فيها.

٦. يتعهد الطلبة المقبولين في الدراسة المسائية بأنهم لم يسبق لهم أن تم ترقين قيدهم بسبب الغش أو المحاولة فيه أو العقوبات الانضباطية (مع مراعاة ماجاء في البند (ط-١) من الفصل التاسع).

ز-٢-آلية تسجيل الطالب:

١. تعتمد نتائج القبول المركزي المعلنة على الموقع الإلكتروني الرسمي للوزارة ويعد الإعلان إشعاراً رسميا إلى الكلية/المعهد في الجامعة لبدء تسجيل الطلبة في اليوم التالي لإعلان النتائج وتستمر فترة التسجيل خلال مدة (١٥) يوم عمل ابتداءً من تاريخ بدء التسجيل.

٢. الطلبة الذين لم يظهر لهم ترشيح في نتائج القبول المركزي لأي سبب من الأسباب، يمنحون مدة (١٠) أيام عمل من تاريخ إظهار نتائج القبول للاعتراض، ومدة (١٠) أيام عمل من إصدار أوامر قبولهم لأغراض التسجيل.

٣. يتم تسجيل الطالب في حال تقديمه اعتراض على قبوله ايضا وان كان محقاً يتم تعديل ترشيحه، وتعاد إجراءات تسجيل الطالب على وفق ترشيحه الجديد بالاعتماد على كتاب الوزارة الصادر من دائرة الدراسات والتخطيط والمتابعة/قسم القبول المركزي ويعاد تسليم مستمسكات الطالب المقدمة من قبله بكتاب رسمي ومحضر تسليم واستلام مع الاحتفاظ بنسخة عنها لإكمال إجراءات تسجيله وفقاً للمدة المحددة في الفقرة (٢) اعلاه.

٤. يتم تسجيل الطلبة غير العراقيين المقيمين والمقبولين في الدراسة الصباحية والمسائية مع مراعاة ماجاء في البند(و-٣) من الفصل السادس.

٥. فيما يخص الطلبة المقبولين مركزيا والمتقدمين للقبول في الدراسة المسائية في الجامعات الحكومية أو إلى الجامعات/الكليات الأهلية (للدراستين الصباحية والمسائية) أو للدراسة في جامعات إقليم كردستان:

<u>أ- الطالب الذي لم يستكمل إجراءات التسجيل:</u>

بإمكان الطالب التسجيل في الدراسة (المسائية/الأهلية/الإقليم/التعليم الحكومي الخاص الصباحي/الكليات التابعة للوقفين/المعاهد التابعة للوزارات الاخرى) بشكل مباشر ولايحق له العودة لقبوله المركزي او تعديل الترشيح في السنة اللاحقة.

<u>ب- الطالب المسجل:</u>

١. تقوم الجهة (الكلية/المعهد) التي قبل فيها الطالب مركزياً واستكمل إجراءات التسجيل فيها بما يأتي:

أ. الغاء قبول الطالب بعد تقديمه تأييدا من الكلية/المعهد الذي تقدم للقبول فيه مثبتا فيه رقمه الإمتحاني.

ب. تزويد الجهة التي تقدم لها الطالب بالوثائق وبكتاب رسمي ومحضر تسليم واستلام مع الاحتفاظ بنسخة عنها.

٢. تتولى الجهة التي تقدم لها الطالب استكمال اجراءات صحة الصدور.

٣. لا يسمح للطالب الذي رقن قيده لغرض الالتحاق بالدراسة المسائية أو الأهلية أو جامعات إقليم كردستان أو الكليات التابعة للوقفين <u>بالعودة للدراسة</u> في الكلية/المعهد المقبول فيها مركزيا.

دائرة الدراسات والتخطيط والمتابعة
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Ministry of Higher Education and Scientific Research

ز-٣- حالات التأجيل والرسوب وإلغاء القبول:

١. ملاحظات عامة:

١.إذا كان قبول الطالب خطأ وغير متوافق مع التعليمات والضوابط والشروط فعلى الطالب إبلاغ (الكلية/المعهد) في الجامعة التي قبل فيها عن أي خطأ حاصل في قبوله لكي يعفى من المسؤولية.

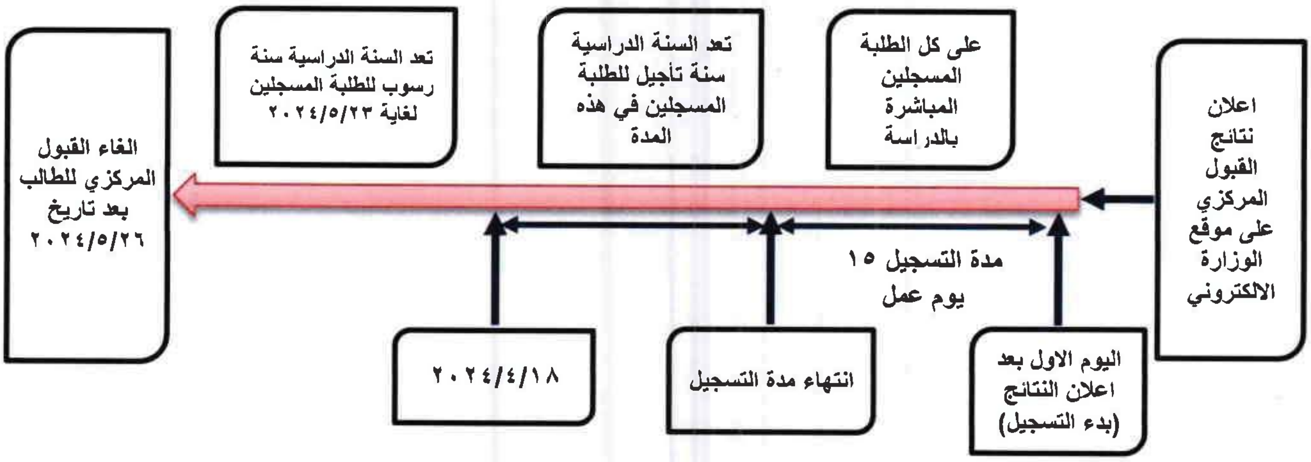
٢.يتم ملاحظة ما ورد في الفقرة (د-٣/١١) المتعلقة بالطلبة المقبولين ضمن قناة الـ١٠% الأوائل على المعاهد وما ورد في الفقرتين د(د-٤/١٢) و(د-٥/٨) المتعلقة بمنح الاجازات الدراسية او تمديدها.

٣.لا تعتمد الطلبات الشخصية لإلغاء القبول ويقتصر على ما مبين في الفقرة (٣) من البند (ز-٢) من هذا الفصل، باستثناء الطالب الراغب في فتح ملف دراسي في الوزارة/دائرة البعثات والعلاقات الثقافية لأغراض اكمال الدراسة خارج العراق.

٢. حالات التأجيل والرسوب:

١. تعد السنة الدراسية سنة تأجيل بحق الطالب في حال تسجيله في (الكلية/المعهد) المرشح إليها بعد إنتهاء المدة المحددة في الفقرة (١) من البند (ز-٢) ولغاية ٢٠٢٤/٤/١٨، وكما في الرسم التوضيحي أدناه.

٢.تعد السنة الدراسية سنة رسوب بحق الطالب في حال تسجيله بعد تاريخ ٢٠٢٤/٤/١٨ ولغاية ٢٠٢٤/٥/٢٣ وكما في الرسم التوضيحي أدناه.



٣.حالات إلغاء القبول:

يلغى قبول الطالب في الحالات الآتية:

١.إذا لم يسجل الطالب في (الكلية/المعهد) المرشح إليها خلال السنة الدراسية نفسها ولغاية ٢٠٢٤/٥/٢٦.

٢.في حال ثبوت عدم توافر أي من الشروط العامة أو الخاصة للقبول في الدراسة.

٣.إذا قدم الطالب معلومات أو وثائق غير صحيحة أو مزورة أو محرفة إلى (الكلية/المعهد) يكتب إلى الوزارة لإلغاء قبوله حتى وإن كان في صفوف متقدمة أو متخرجا من الكلية أو المعهد وتتخذ بحقه الإجراءات القانونية كافة.

٤.إذا لم يقدم الطالب أصل وثيقة الدراسة الإعدادية المعززة بتصديق المديرية العامة للتربية في المحافظة إلى تسجيل الكلية لغاية ٢٠٢٤/٤/١٨ فيما يخص الطلبة المسجلين وفق الفقرة (١) من البند (ز-٢) من هذا الفصل مع مراعاة ان يقوم قسم التسجيل بتبليغ الطالب بما لا يقل عن (٣) ثلاثة مرات وتكون المدة بين تبليغ واخر (من ١٥-٣٠) يوم.

٥. اصدار اوامر بالطلبة الملغي قبولهم فور استحقاقهم وعدم تاخير اصدار تلك الاوامر أكثر من شهر من تاريخ الاستحقاق.

1-5) معدلات القبول في قسم الهندسة المدنية للطلبة في السنوات الخمس الاخيرة:

ت	السنة	معدل القبول
1	2024-2023	89.14
2	2022-2023	89.43
3	2021-2022	88.17
4	2020-2021	89.33
5	2019-2020	74.85

الاستاذ الدكتور

مصعب عايد كصب

رئيس قسم الهندسة المدنية

1-5) مقارنة العدد الفعلي للطلبة المقبولين مقابل العدد المخطط قبوله:

ت	السنة	العدد الفعلي لطلبة المقبولين	العدد المخطط للطلبة	نوع الدراسة
1	2024-2023	74	25	الصباحي
2	2024-2023	67	25	المسائي

الاستاذ الدكتور
مصعب عايد كصب
رئيس قسم الهندسة المدنية

Number of Faculty Members/423 Students for the Academic Year (2023-2024):

Number of Faculty Members							
	Certification		Scientific Rank				Total
	Ph.D.	M.Sc.	Prof.	Asst. Prof.	Lect.	Asst. Lect.	
	25	14	10	12	9	8	39
Percentage to 423 Students	5.91%	3.31%	2.36%	2.84%	2.13%	1.89%	9.22%

الاستاذ الدكتور

مصعب عايد كصب

رئيس قسم الهندسة المدنية

History of Admissions Standards for the Past Five Years:

Academic Year	Min. Score	Number of New Students Enrolled	Transfer Students to the Civil Eng. Department	Transfer Students from the Civil Eng. Department	Number of Graduated Students
2023-2024	89.14	141	10		
2022-2023	89.43	74	6	-	89
2021-2022	88.17	85	12	-	21
2020-2021	89.33	131	2	1	19
2019-2020	74.85	91	4	-	13
2018-2019	87.50	52	-	-	22

الاستاذ الدكتور
مصعب عايد كصب
رئيس قسم الهندسة المدنية

جامعة النهرين
كلية الهندسة
مكتب العميد

العدد: هـ ت/١/١/٥٦٢٢ **التاريخ:** ٢٠٢٣/١١/٢

(استثمار الطاقة النظيفة طريقنا نحو التنمية المستدامة)

امر اداري
م /قبول الطلبة الجدد

استنادا الى كتاب وزارة التعليم العالي والبحث العلمي / دائرة الدراسات والتخطيط والمتابعة /القبول المركزي ذي العدد (ت م ٥/م/٧٩٧٠) في ٢٠٢٣/١٠/٢٩ والمبلغ الينا بكتاب رئاسة الجامعة /قسم التسجيل و شؤون الطلبة – شعبة التسجيل والقبول ذي العدد(١٦٩٤/٢/٢) في ٢٠٢٣/١٠/٢٩ ,تقرر قبول الطلبة الجدد من خريجي الفرع العلمي للدراسة الاعدادية للعام الدراسي ٢٠٢٣/٢٠٢٢ في اقسام كليتنا /السنة الاولى ضمن قنوات القبول المركزي (القناة العامة /ذوي الشهداء) وبموجب القوائم المرفقة طيا:

- قائمة قسم الهندسة المدنية تبدأ بالتسلسل ١-(جعفر اياد كاظم علي)وتنتهي بالتسلسل ٤٢-(احمد شوقي عبود ياسين).
- قائمة قسم الهندسة الالكترونية والاتصالات تبدأبالتسلسل١-(سحر قصي احمد خضير) وتنتهي بالتسلسل ١٥-(لبابه محسن احمد سلمان).
- قائمة قسم الهندسة الميكانيكية وتبدأ بالتسلسل ١-(مرتضى محمد عباس جعفر) وتنتهي بالتسلسل ٢٠-(ياسر احمد نايف ابراهيم).
- قائمة قسم الهندسة الكيمياوية وتبدأبالتسلسل ١-(جنات محمد ارحيم جبوري) وتنتهي بالتسلسل ١٢-(تبارك غالي عبد الواجد)
- قائمة قسم هندسة الحاسوب وتبدأبالتسلسل ١-(محمدباقر ماجد عباس علي) وتنتهي بالتسلسل ١٦-(سمية عقيل ضياء عبد الكريم).
- قائمة قسم هندسة الليزر والالكترونيات البصرية وتبدأبالتسلسل ١- (رند عبد السلام كاظم) وتنتهي بالتسلسل ١٠-(حنين محمد سلمان).
- قائمة قسم هندسة الطب الحياني تبدأ بالتسلسل ١-(رؤيا محمود كاظم حسين)وتنتهي بالتسلسل ١٤-(عثمان عمر هادي صالح).
- قائمة قسم هندسة العمارة وتبدأ بالتسلسل ١-(رسل سلام داود) وتنتهي بالنسلسل ٤٠-(حوراء حيدر جاسم محمد).
- قائمة قسم هندسة الاطراف والمساند الصناعية وتبدأ بالتسلسل ١-(آية سعد كطيف) وتنتهي بالتسلسل ٢١-(حيدر رعد عبد الكريم عبد الباقي).

مع التقدير.

أ.د. جمعة سلمان جياد
العميد
٢ / تشرين الثاني/ ٢٠٢٣ م

نسخة منه الى /

- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية ,للتفضل بالاطلاع مع التقدير.
- جامعة النهرين /قسم شؤون الطلبة والتسجيل /شعبة التسجيل والقبول ...للتفضل بالاطلاع مع التقدير .
- مكتب معاون العميد للشؤون العلمية والدراسات العليا..
- الاقسام العلمية كافة ...لمتابعة دوام الطلبة واداء الامتحانات...مع التقدير.
- شعبة التسجيل وشؤون الطلبة.
- الملف.

رنـــــــــ١١/٣٠ـــــــــ

اسماء الطلبة المقبولين في كليتنا ضمن قناة القبول المركزي للعام الدراسي ٢٠٢٤/٢٠٢٣

قسم الهندسة المدنية

ت	اسم الطالب	الفرع	قناة القبول
١.	جعفر اياد كاظم علي	تطبيقي	المركزي
٢.	حسين علي وحيد رضا	تطبيقي	المركزي
٣.	سعد خالد سعد نجم	تطبيقي	المركزي
٤.	الحسن علاء عبدالزهرة هادي	تطبيقي	المركزي
٥.	عبدالسلام ماهر عبدالرحمن	تطبيقي	المركزي
٦.	احمد طه محمد حسين	تطبيقي	المركزي
٧.	امنة مصطفى مهدي صالح	تطبيقي	المركزي
٨.	طيبة نزار عبدالكريم عبدالرحمن	تطبيقي	المركزي
٩.	حسن منذر غني عبدالمحمد	تطبيقي	المركزي
١٠.	محمدعلي صادق كريم جعفر	تطبيقي	المركزي
١١.	هيثم شهاب احمد صالح	تطبيقي	المركزي
١٢.	نادية احمد قيس محمدصالح	تطبيقي	المركزي
١٣.	محمد قاسم عبدالواحد علك	تطبيقي	المركزي
١٤.	روز راضي عطا عليوي	تطبيقي	المركزي
١٥.	دانية علاء حسين خضير	تطبيقي	المركزي
١٦.	زينب ياسر عبد الصاحب سعيد	تطبيقي	المركزي
١٧.	حسين صباح مهدي محمد	تطبيقي	المركزي
١٨.	بنين حيدر حاكم عبد المنعم	تطبيقي	المركزي
١٩.	احمد حامد عاشور عليل بيضان	تطبيقي	المركزي
٢٠.	فاطمه اسامه قدوري محمد	تطبيقي	المركزي
٢١.	احمد عبدالله كاظم عبدالله	تطبيقي	المركزي
٢٢.	محمد عبدالرزاق عبدالجبار طعمة	تطبيقي	المركزي
٢٣.	حسين علي فواد رشيد	تطبيقي	المركزي
٢٤.	عبد العزيز منذر عليوي طه	تطبيقي	المركزي
٢٥.	يوسف وليد خالد خليل	تطبيقي	المركزي
٢٦.	حسن اياد حميد جاسم	تطبيقي	المركزي
٢٧.	مصطفى حيدر عاشور جليل	تطبيقي	المركزي
٢٨.	ريام اركان فيصل لعيبي	تطبيقي	المركزي
٢٩.	علي حسين علي علوان	تطبيقي	المركزي
٣٠.	مصطفى وسام جليل خلف	تطبيقي	المركزي

٣١. زينب عصام سبتي سلمان	تطبيقي	المركزي
٣٢. سجاد عباس علي حسن	تطبيقي	المركزي
٣٣. ياسر حارث ناجي سريان	تطبيقي	المركزي
٣٤. مريم احمد زكي عبد الغفور	تطبيقي	المركزي
٣٥. محمد يوسف عباس عجب	تطبيقي	المركزي
٣٦. صادق جعفر ناجي ناصر	تطبيقي	المركزي
٣٧. مناسك نوري عباس نعيم	تطبيقي	المركزي
٣٨. ابراهيم حيدر عبدالامير عبدالكريم	تطبيقي	المركزي
٣٩. مصطفى رياض جعوان محمد	تطبيقي	المركزي
٤٠. يوسف اياد نجم عبدالله	تطبيقي	المركزي
٤١. حسين علي ردام نوفل	تطبيقي	المركزي
٤٢. احمد شوقي عبود ياسين	تطبيقي	ذوي الشهداء

جامعة النهرين/كلية الهندسة
معاون العميد
الشؤون العلمية و الطلبة

جامعة النهرين
كلية الهندسة
مكتب العميد

العدد: هـ - ن / ١ / ١ / ٥ ١١٦١٥   التاريخ: ٢١ /١٢/ ٢٠٢٣

(استثمار الطاقة النظيفة طريقنا نحو التنمية المستدامة)

امر اداري

م / قبول طالب ضمن قناة التعليم الحكومي الخاص الصباحي

أستناداً الى دليل أجراءات شؤون الطلبة وضوابط القبول وشروطه للسنة الدراسية (٢٠٢٣-٢٠٢٤) الفصل الرابع (د-١٤) وأشارة الى كتاب وزارة التعليم العالي والبحث العلمي / دائرة الدراسات والتخطيط والمتابعة / القبول المركزي بالعدد(ت م٥/م/٨٧٩٦) في (٢٠٢٣/١١/١٣) والمبلغ الينا بكتاب رئاسة الجامعة / قسم شؤون الطلبة والتسجيل / شعبة التسجيل والقبول بالعدد (١٨٣١/٢/٢) في (٢٠٢٣/١١/١٤) , تقرر قبول الطالب **(محمد عماد عبد الحميد صالح)** في كليتنا / قسم الهندسة المدنية/ السنة الاولى للعام الدراسي الحالي (٢٠٢٣/٢٠٢٤) بموجب قناة التعليم الحكومي الخاص الصباحي .

السيد المقرر / لجنة الدراسات الاولية
لإتخاذ ما يلزم

٣١/١٢

أ.د. جمعة سلمان جياد

العميد

٨ / كانون الاول/ ٢٠٢٣

نسخة منه الى /
- مكتب معاون العميد للشؤون العلمية والدراسات العليا ... مع الاوليات .
- شعبة الحسابات... تفضلكم بأستحصال الاقساط الدراسية الخاصة بالقبول بموجب القناة اعلاه ... مع التقدير .
- قسم الهندسة المدنية ... متابعة دوام الطالب المذكور وغياباته واداء الامتحانات... مع التقدير .
- شعبة التسجيل وشؤون الطلبة .
- الملف .

رنـــــا

Al-Nahrain University \ College of Engineering.
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جامعة النهرين / كلية الهندسة
العراق - بغداد - الجادرية - ص.ب : ٦٤٠٤٠

2023 / 2024

رقم الصفحة: ١

الاسم الرباعي	الجنس	المجموع	نوع القبول	الايميل	رقم الهاتف	المحافظة
الحسن علاء عبدالزهرة هادي	ذ	628	مركزي	alhasanalaa2006@gmail.com	7801611452	بغداد
عبدالسلام ماهر عبدالرحمن عبدالسلام	ذ	621	مركزي	s2l2mgxo@gmail.com	7744240016	ديالى
احمد سعد موسى محمد	ذ	672	تعليم المهني	arbf50795@gmail.com	7715186853	بغداد
جعفر اياد كاظم علي	ذ	626	مركزي	Ga3fory1234567890@gmail.com	7718186178	بغداد
روز راضي عطا عليوي	ا	632	مركزي	rose.radhi@gmail.com	7806190146	بغداد
محمد قاسم عبدالواحد علك	ذ	629	مركزي		7726598623	البصرة
حسين علي وحيد رضا	ذ	640	مركزي	hussingamer66@gmail.com	7717420261	بغداد
امنه مصطفى مهدي صالح	ا	619	مركزي	amnamustafa266@ gmail.com	7727533696	بغداد

احمد عبدالله كاظم عبدالله	ذ	624	مركزي	alkhfajyahmdballh95@gmail.com	7763278922	بغداد
حسين صباح مهدي محمد	ذ	632	مركزي	husseinalhassani416@gmail.com	7730070253	بغداد
بنين حيدر حاكم عبدالمنعم	ا	625	مركزي		7745758402	بغداد
فاطمه اسامه قدوري محمد	ا	630	مركزي	eng.fatimaosama@gmail.com	7728649048	بغداد
زينب عصام سبتي سلمان	ا	625	مركزي	isamsalman@gmail .com	7737986091	بغداد
مصطفى وسام جليل خلف	ذ	625	مركزي	tzad12tt@gmail.com	7805501076	بغداد
علي حسين علي علوان	ذ	634	مركزي	ih04878@gmail.com	7512753796	بغداد
مصطفى حيدر عاشور جليل	ذ	634	مركزي	005mustafa.Alkazaly2005@gmail.cor	7727216318	بغداد

يوسف وليد خالد خليل	ذ	617	مركزي	derbyxtbh@gmail.com	7762243105	بغداد
ريام اركان فيصل لعيبي	ا	632	مركزي	arkanlauibi@yahoo.com	7733423883	بغداد
عبدالعزيز منذر عليوي طه	ذ	630	مركزي	AZOZ07500594001@gmail.com	7500608109	بغداد
حسين علي فؤاد رشيد	ذ	625	مركزي	hussein.2005.ha@gmail.com	7729138540	بغداد
محمد صباح علي جاسم	ذ	598	اعادة ترشيح	075029z@gmail.com	7830864916	الانبار
حسن اياد حميد جاسم	ذ	633	مركزي	hassanaa8.ha@gmail.com	771822826	بغداد
محمد يوسف عباس	ذ	626	مركزي	dodmode817@gmail.com	7716603380	بغداد
صادق جعفر ناجي ناصر	ذ	623	مركزي	sadiqgasser1@gmail.com	7737950719	بغداد
مريم احمد زكي عبدالغفور	ا	643	مركزي	maryamzeki@yahoo.com	7733000226	بغداد
سعد خالد سعد نجم	ذ	623	مركزي	saadalansary200@gmail.com	7729793083	بغداد
ياسر حارث ناجي سريان	ذ	618	مركزي	yaserharth153@gmail.com	7816587884	بغداد
سجاد عباس علي حسن	ذ	619	مركزي	sa1686969@gmail.com	7710089992	بغداد

مناسك نوري عباس نعيم	ا	623	مركزي	parkmanasik@gmail.com	7719084197	بغداد
ابراهيم حيدر عبدالامير	ذ	631	مركزي	ibriham285@gmail.com	7735871822	بغداد
مصطفى حسن جار الله	ذ	627	اعادة ترشيح		7812835345	بغداد
احمد شوقي عبود	ذ	597	مركزي	shawqiahmed35@gmail.com	7717570769	بغداد
مصطفى رياض جعوان	ذ	634	مركزي	bargryacl848@gmail .	7735792361	الانبار
دانيه علاء حسين خضير	ا	625	مركزي	daneaalaa123@gmail.com	7723941859	بغداد
يوسف اياد نجم عبدالله	ذ	625	مركزي	yousefayad267@gmail.com	7764040453	بغداد
عبدالله خالد سلمان علوان	ذ		اعادة ترشيح	abdalobady83@gmail.com	7715458313	بغداد
محمدعلي صادق كريم جعفر	ذ	631	مركزي	aboyadob@gmail.com	7718053903	بغداد
علي محمد رحمان منور	ذ		اعادة ترشيح	ali1661313@gmail.com	7713832173	بغداد
حسين محمد رضا عليوي	ذ	598	الموازي	mmmmm2166@gmail.com	7727496992	بغداد
ايهم عبدالستار احمد نهيدي	ذ	625	المركزي	eng.sattar.civil@gmail.com	7815301283	بغداد
مهيمن زهير صباح كامل	ذ	597	الموازي	memoalqaisy05@gmail.com	7812941078	بغداد
مريم فارس حسن عريبي	ا	601	الموازي	mggg950@gmail.com	7739597930	بغداد
ياسر عمر ماجد عبدالرزاق	ذ	589	الموازي	yasser.omar234@gmail.com	776461386	بغداد

شيماء وعد عبدالله جواد	ا	597	انموازي		7515976766	بغداد
احمد فراس ناظم نور	ذ	595	انموازي	ahmedfirasxsaq@gmail.com	7727133181	بغداد
معتز رياض حميد احمد	ذ	598	انموازي	moataz.izabaedy@gmail.com	78037506784	بغداد
حسين علي ردام نوفل	ذ	625	مركزي		7711805590	بغداد
زهره حسنين فاضل حيدر	ا	626	انموازي		7726794739	بغداد
ضرغام عمار ساهي خليل	ذ	605	انموازي	darghamammar@gmail.com	7510928634	بغداد
محمد عماد عبدالحميد صالح	ذ	588	انموازي	modux1@gmail.com	7813067872	بغداد
انور حيدر طالب حسن	ذ	608	انموازي	anwer19757@gmail.com	7718861778	بغداد
عبدالله عاصم فريد عاصم	ذ	605	انموازي	assimisabdullah@gmail.com	7733033833	بغداد

المعيار الخامس: الطلبة

2-5) السيرة الدراسية للطلبة:

REPUBLIC OF IRAQ
MINSTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH
AL-NAHRAIN UNIVERSITY
COLLEGE OF ENGINEERING

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامــعة النهريــــن
كليــة الهندســـة
قسم الهندسة المدنية
العـدد:هـ .ن. م. د. / ٤٠١٨
التاريخ : ١١/١٠/٢٠٢٣

السيــد العميــــد المحتـــرم

م/سيرة دراسية

تحية طيبة...

اشارة الى هامشكم بتاريخ 2023/10/2 نرافق لكم طياً السيرة الدراسية للطالب (ابو بكر سعد عادل) علماً ان نتيجة الاعتراض المقدمة من قبله مطابقة.

مع التقدير...

المرفقات :
-سيرة دراسية

ا.د.مصعب عايد كصب
رئيس قسم الهندسة المدنية
2023/١٠/١١

نسخة منه الى
- الملف

سيرة دراسية

الطالب ابو بكر سعد عادل

نؤيد لكم ان الطالب ابو **بكر سعد عادل** تم قبوله بهذه الكلية في المرحلة الثانية من العام الدراسي 2020-2021 بعد ان تم عمل مقاصة للمواد التي اداها الطالب في جامعة الشارقة لدراسة البكلوريوس في قسم الهندسة المدنية:

1- في العام الدراسي 2020-2021 – المرحلة الثانية – راسب ب 7 مواد دراسية بعد الدور الثاني (تكنلوجيا الخرسانة ، ميكانيك المواد I ، ميكانيك الموائع I ، ميكانيك المواد II ، ميكانيك الموائع II ،رياضيات IV ، مطالب بمادة تكنلوجيا الورش)

2- في العام الدراسي 2021-2022 – المرحلة الثانية – ناجح مع تحميل مادتين بالاضافة الى عدم استيفاء تكنلوجيا الورش (تكنلوجيا الخرسانة ، ميكانيك الموائع I ، مطالب بمادة تكنلوجيا الورش)

3- في العام الدراسي 2022-2023 – المرحلة الثالثة - راسب ب4 مواد دراسية بعد الدور الثاني (رياضيات هندسية I ، تصميم الخرسانة المسلحة I ، رياضيات هندسية II ، تصميم الخرسانة المسلحة II)

أ.د. مصعب عايد كصب

رئيس القسم

٩/١/ ٢٠٢٤

قسم الهندسة المدنية

م/ سيرة دراسية

ندرج لكم درجات الطالب (ابو بكر سعد عادل) الذي تم قبوله في العام الدراسي 2019-2020 في المرحلة الاولى لدراسة البكلوريوس في قسم الهندسة المدنية

السنة الدراسية 2019-2020 (الفصل الاول والثاني) المرحلة اولى

اسم المادة	الوحدات	الموقف
Eng. Mechanics I	3	مستوفي
Eng. Drawing	2	مستوفي
Calculus	4	مستوفي
Physics	3	مستوفي
Chemistry	2	مستوفي
Human Rights	1	ناجح
English Language I	2	مستوفي
Eng. Graphics	2	ناجح
Computer Programming	2	ناجح
Eng. Mechanics II	2	ناجح
Construction Materials	2	ناجح
Eng. Geology	3	ناجح
Algebra (Linear and Non-linear)	4	ناجح
Arabic Language I	1	مستوفي
Workshop Technology	0	غير مستوفي

السنة الدراسية 2020 – 2021 (الفصل الاول والثاني) المرحلة الثانية

اسم المادة	الوحدات	الموقف
Mathematics III	3	ناجح
Principles of Management	1	ناجح
Computer Fundamental and Programming II	2	ناجح
Geomatics I	3	ناجح

قسم الهندسة المدنية
اللجنة الامتحانية
Civil Engineering Department

ail: ugstudg.dept_off@nahrainuniv.edu.iq http://www.nahrainuniv.edu.iq

English Language II	2	ناجح
Arabic Language II	1	ناجح
Concrete Technology	4	راسب
Mechanics of Materials I	4	راسب
Fluid Mechanics I	4	راسب
Geomatics II	3	ناجح
Mechanics of Materials II	3	راسب
Building Construction	3	ناجح
Democracy	1	ناجح
Mathematics IV	3	راسب
Engineering Statistics	2	ناجح
Fluid Mechanics II	4	راسب
Workshop Technology	0	غير مستوفي

الدراسية 2021 – 2022 (الفصل الاول والثاني) المرحلة الثانية

اسم المادة	الوحدات	الموقف
English Language II	2	مستوفي
Principle of Management	1	مستوفي
Arabic Language II	1	مستوفي
Computer and Programming II	2	مستوفي
Mathematics III	3	مستوفي
Mechanics of Materials I	4	ناجح
Concrete Technology	4	راسب
Fluid Mechanics I	4	راسب
Geomatics I	3	مستوفي
ديمقراطية	1	مستوفي
Mathematics IV	3	ناجح
Eng. Statistics	2	مستوفي
Mechanics of Materials II	3	ناجح
Building Construction	3	مستوفي

قسم الهندسة المدنية
اللجنة الامتحانية
Civil Engineering Department

E-Mail: ugstudg.dept_off@nahrainuniv.edu.iq http://www.nahrainuniv.edu.iq

Fluid Mechanics II	4	ناجح
Geomatics II	3	مستوفي
Workshop Technology	0	غير مستوفي

الدراسية 2022 – 2023 (الفصل الاول والثاني) المرحلة الثالثة

اسم المادة	الوحدات	الموقف
Eng. Math. I	3	راسب
Soil Mech.I	4	ناجح
Theor of struc. I	3	ناجح
RC Design I	3	راسب
Sanit. Eng. I	3	ناجح
Engi. Manegme.& Econ	3	ناجح
Hydrology	2	ناجح
Traffic Eng.	2	ناجح
concrete tech	4	ناجح
Fluid Mech.	4	ناجح
English Language III	2	ناجح
Eng. Mathematics II	3	راسب
Soil Mechanics II	4	ناجح
Theory of Structures II	3	ناجح
R.C. Design II	3	راسب
Sanitary Eng. II	3	ناجح
construction Methods	2	ناجح
Hydraulics	2	ناجح
Workshop Technology	0	مستوفي

قسم الهندسة المدنية
اللجنة الامتحانية
21/11/2023

أ.د. مصعب عايد كصب
رئيس القسم
21/11/2023

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جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
قسم شؤون الدراسات العليا

Republic of Iraq
Ministry of Higher Education
& Scientific Research
Al-Nahrain University
Department of postgraduate affairs

العـــدد : ٢/٧/٦/٣١
التاريخ : ٢٠٢٣/٣/٢٠
٢٠/ ٨ /١٤٤٤هـ

جامعة النهرين
عمادة كلية الهندسة
الوارد : ٥٦٠
التاريخ : ٢٠٢٣/٣/٢٦

أمـــر جامعـــي

م/ منح شهادة ماجستير

بنـــاء على إكمـــال الطالبـة تبارك جاسم سطاي متطلبـــات الدراســـة العليـــا بنجـــاح، وتوصيـــة مجلـــس كليـــة الهندســـة المتخـــذة بجلستــــه السـابعة عشـرة المنعقـدة بتاريـــخ ٢٠٢٣/٢/٢٨، واســـتناداً الى الصلاحيـــات المخولـــة لنـــا، قررنـــا منحـــها شهـــادة ماجستير علوم / الهندسة المدنية بتقدير جيد جداً مع تمتعها بالحقوق والامتيازات التي تخولها إياها هذه الشهادة اعتباراً من تاريخ صدور الامر الجامعي أعلاه.

جامعة النهرين
رئاسة الجامعة
قسم شؤون الدراسات العليا

أ.د. علي عبد العزيز الشاوي
رئيـس الجامعـة
/ اذار/٢٠٢٣م

لجنة الدراسات العليا

نسخة منه الى /
عمادة كلية الهندسة / إشارة الى كتابكم ذي العدد: هـ.ن/١/١/ ١٤٥٢ في ٢٠٢٢/٣/١٢.. مـع التقدير
قسم شؤون الاقسام الداخلية / للتفضل بالاطلاع .. مع التقدير
قسم شؤون الدراسات العليا / شعبة الاوامر الجامعية للحفظ مع الاوليات.. مع التقدير.
الطـالبة المتخـرجة / مع التمنيات بالموفقية والنجاح

علي ٣/١٩

أستمارة السيرة الدراسية لطلبة الدراسات العليا

١- بيانات الطالب:

- الأسم الرباعي:تبارك جاسم سطاي صالح - الجنس: أنثى
- الكلية: الهندسة - القسم:مدني
- التخصص العلمي الدقيق: الهندسة المدنية
- الدراسة: ماجستير - المرحلة الدراسية:بحث
- الموقف الوظيفي:
- رقم وتاريخ الاجازة الدراسية (للموظفين):

جامعة ... كلية الهندسة

القبول:

- السنة الدراسية للقبول: ٢٠٢٠-٢٠٢١
- قناة القبول: امتيازات - فئة القبول: ذوي الشهداء
- رقم وتاريخ الامر الجامعي بالقبول: ر.ج/٢/٣/٨٨٢١ في ٢٠٢٠/١٠/٢٨
- رقم وتاريخ الامر الاداري بالمباشرة:هـ.ن١/١/٢٧٨٣ في٢٠٢٠/١١/١٧
- تاريخ المباشرة بالدراسة (المرحلة التحضيرية):١ /٢٠٢٠/١١
- رقم وتاريخ الامر الأداري بأقرار عنوان الرسالة أو الأطروحة: هـ.ن/٢/١/١٥٣٤ في ٢٠٢١/١١/١٧
- تاريخ المباشرة بمرحلة البحث: ٢٠٢١/١١/١٧

٢- التأجيل الدراسي:

- رقم وتاريخ الأمر الأداري بالتأجيل الاول: ------ - العام الدراسي المؤجل اليه: ------
- رقم وتاريخ الأمر الجامعي بالتأجيل الثاني:------ - العام الدراسي المؤجل اليه:-------

٣- الامتحانات والنتائج:

- نتيجة الفصل الدراسي الأول: ناجحة
- نتيجة الفصل الدراسي الثاني: ناجحة
- نتيجة الدور الثاني:
- معدل السنة التحضيرية: ٨٨,٨٠٨
- نتيجة الامتحان الشامل (لطلبة الدكتوراه):-------
- عدد الوحدات للسنة التحضيرية: ٢٦
- عدد وحدات الرسالة أو الأطروحة: ١٠
- درجة المناقشة: ٩١
- المعدل النهائي: ~~٨٩,٤١٢~~ ٨٩/٤١٧ ٢٠٢٣/٤/٢٥
- التقدير: جيد جداً

٤- التمديدات:

- رقم وتاريخ الامر الاداري بالتمديد الاول:هـ.ن/١/١/١٧٧٣في٢٠٢٢/١٠/٢٤من٢٠٢٢/١١/١الى٢٠٢٣/٥/١
- رقم وتاريخ الامر جامعي بالتمديد الثاني:من: / / ٢٠ الى: / / ٢٠
- رقم وتاريخ الأمر الجامعي بالتمديد الاستثنائي:من: / / ٢٠ الى: / / ٢٠

٥- **ترقين القيد والاعادة الى مقاعد الدراسة:**

- رقم وتاريخ الامر الجامعي بترقين القيد (الاول):
- سبب ترقين القيد:
- رقم وتاريخ الامر الجامعي بالأعادة الى مقاعد الدراسة:
- رقم وتاريخ الامر الجامعي بترقين القيد (الثاني):
- سبب ترقين القيد:

٦- **تسليم الرسالة أو الأطروحة:**

- تاريخ التسليم الاولي للقسم العلمي: ٢٠٢٢/١١/٨

٧- **التسليم والأشراف والمناقشة:**

- أسم المشرف الاول ولقبه العلمي: أ.م.د.ليث خالد كامل - التخصص الدقيق: إنشاءات
- أسم المشرف الثاني ولقبه العلمي: - التخصص الدقيق:
- رقم وتاريخ أمر الأشراف: هـ.ن/١/٢/١٥٣٤ في ٢٠٢١/١١/١٧
- أسم المقوم العلمي الاول ولقبه العلمي: الأستاذ الدكتور احمد عبد الله منصور
- أسم المقوم العلمي الثاني ولقبه العلمي: الأستاذ المساعد الدكتور عبد القادر نهاد نوري
- أسم المقوم اللغوي ولقبه العلمي: المدرس الدكتور احمد عبد الحافظ مصطفى
- رقم وتاريخ الأمر الاداري بتشكيل لجنة المناقشة:هـ.ن/١/٢/٤٥ في ٢٠٢٣/١/١٦
- تاريخ المناقشة: الاحد ٢٠٢٣/١/٢٩
- عنوان الرسالة أو الأطروحة : Low-Cycle Fatigue Shear Performance of Double-Skin Composite Construction with Through-Depth Connectors
- أداء الكلال واطىء الدورات للقص في المنشآت المركبة ثنائية القشرة المزودة بروابط نافذة خلال العمق
- تاريخ تسليم الرسالة بصيغتها النهائية: ٢٠٢٣/٢/٥

التواقيع

وختم الكلية / المعهد

جامعة النهرين
كلية الهندسة

منظم الاستمارة

م.ر.مهندسين نادية محمود احمد

مقرر القسم

م.دعاء عبد الرزاق فالح

رئيس القسم

ا. د.مصعب عايد كصب

معاون العميد للشؤون العلمية

أ.م.د.نصير عبود عيسى الحبوبي

أ.د. باسم عبيد حسن
العميد

٢٠٢٢/١٢/١٤

العميد

أ.د.باسم عبيد حسن

٢٠٢٢/١٢/١٤

خ-٥- استمارة السيرة الدراسية:

الجامعة: سيرة دراسية تفصيلية التاريخ: / /

الكلية/معهد:

السيرة الدراسية

اسم الطالب		الجامعة/الكلية/المعهد		
سنة القبول		قناة القبول:	كتاب القبول (الوزاري)	

ت	السنة الدراسية	الصف	حالة الطالب للسنة الدراسية	احتساب السقف الزمني	الملاحظات	الأوامر
١						
٢						
٣						
٤						
٥						
٦						
٧						
٨						
٩						
١٠						
١١						
١٢						

حالة الطالب للسنة الدراسية	ناجح، ناجح بالعبور، راسب، راسب بالغياب، راسب بالغش، مؤجل،....
احتساب السقف الزمني	لا تحتسب سنوات التأجيل وعدم الرسوب ضمن السقف الزمني للدراسة للمقبولين بعد ٢٠٠٣
الملاحظات	تؤشر حالات الانتقال والاستضافة وترقين القيد وأسبابه والتأجيل الأول والثاني والثالث وأي ملاحظة أخرى
الأوامر	تدرج الأوامر الوزارية/ الجامعية/ الادارية ذات الصلة بحالة الطالب للسنة الدراسية

منظم السيرة الدراسية مدير التسجيل معاون العميد لشؤون الطلبة

تم تدقيق السيرة الدراسية من قبلي وأصادق على صحتها

المعيار الخامس: الطلبة

5-3) ضوابط انتقال الطلبة والمقاصة:

جامعة النهرين
قسم التسجيل وشؤون الطلبة
شعبة التسجيل والقبول

العدد: ٢/٢/ ١٢٥٩٠

التاريخ: ٢٠٢٣/١٠/١٦

جامعة النهرين
عمادة كلية الهندسة
الواردة: ٥٠٤٤٢
التاريخ: ٢٠٢٣/١٠/١٩

امــــر جامعــي

م/ نقل

استناداً الى الصلاحيات المخولة لنا :

والحاقاً بامرنا الجامعي ذي العدد ١١١١٧/٢/٢ في ٢٠٢٣/٩/١٧ ، واشارة الى ما جاء بكتاب كلية الهندسة بجامعتنا ذي العدد هـ.ن/٥٥٢٥/٢/٢ في ٢٠٢٣/١٠/٨، وأستناداً الى دليل اجراءات شؤون الطلبة وضوابط القبول وشروطه - الفصل الثامن - ضوابط انتقال الطلبة البند (ح-١) للسنة الدراسية ٢٠٢٣/٢٠٢٤، تقرر نقل الطلبة المدرجة اسماؤهم في القائمة المرفقة ربطاً من الجامعات المؤشرة ازاء كل منهم الى الدراسة المناظرة في كلية الهندسة بجامعتنا للسنة الدراسيــة ٢٠٢٣ /٢٠٢٤، على ان يتحملوا كافة تبعات المقاصة العلمية .

المرفقات //

- قائمة باسماء الطلبة تبدأ بالتسلسل (١-موج براء خيري) وتنتهي بالتسلسل (١٥-علي عبد الكريم حسن) .

م / العلم
لدى الدراسة ...

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
٢٠٢٣/١٠/١٥

نسخة منه الى :

- السيد مساعد رئيس الجامعة للشؤون العلمية المحترم ، للتفضل بالاطلاع ، مع التقدير .
- عمادة كلية الهندسة - مكتب السيد العميد المحترم، اشارة الى كتابكم ذي العدد هـ.ن/٥٥٢٥/٢/٢ في ٢٠٢٣/١٠/٨ ، للتفضل بالاطلاع ، مع التقدير .
- رئاسة جامعة سامراء– السيد مساعد رئيس الجامعة للشؤون العلمية المحترم ، للتفضل بالاطلاع ، مع التقدير .
- رئاسة جامعة واسط– السيد مساعد رئيس الجامعة للشؤون العلمية المحترم ، للتفضل بالاطلاع ، مع التقدير .
- رئاسة جامعة بابل– السيد مساعد رئيس الجامعة للشؤون العلمية المحترم ، للتفضل بالاطلاع ، مع التقدير .
- رئاسة جامعة المثنى– السيد مساعد رئيس الجامعة للشؤون العلمية المحترم ، للتفضل بالاطلاع ، مع التقدير .
- رئاسة جامعة ديالى– السيد مساعد رئيس الجامعة للشؤون العلمية المحترم ، للتفضل بالاطلاع ، مع التقدير .
- رئاسة جامعة الانبار– السيد مساعد رئيس الجامعة للشؤون العلمية المحترم ، للتفضل بالاطلاع ، مع التقدير .
- الملفـــــة // للحفظ .

هبة عادل ١٠/١١

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جامعة النهرين /قسم شؤون الطلبة والتسجيل

جامعة النهرين
قسم التسجيل وشؤون الطلبة
شعبة التسجيل والقبول

العدد: ٢/٢/ ١٢٥٩٠
التاريخ: ٢٠٢٣/١٠/٢٦

نقل طلبة (كلية الهندسة بجامعتنا) للسنة الدراسية ٢٠٢٣/٢٠٢٤

ت	اسم الطالب	المرحلة	القسم	الجامعة/ الكلية الاصلية	الجامعة / الكلية المنقول اليها
١	موج براء خيري	الثانية	الهندسة المدنية	جامعة سامراء/ كلية الهندسة	كلية الهندسة/جامعة النهرين
٢	منير حاتم كريم	الثانية	الهندسة المدنية	جامعة المثنى/ كلية الهندسة	كلية الهندسة/جامعة النهرين
٣	عمار فاضل عباس	الثانية	الهندسة المدنية	جامعةالانبار/ كلية الهندسة	كلية الهندسة/جامعة النهرين
٤	عمر مشتاق طالب	الثانية	الهندسة المدنية	جامعة الانبار/ كلية الهندسة	كلية الهندسة/جامعة النهرين
٥	حسام بلال اسماعيل	الثانية	الهندسة المدنية	جامعة سامراء/كلية الهندسة	كلية الهندسة/جامعة النهرين
٦	محمد ثامر عبد الرزاق	عودة الى الاولى بسبب المقاصة العلمية	هندسة العمارة	جامعة واسط/كلية الهندسة	كلية الهندسة/جامعة النهرين
٧	سجاد حسن عبد الواحد	عودة الى الاولى بسبب المقاصة العلمية	هندسة العمارة	جامعة واسط/ كلية الهندسة	كلية الهندسة/جامعة النهرين
٨	طيبة رياض نعيم	عودة الى الاولى بسبب المقاصة العلمية	هندسة العمارة	جامعة واسط/ كلية الهندسة	كلية الهندسة/جامعة النهرين
٩	علي مكي عبد الواحد	عودة الى الاولى بسبب المقاصة العلمية	هندسة العمارة	جامعة سامراء/ كلية الهندسة	كلية الهندسة/جامعة النهرين
١٠	جعفر مصطفى ميرة	عودة الى الاولى بسبب المقاصة العلمية	هندسة العمارة	جامعة واسط/ كلية الهندسة	كلية الهندسة/جامعة النهرين
١١	محمد باقر محمود جواد	الثانية	هندسة الحاسوب	جامعة ديالى/ كلية الهندسة	كلية الهندسة/جامعة النهرين
١٢	ابراهيم محمد عبد الوهاب	الثانية	هندسة الالكترونية واتصالات	جامعة ديالى/ كلية الهندسة	كلية الهندسة/جامعة النهرين
١٣	احمد احسان سعيد	الثانية	هندسة الالكترونية واتصالات	جامعة ديالى/ كلية الهندسة	كلية الهندسة/جامعة النهرين
١٤	عبد الله محمد جاسم	الثانية	هندسة ميكانيكية	جامعة الانبار/ كلية الهندسة	كلية الهندسة/جامعة النهرين
١٥	علي عبد الكريم حسن	الثانية	هندسة الطب الحياتي	جامعة بابل/ كلية الهندسة	كلية الهندسة/جامعة النهرين

Al-Nahrain University \ Department of Registration & Students Affairs
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جامعة النهرين /قسم شؤون الطلبة والتسجيل
العراق - بغداد - الجادرية - ص. ب: ٦٤٠٧٤

جامعة النهرين

كلية الهندسة

مكتب العميد

العدد: هـ ن / ٢ / ١ / ٤٨٨٧ التاريخ: ٢٥ / ١٠ / ٢٠٢٣

(استثمار الطاقة النظيفة طريقنا نحو التنمية المستدامة)

أمر اداري

م / أنتقال طالب

أستناداً الى دليل أجراءات شؤون الطلبة وضوابط القبول وشروطه للسنة الدراسية ٢٠٢٣/ ٢٠٢٤الفصل الثامن (ح-١) وأشارة الى الامر الجامعي بالعدد ١٢٥٩٠/٢/٢ في ٢٠٢٣/١٠/١٦ ، تقررقبول نقل الطالبة (**موج براء خيري**) من جامعة سامراء/ كلية الهندسة / قسم الهندسة المدنية الى الدراسة المناظرة في النهرين /كلية الهندسة على ان يتم اجراء المقاصة العلمية وتحديد المرحلة الدراسية من قبل القسم العلمي .

أ.د. جمعة سلمان جياد

العميد

٢٥ / تشرين الاول / ٢٠٢٣ م

لجنة الدراسات الاولية / لجنة المقاصة العلمية

لاتخاذ ما يلزم وبكل دقة رجاءً

٢٥

نسخة منه الى /

- رئاسة الجامعة / قسم شؤون الطلبة والتسجيل / الامر الجامعي اعلاه ... مع التقدير .
- مكتب معاون العميد للشؤون العلمية والطلبة ... مع الاوليات .
- جامعة سامراء / كلية الهندسة- قسم الهندسةالمدنية... تفضلكم بتزويدنا (بوثيقة الدراسة الاعدادية الاصلية والفحص الطبي الاصلي و البطاقة المدرسية ودرجات السنوات السابقة للطالب) لغرض اكمال اجراءات النقل.. مع التقدير .
- قسم الهندسة المدنية ... اضافة اسم الطالبة في سجلاتكم ومتابعة دوام الطالب المذكور. .
- شعبة التسجيل .
- وحدة الدراسات الاولية .

رنا

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جامعة النهرين / كلية الهندسة

السيد رئيس قسم الهندسة المدنية المحترم

محضر لجنة المقاصة العلمية في قسم الهندسة المدنية

اشارة الى الامر الاداري ذي العدد هـ.ن/4887/1/1 في 2023/10/25 والخاص بنقل دراسة الطالبة (موج براء خيري) من كلية الهندسة /جامعة سامراء/قسم الهندسة المدنية / المرحلة الثانية الى قسمنا .نرفق لكم المواد المطالب بها الطالبة والمواد المستوفية منها بعد تدقيق مقاصتها العلمية وهي كما يلي

	ت	اسم المقرر	عدد الوحدات في قسمنا	عدد الوحدات في القسم المناظر	الملاحظات
المواد المطلوبة	1	الورش	-	-	مطلوب ورش
	2	ميكانيك هندسي I	4	3	مطلوب 1 وحدة
	3	ميكانيك هندسي II	3	لا يوجد	نقص مادة دراسية
	4	حقوق الانسان	1	لا يوجد	نقص مادة دراسية
المواد المستوفية	1	الحاسوب II	2	2	مستوفي في الصف الثاني
		اللغة العربيةII	1	2	مستوفي في الصف الثاني

١٠/٢١

مهندس اقدم
اسراء عبدالقادر عبدالكريم
عضوا ومقررا

م. زاهر نوري محمد تقي
عضوا

ا.عباس جواد عبدالحسين
رئيسا

السيد رئيس قسم الهندسة المدنية المحترم

محضر لجنة المقاصة العلمية في قسم الهندسة المدنية

اشارة الى الامر الاداري ذي العدد هـ.ن/4317/1/1 في 2023/9/21 والخاص بنقل دراسة الطالب (رسول شاكر عزاوي احمد) من كلية الهندسة /جامعة سامراء/قسم الهندسة المدنية / المرحلة الثانية الى قسمنا .نرفق لكم المواد المطالب بها الطالب والمواد المستوفي منها بعد تدقيق مقاصته العلمية وهي كما يلي

	ت	اسم المقرر	عدد الوحدات في قسمنا	عدد الوحدات في القسم المناظر	الملاحظات
المواد المطلوبة	1	الورش	-	-	مطلوب ورش
	2	ميكانيك هندسي I	4	3	مطلوب 1 وحدة
	3	ميكانيك هندسي II	3	لا يوجد	نقص مادة دراسية
	4	حقوق الانسان	1	لا يوجد	نقص مادة دراسية
المواد المستوفية	1	الحاسوب II	2	2	مستوفي في الصف الثاني
		اللغة العربيةII	1	2	مستوفي في الصف الثاني

26/09/2023

م. زاهر نوري محمد تقي　　أ.عباس جواد عبدالحسين

٢٠٢٣/ ٩/٢٦

مهندس اقدم
اسراء عبدالقادر عبدالكريم

٢٠٢٣/٩/٢٦

السيد رئيس قسم الهندسة المدنية المحترم

محضر لجنة المقاصة العلمية في قسم الهندسة المدنية

اشارة الى الامر الاداري ذي العدد هـ.ن/4899/1/1 في 2023/10/25 والخاص بنقل دراسة الطالب (منير حاتم كريم) من كلية الهندسة /جامعة المثنى/قسم الهندسة المدنية / المرحلة الثانية الى قسمنا .بعد الاطلاع على (study plan) الخاص بجامعتنا والخاص بجامعة المثنى بخصوص مادة الميكانيك الهندسي 1 ، تبين ان مجموع عدد الساعات في قسمنا(.theo.+app.+ tut) يساوي (4) ساعات وان المفردات الخاصة بالمادة ضمن الجامعتين اعلاه متقاربة و بدرجة كبيرة جدا ولكن وجود فرق في عدد الوحدات (اربع وحدات ضمن جامعتنا وثلاث وحدات ضمن جامعة المثنى) . وعليه ترى اللجنة امكانية اعتبار المادة مستوفيه من حيث عدد الساعات وكذلك المفردات وبناءا عليه نرفق لكم المواد المطالب بها الطالب والمواد المستوفي منها بعد تدقيق مقاصته العلمية وهي كما يلي

	ت	اسم المقرر	عدد الوحدات في قسمنا	عدد الوحدات في القسم المناظر	الملاحظات
المواد المطلوبة	1	فيزياء	3	لا يوجد	نقص مادة دراسية
	2	كيمياء	2	لايوجد	نقص مادة دراسية
المواد المستوفية	1	الاحصاء الهندسي	2	2	مستوفي في الصف الثاني
	2	الحاسوب II	2	2	مستوفي في الصف الثاني
	3	اللغة العربية II	1		مستوفي في الصف الثاني
	4	ديمقراطية	1	1	مستوفي في الصف الثاني

م.اقدم/اسراء عبدالقادر
عضوا ومقررا

م.زاهر نوري محمد تقي
عضوا

أ. عباس جواد عبد الحسين
رئيسا

السيد رئيس قسم الهندسة المدنية المحترم

محضر لجنة المقاصة العلمية في قسم الهندسة المدنية

اشارة الى الامر الاداري ذي العدد هـ.ن/4901/1/1 في 2023/10/25 والخاص بنقل دراسة الطالب (عمر مشتاق طالب) من كلية الهندسة /جامعة الانبار/قسم الهندسة المدنية / المرحلة الاولى الى قسمنا . بعد الاطلاع على (study plan) الخاص بجامعتنا والخاص بجامعة الانبار بخصوص مادة الميكانيك الهندسي 1 ، تبين ان مجموع عدد الساعات في قسمنا(.theo.+app.+ tut) يساوي (4) ساعات وان المفردات الخاصة بالمادة ضمن الجامعتين اعلاه متقاربة و بدرجة كبيرة جدا ولكن وجود فرق في عدد الوحدات (اربع وحدات ضمن جامعتنا وثلاث وحدات ضمن جامعة الانبار) . وعليه ترى اللجنة امكانية اعتبار المادة مستوفيه من حيث عدد الساعات وكذلك المفردات وبناءا عليه نرفق لكم المواد المطالب بها الطالب والمواد المستوفي منها بعد تدقيق مقاصته العلمية وهي كما يلي

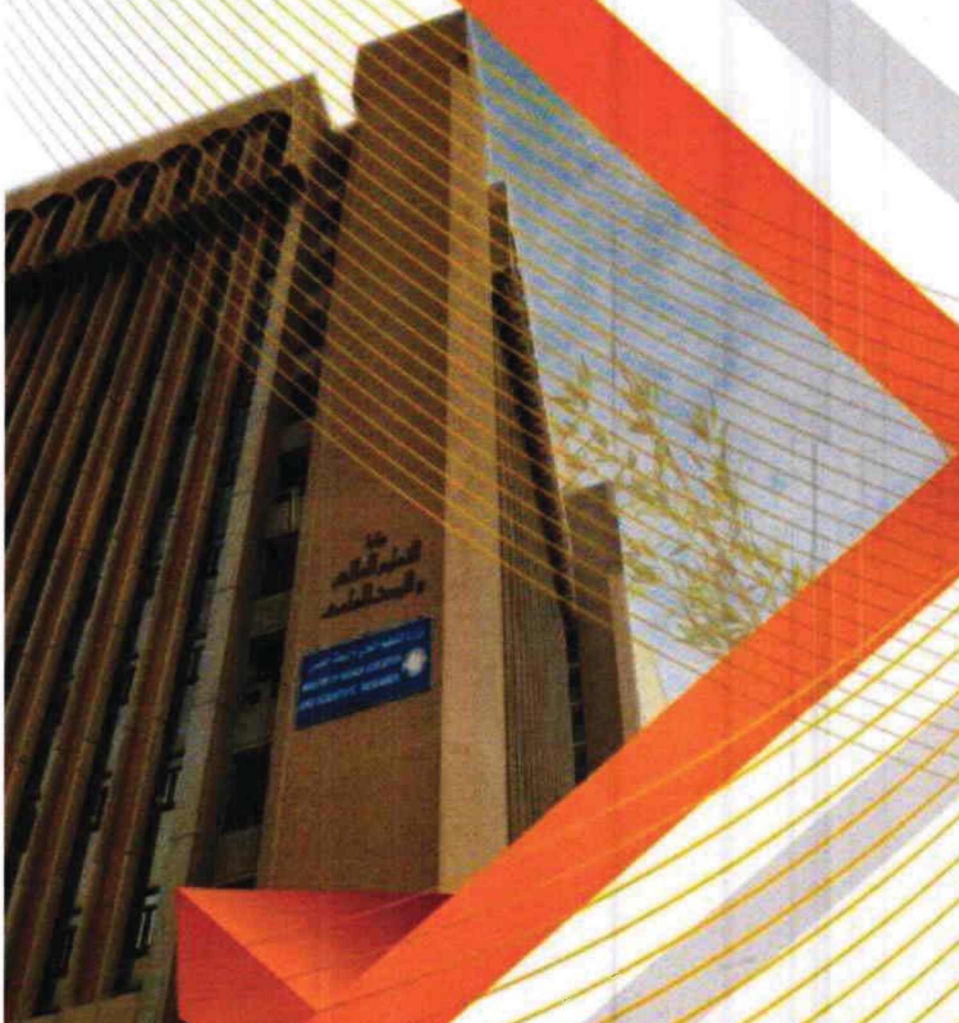
	ت	اسم المقرر	عدد الوحدات في قسمنا	عدد الوحدات في القسم المناظر	الملاحظات
المواد المطلوبة	1	ورش		لايوجد	نقص مادة دراسية
	2	الرسم الهندسيII	2	لايوجد	نقص مادة دراسية
	3	ميكانيك هندسي II	3	لايوجد	نقص مادة دراسية
	4	جيولوجيا الهندسية	2	لايوجد	نقص مادة دراسية
المواد المستوفية	1	ديمقراطية	1	1	مستوفي في الصف الثاني
	2	اللغة العربية II	1	2	مستوفي في الصف الثاني

م.اقدم/اسراء عبدالقادر
عضوا ومقررا

م.زاهر نوري محمد تقي
عضوا

أ. عباس جواد عبد الحسين
رئيسا

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
دائرة الدراسات والتخطيط والمتابعة



دليل
إجراءات شؤون الطلبة
وضوابط القبول وشروطه

للسنة الدراسية
٢٠٢٣ _ ٢٠٢٤

ي-٣- ضوابط نظام العبور للسنة الدراسية (٢٠٢٢/٢٠٢٣):

استمرار العمل بإلغاء تجميد نظام العبور، ويكون وفق الاتي:

١. ينجح الطالب بالعبور إلى السنة الدراسية الأعلى اذا كان مجموع المواد التي رسب بها في الامتحانات النهائية والمواد المستحدثة في صفه الحالي لا يزيد عن مادتين.

٢. لا يحتسب التدريب الصيفي ضمن مواد الرسوب المشار إليها في الفقرة (١) أعلاه، وعلى الطالب الناجح بالعبور استيفاءه في السنة اللاحقة.

٣. يخير الطالب بين الاستفادة من نظام العبور أو اعادة السنة الدراسية بسبب الرسوب ويثبت خياره تحريريا ويحفظ في ملفته، وفي حال عدم مراجعة الطالب لتثبيت خياره لغاية ١٢/٣ يعد راسبا في صفه.

٤. يطالب الطالب المشمول بنظام العبور بامتحانات فصلية لمواد العبور أسوة بالمواد الدراسية لمرحلته، مع استيفاء نصاب الدوام في المواد المستحدثة فقط

٥. يخير الطالب الذي حصل على موافقة بتأجيل دراسته على وفق المادة (٢١) من التعليمات الإمتحانية رقم (١٣٤) لسنة ٢٠٠٠، بين شمول مواد العبور بالتأجيل أو أدائه الامتحانات الخاصة بها ويثبت خياره تحريريا ويحفظ في ملفته.

٦. يعامل الدرس الفصلي على أنه سنوي لأغراض النجاح بالعبور ولا يجوز عبور الطالب في حال رسوبه بأكثر من مادتين فصليتين بأية حال من الأحوال.

٧. يحق للطالب الراسب في السنة الدراسية السابقة بنفس المرحلة الاستفادة من نظام العبور كونه لم يستنفذ المحاولات الامتحانية

٨. يرقن قيد الطالب في حال رسوبه بمواد العبور لكونه استنفد ست محاولات إمتحانية.

ي-٤- الضوابط العامة للمقاصة العلمية:

يتم إجراء المقاصة العلمية عند النقل من الجامعات داخل العراق وخارجه في القسم المنقول إليه الطالب ومن كلية/معهد الطالب الأصلية في حال الموافقة على النقل وفق الآتي:

١. قبول الطالب في المرحلة الدراسية نفسها إذا كانت المواد الدراسية متطابقة بين الكليتين/المعهدين (المنقول منها واليها) أو مختلفة بمادة أو مادتين فقط، مع كون النظام الدراسي متطابق، ويتم مطالبة الطالب بمادة أو مادتين دراسيتين (دواما وامتحانا).

٢. إذا كان النظام الدراسي مختلفا بالشكل الذي لا يمكن معه مطابقة المنهج الدراسي وتقدير الساعات الدراسية المستوفاة واحتساب الدرجة المقابلة، أو كان الاختلاف في المواد الدراسية بين الكليتين/المعهدين أكثر من مادتين منهجيتين عندئذٍ يخيّر الطالب بين التنازل إلى مرحلة/مراحل أدنى، أو إلغاء نقله وإرجاعه إلى كليته/معهده الأصليين.

٣. في حالة اختيار الطالب المنقول التنازل الى مرحلة أدنى نتيجة لمطالبته باكثر من مادتين دراسيتين بعد تطبيق المقاصة العلمية فان هذه السنة/السنوات الدراسية لا تحتسب ضمن السقف الزمني لدراسة الطالب ولكن يتم تاشيرها في حقل الملاحظات عند منح الوثيقة.

٤. يتم إجراء المقاصة خلال مدة أسبوعين من تاريخ استلام الملف الدراسي للطالب وإبلاغ الطالب بنتيجتها تحريريا.

٥. مواد (الديمقراطية وحقوق الإنسان) لا تدخل ضمن حساب المقاصة العلمية ويطالب بها الطالب خلال سنوات الدراسة.

٦. لا تدخل مادة الحاسوب ضمن حساب المقاصة العلمية -باستثناء الطلبة الدارسين في اقسام وكليات الحاسوب-ويطالب بها الطالب خلال سنوات الدراسة.

٧. مادة اللغة العربية لا تدخل ضمن حساب المقاصة العلمية ويطالب بها الطالب خلال سنوات الدراسة باستثناء الطلبة الدراسين في قسم اللغة العربية الكليات ذات التخصص.

٨. مادة اللغة الانكليزية لا تدخل ضمن حساب المقاصة العلمية ويطالب بها الطالب خلال سنوات الدراسة باستثناء الطلبة الدراسين في قسم اللغة الانكليزية بكليات ذات التخصص.

٩. تعامل المواد المستحدثة والملغاة وفقا للتعليمات الإمتحانية ١٣٤ لسنة ٢٠٠٠ وتعديلاتها.

ي-٥- ضوابط تعديل الترشيح للمقبولين مركزيا ضمن القناة العامة في السنة الدراسية (٢٠٢٢/٢٠٢٣):

١. يحق للطلبة المقبولين قبولاً مركزياً أو ضمن قناة القبول المباشر او ضمن قناة النخبة للسنة الدراسية ٢٠٢٢/٢٠٢٣ تعديل ترشيحهم إلى إحدى (الكليات/المعاهد) وفقاً لمجموعهم وبناءً على الحدود الدنيا لـ(الكلية/المعهد) التي يرغبون تعديل الترشيح إليها في سنة تخرجهم عن طريق الاستمارة الإلكترونية المخصصة لهذا الغرض.

٢. الفئات المشمولة هم كل من:

أ. الطلبة الراسبين

ب. الطلبة المؤجلين

ج. الطلبةالحاصلين على معدل ٧٥% فاكثر وتم تغيير ترشيحهم في سنة قبولهم بعد اعتراضهم على القبول في المعاهد التقنية

د. الطلبة المقبولين مركزياً ضمن استمارة السنوات السابقة.

٣. على الطلبة الذين لم يتمكنوا من التسجيل في الكليات/المعاهد المقبولين فيها مركزياً مراجعة أقرب جامعة لسكناهم ليتم تفعيل أرقامهم الامتحانية شرط عدم التحاقهم بإحدى الدراسات (التعليم الحكومي الخاص الصباحي، المسائية، الاهلية) او الكليات التابعة للوقفين او المعاهد التابعة للوزارات الاخرى، ويتم الغاء قبولهم إذا ثبت عكس ذلك.

الفصل الثامن: ضوابط انتقال واستضافة الطلبة للدراستين الصباحية والمسائية:

ح -١- الشروط العامة للانتقال:

١. يحق للطلبة الناجحين الانتقال إلى (الكليات/المعاهد) والأقسام والفروع المناظرة بعد استحصال موافقة (الكلية/المعهد) الأصلي والمراد الانتقال إليها وبحسب الطاقة الاستيعابية.

٢. يحق للطلبة الانتقال بين جامعات المحافظة الواحدة او الكليات المتناظرة ضمن الجامعة الواحدة شرط ان تبعد احدهما عن الاخرى بمقدار لا يقل عن (١٠٠ كم) عدا جامعات محافظة بغداد ويستثنى من ذلك كلية التربية–الطارمية/الجامعة العراقية.

٣. لا ينقل طلبة السنة الدراسية الأولى والمنتهية في الكليات وتعد السنة الدراسية الخامسة في كليات الطب سنة دراسية منتهية لهذا الغرض فقط.

٤. يحق للطلبة المستضافين سنتين فاكثر الانتقال في السنوات الدراسية المنتهية وغير المنتهية شرط نجاحهم في آخر سنة دراسية في الكلية المستضافين فيها حتى وان كانوا ضمن المحافظة الواحدة.

٥. يتم التأكد من إجراءات صحة صدور وثيقة التخرج للدراسة الإعدادية من الكلية المنقول إليها الطالب في حال عدم استكمالها من الكلية المنقول منها لغاية تأريخ نقله.

٦. يسمح للطلبة الجدد المقبولين ضمن كافة قنوات القبول المركزي بالانتقال من الدراسة الصباحية إلى الدراسة المسائية المناظرة وفي القسم المناظر بذات سنة قبولهم وبالنسبة لطلبة المراحل الدراسية كافة فيسمح لهم بالانتقال إلى القسم المناظر على وفق الطاقة الاستيعابية.

٧. تبدأ إجراءات النقل من الكلية الأصلية حصرا وتكون المخاطبات بعدم الممانعة منها إلى الكلية المناظرة على أن ترفق المواد الدراسية التي اجتازها الطالب وعدد الوحدات الدراسية رفقة الطلب وكتاب عدم الممانعة.

٨. يتم ترويج استمارات النقل الكترونياً للطلبة الناجحين في الدور الأول والمكملين في الوقت نفسه ابتداءً من ٧/٩ ولغاية ٩/٣ على ان يتم استكمال إصدار أوامر النقل في موعد أقصاه الاسبوع الاول من شهر تشرين الاول من دون الرجوع إلى الوزارة وبالامكان اصدار اوامر نقل الطلبة الناجحين في الدور الاول قبل الموعد اعلاه.

٩. على الجامعات تزويد الوزارة بنسخ من تلك الأوامر مع جدول تفصيلي بأسماء الطلبة المنقولين الجامعة/الكلية/المعهد المنقولين منها والجامعة/الكلية/المعهد المنقولين إليها ومنتهى الدراسية وفقرة الانتقال المشمول بها الطالب المنقول في موعد أقصاه الاسبوع الاول من شهر كانون الاول لأغراض تدقيقية.

١٠. في حالة عدم وجود طاقة استيعابية في احدى الكليات يتم حسم جميع الطلبات بالرفض خلال مدة أسبوع من تاريخ تقديم الطلب وحسب التوقيتات المبينة في الفقرة (٨) أعلاه، ليتسنى للطالب التقديم على كلية أخرى ووفق الضوابط.

١١. يتم حسم عمل لجان المقاصة العلمية قبل اصدار اوامر النقل والمذكورة في الفقرة (٨) اعلاه، مع مراعاة ما جاء بالبند (ي-٤) من الفصل العاشر.

١٢. يتم إصدار أمر نقل الطالب من كليته الأصلية بعد صدور كتاب عدم ممانعة من النقل من الكلية المراد الانتقال إليها، ولا يجوز تسجيل الطالب في الكلية المراد الانتقال اليها إلا بعد صدور أمر نقله وانفكاكه من كليته الأصلية.

١٣. على الطالب استكمال إجراءات التسجيل في الكلية/المعهد المنقول إليها خلال مدة أسبوع من تاريخ صدور أمر نقله من كليته الأصلية وبخلافه يعد راسبا في صفه.

١٤. يتولى قسم شؤون الطلبة في الجامعتين تدقيق سلامة إجراءات النقل وفقا للضوابط.

١٥. يلاحظ ما ورد في الفقرة (٣) من البند (ب/ط-٣) من الفصل التاسع فيما يخص نقل الطلبة المتضررين من الأعمال الإرهابية والأخطاء العسكرية.

١٦. لا يمكن نقل الطلبة الدارسين في الكليات التابعة للوقفين إلى الأقسام المناظرة في الكليات الحكومية والأهلية التابعة لوزارة التعليم العالي والبحث العلمي وبالعكس، وبالامكان انتقال الطلبة بين فروعها المناظرة فقط وحسب الضوابط.

١٧. تكون اولوية النقل للاناث الى الجامعات/الكليات/المعاهد في محافظة سكناهم بناءً على رغبتهم ووفق الضوابط الواردة في اعلاه.

١٨. يحق للطالب تقديم طلباً بالغاء نقله عن طريق الجامعة المنقول اليها خلال مدة شهر بعد اصدار امر النقل وبخلافه لا يحق له الغاء النقل.

١٩. يحق للطلبة المقبولين على قناة التعليم الحكومي الخاص الصباحي تقديم طلبات النقل إلى الكليات/المعاهد المناظرة في الجامعات الأخرى ضمن نفس القناة مع مراعاة ضوابط الانتقال والاستضافة على ان يتم استحصال نسبة ١٠٠% من الاجور الدراسية موزعة بواقع (٥٠% الى الجامعة المنقول او المستضاف اليها الطالب و٥٠% للجامعة الاصلية لسنة الانتقال حصراً) واستحصال ١٠٠% لبقية سنوات الدراسة الى الجامعة/الكلية المنقول اليها، وفي حالة وجود تخفيض اضافي في الاجور الدراسية في سنة النقل يتم احتساب التخفيض من المبلغ الكلي المحدد ليكون التخفيض مناصفة بين الكليتين.

ح-٢- ضوابط الانتقال لأسباب قاهرة:

الزام الجامعات/الكليات بتنفيذ حالات الانتقال للطلبة الذين تعرضوا للحالات الآتية بصرف النظر عن الطاقة الاستيعابية مع الالتزام ببقية الضوابط الواردة في البند (ح-١) أعلاه على ان تكون خلال السنة الدراسية للانتقال او السنتين الدراسية التي تسبقها:

١. الطالب/الطالبة الذي يتعرض لفقدان أحد الوالدين (في سنة الانتقال نفسها) يحق له الانتقال إلى الدراسة المناظرة في (الكليات/المعاهد) الواقعة في محل سكنه بعد تقديم ما يثبت ذلك.
٢. الطالبة المتزوجة خلال مدة الدراسة يحق لها الانتقال إلى الدراسة المماثلة في محافظة إقامة الزوج بعد تقديم المستمسكات المطلوبة.
٣. الطالبة التي افترقت عن زوجها خلال مدة الدراسة بسبب الطلاق أو الوفاة يحق لها الانتقال إلى دراسة مماثلة في محافظة سكن عائلتها بعد تقديم المستمسكات المطلوبة.
٤. الطالب/الطالبة المصابين بأحد الأمراض المزمنة او الخطيرة او من ذوي الاحتياجات الخاصة بعد تقديم كتاب عدم ممانعة من الجامعتين وتقديم تقرير طبي من اللجان الطبية الدائمة في المحافظة (محافظة السكن او محافظة الجامعة) ومصادق عليها من اللجنة الطبية في كلية الطب في الجامعة.
٥. الطالب المصاب الذي تعرض إلى القصف أو إطلاق نار أو ما شابه ذلك من حوادث وأصيب بعجز دائمي بعد تقديم التقارير الطبية المصدقة مع عرضه على اللجان الطبية المشكلة في كلية الطب بالجامعة.
٦. الطالب المعيل لعائلته لفقدان احد الوالدين يحق له الانتقال الى الدراسة المناظرة الواقعة في محل سكناه بعد تقديم ما يثبت ذلك.
٧. الطلبة من ذوي الشهداء المشمولين بالقانونين (٢) لسنة ٢٠١٦ وتعديله قانون (٢) لسنة ٢٠٢٠ و(٥٧) لسنة ٢٠١٥.
٨. لمجلس الجامعة النظر في الحالات الإنسانية القاهرة الأخرى ولحالات محدودة وفي أضيق الحدود.
٩. لا يشمل طلبة السنتين الدراسيتين الأولى والمنتهية بما ورد في أعلاه مع مراعاة الفقرة (٢) من البند (ح-١).

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ح-٤- ضوابط انتقال الطلبة من كليات ذات حدود قبول أعلى إلى كليات ومعاهد ذات حدود قبول أدنى:

١. يحق لطلبة المعاهد/الكليات الحكومية الانتقال إلى كليات ذات حدود قبول أدنى وبحسب الطاقة الاستيعابية على ان يتولى المعهد/الكلية اجراءات المقاصة العلمية.
٢. يحق للطلبة الانتقال من الكليات في الجامعات الحكومية إلى معاهد ذات حدود قبول أدنى وبحسب الطاقة الاستيعابية.
٣. تحتسب سنوات الرسوب ضمن السقف الزمني للدراسة في حال كان الانتقال إلى كلية أو معهد على ألا تكون لدى الطالب اكثر من سنتين اهدار (سنوات الرسوب والنجاح).
٤. لمجلس الكلية/المعهد النظر في إعفاء الطالب من بعض الموضوعات الدراسية.
٥. يشمل الطلبة المقبولين ضمن قناة التعليم الحكومي الخاص الصباحي بما ورد في الفقرات اعلاه على ان يكون النقل على نفس القناة المقبول عليها.
٦. لن يتم النظر باي طلب يرد بعد تاريخ ٩/١٥.

ح-٥- ضوابط انتقال طلبة المعاهد في الجامعات التقنية:

تخول الجامعات التقنية صلاحية نقل طلبة السنة الدراسية الاولى والثانية من وإلى المعاهد الواقعة في محافظات سكنهم او معاهد المحافظة الواحدة في قضاء السكن بعد استحصال عدم الممانعة من المعهدين الأصلي والمراد النقل إليه وبما يضمن تحقيق الطاقة الاستيعابية مع مراعاة الفقرة (٨) من البند (ح-١).

ح-٦- ضوابط نقل الطلبة أبناء أعضاء الهيئة التدريسية:

يشمل بالضوابط المدرجة في أدناه أبناء أعضاء الهيئة التدريسية (اصحاب الشهادات العليا) من حملة الالقاب العلمية (مدرس مساعد، مدرس، استاذ مساعد، استاذ) وضمن الملاك الدائم للجامعات الحكومية والجامعات والكليات الأهلية التابعة لوزارة التعليم العالي والبحث العلمي، وكذلك ابناء اصحاب الشهادات العليا (الدكتوراه فقط) المنتسبين لوزارة العلوم والتكنولوجيا وابناء اعضاء الهيئة التدريسية لكليتي الامام الكاظم (عليه السلام) للعلوم الاسلامية الجامعة وكلية الامام الاعظم (رحمه الله) حصراً.

١. يحق لأبناء أعضاء الهيئة التدريسية التمتع بأحد الامتيازين في أدناه شرط ألا يتجاوز فرق معدلهم عن الحد الأدنى للقبول في الكلية/القسم المراد الانتقال اليه عن (٥) خمسة درجات لكل مما يلي:
   أ. النقل إلى الدراسة المناظرة في الكليات والمعاهد في محافظة سكناهم.
   ب. اختيار القسم (الفرع) في الكلية/المعهد المقبول فيه مركزيا، ويتم تنفيذ ذلك من قبل الكلية/المعهد، على ان تزود دائرة الدراسات والتخطيط والمتابعة بقوائم المستفيدين لكل جامعة لأغراض تدقيقية.

٢. بالإمكان تسجيل الطالب في الكلية المنقول إليها مباشرةً من دون رجوعه إلى التسجيل في كليته الأصلية ضمن المدة المحددة للنقل.
٣. لايحق للطلبة من أبناء أعضاء الهيئة التدريسية الانتقال بين جامعات المحافظة الواحدة.
٤. تزويد الكلية/المعهد بكتاب التأييد الخاص بعضو الهيئة التدريسية الذي تم في ضوئه نقل الطالب لإجراء صحة الصدور عليه من الكلية/المعهد المنقول اليها الطالب.
٥. يشمل بالفقرات أعلاه الطلبة المقبولون مركزياً (القناة العامة، القبول المباشر، قناة التعليم الحكومي الخاص الصباحي، تعديل الترشيح والسنة السابقة، الطلبة المتميزين الدارسين باللغة الانكليزية، الاوائل من خريجي الدراسة المهنية، الدراسة المسائية، الطلبة الوافدون من أصحاب الشهادات المعادلة).
٦. لا يحق للطلبة المقبولين في الكليات التقنية الهندسية النقل إلى كليات الهندسة وإنما إلى كليات تقنية مناظرة.
٧. يتم النقل بين الكليات المتناظرة عن طريق الاستمارة الإلكترونية المخصصة بهذا الغرض، مع الاخذ بنظر الاعتبار ما يأتي:
أ. يحق للطلبة المقبولين الانتقال إلى الأقسام ذات التخصص المناظر في الجامعة التكنولوجية.
ب. يحق للطلبة المقبولين في اقسام الكليات الهندسية الانتقال الى اقسام كليات الهندسة الأخرى مع مراعاة ماجاء بالفقرة (٢) أعلاه.
ج. يسمح للطلبة المقبولين في كلية التقنيات الإحيائية بالنقل إلى كلية العلوم من دون تحديد القسم في الجامعات التي لا يوجد فيها تقنيات إحيائية.
٨. تنفذ الفقرة (١-ب) انفا في حالة الأقسام التي لها رموز تقديم مستقلة على وفق الآتي:
أ. من الأقسام التي لها رمز تقديم مستقل إلى أقسام الكلية الأصلية (مثال قسم علوم الرياضيات/كلية العلوم إلى قسم الفيزياء بنفس الكلية) عن طريق الجامعة مباشرة ويتم تزويد دائرة الدراسات والتخطيط والمتابعة بقائمة تفصيلية نهائية لتعديل بيانات القبول وفي موعد أقصاه ٢/٢٨.
ب. يتم النقل بين أقسام الجامعة التكنولوجية من الجامعة مباشرة ويتم تزويد دائرة الدراسات والتخطيط والمتابعة بقائمة تفصيلية نهائية لتعديل بيانات القبول وفي موعد أقصاه ٢/٢٨.
ج. لا يجوز نقل أبناء اعضاء الهيئة التدريسية من كلية إلى قسم في الكلية أو في كلية اخرى له رمز تقديم مستقل في حال عدم تطابق التخصص وفق رأي لجنة الخبراء المختصة.
٩. بالإضافة الى ماذكر في أعلاه يجب توفر احد الشرطين ادناه لنقل الطلبة وفق هذه القناة:
أ. حصول التدريسي على تقييم جيد فأعلى خلال السنوات الدراسية الثلاث الاخيرة.

ب. او اشتراك التدريسي في لجنتين وزارية/علمية او إدارية خلال السنة الدراسية او أربعة لجان علمية او ادراية في جامعته.

١٠. يشمل أبناء أعضاء الهيئة التدريسية المقبولين ضمن قناة ذوي الشهداء بكل ما ورد في الفقرات أعلاه.

١١. يقتصر شمول أبناء التدريسيين المتقاعدين والمتوفين بالضوابط أعلاه على حملة اللقب الجامعي (أستاذ او أستاذ مساعد).

ح-٧- ضوابط انتقال الطلبة بين الكليات الحكومية والأهلية:

أ- نقل الطالب الاول من الكليات الأهلية إلى الكليات الحكومية الدراسة الصباحية:

١. ينقل الطالب الاول (الدراسة الصباحية) الناجح بالدور الأول فقط وبتقدير لا يقل عن (جيد جدا) في القسم المعني بالجامعات/الكليات الأهلية في السنة الدراسية الأولى إلى الأقسام المناظرة في الجامعات الحكومية.

٢. يشمل الطالب الاول (الدراسة الصباحية) الناجح بالدور الأول فقط وبتقدير لا يقل عن (جيد جدا) خلال السنة الدراسية الثانية بالامتياز المذكور في الفقرة (١) في أعلاه شرط نجاحه بتقدير لايقل عن (جيد جداً) ايضاً ومن الربع الأول خلال السنة الدراسية الأولى.

٣. يخضع الطالب لإجراءات المقاصة العلمية.

٤. يتم نقل الطلبة المشار إليهم عن طريق الوزارة حصراً/دائرة الدراسات والتخطيط والمتابعة بعد تزويد الطالب بكتاب رسمي من جامعته/كليته الأهلية معنونا إلى الدائرة المذكورة حال إعلان نتائج الدور الأول على أن يحدد القسم والكلية والجامعة التي يرغب الطالب الانتقال إليها ولا يحق للكلية/الجامعة الأهلية مفاتحة الجامعات الرسمية عن طريقها مباشرةً وبخلافه تتحمل المسؤولية القانونية كاملةً.

٥. يتوجب على الجامعات والكليات الأهلية تزويد الطالب بالكتب المشار أليها في الفقرات اعلاه وبخلافه تتحمل المسؤولية القانونية كاملةً.

٦. لا يشمل بهذا الامتياز من كان من الطلبة الموظفين المجازين دراسياً او غير المجازين دراسياً او المقبولين ضمن قناة الموظفين المتميزين والطلبة المقبولين ضمن قناة الـ١٠% الاوائل على المعاهد.

٧. لن يتم النظر بأي طلب يرد بعد تأريخ ٩/١٥.

الفصل الخامس: ضوابط قبول ونقل الطلبة العراقيين الوافدين من خارج العراق:

هـ -١ ضوابط قبول الطلبة الحاصلين على شهادة الإعدادية المعادلة لشهادة الإعدادية العراقية (من المدارس خارج العراق):

١. أن يكون المتقدم للقبول المركزي من مواليد سنة ١٩٩٩ صعوداً ومن خريجي الدراسة الثانوية للفرعين ((احيائي، تطبيقي)، والفرع الادبي) لسنة القبول أو السنة الدراسية السابقة ويتم التقديم من خلال البوابة الإلكترونية.

٢. يسمح لخريجي الدراسة الإعدادية الفرع المهني للسنة الدراسية ٢٠٢٢/٢٠٢٣ والسنة السابقة بالتقديم لقناة القبول المباشر وحسب ضوابط تلك القناة، على ان يكون التقديم عن طريق قسم القبول المركزي/شعبة الوافدين حصرا.

٣. يسمح لخريجي الدراسة الإعدادية الفرع الاسلامي للسنة الدراسية ٢٠٢٢/٢٠٢٣ والسنة السابقة بالتقديم لقناة القبول المباشر ووفق التخصص المناظر عن طريق قسم القبول المركزي/شعبة الوافدين حصرا.

٤. يتم قبول الطالب الأول على الاعداديات المهنية خارج العراق –لكل بلد واختصاص على حدة– في التخصص المناظر أو القريب في الجامعات الحكومية والجامعات/الكليات الاهلية وعن طريق قسم القبول المركزي/شعبة الوافدين حصرا (الملحق ٩ يبين التخصصات المناظرة).

٥. يسمح للطالب الوافد التقديم إلى الدراسة المسائية في الكليات الحكومية عن طريق قسم القبول المركزي/شعبة الوافدين حصرا على ان يتم تحديد الكلية والقسم من قبل الجامعة.

٦. يتم التقديم إلى الدراسة في الكليات الأهلية (الدراستين الصباحية والمسائية) بحسب الضوابط والشروط الخاصة بها من خلال البوابة الإلكترونية.

٧. يتم التقديم الى الدراسة في الكليات التابعة للوقفين/الدراسة الصباحية بحسب الضوابط والشروط الخاصة بها من خلال البوابة الالكترونية اما بالنسبة للدراسة المسائية فيتم الترشيح من خلال دائرة الدراسات والتخطيط/شعبة الوافدين حصراً.

٨. يحق للطالب الوافد التقديم للدراسة على أي من قنوات القبول المتاحة (الدراسة الصباحية أو المسائية في الكليات/المعاهد الحكومية أو الجامعات/الكليات الأهلية) أسوة بالطلبة خريجي الدراسة الاعدادية في داخل العراق.

٩. يحق للطالب الوافد من ذوي الشهداء التقديم للدراسة على أي من قنوات القبول المتاحة (الدراسة الصباحية أو المسائية في الكليات/المعاهد الحكومية أو الجامعات/الكليات الأهلية) أسوة بالطلبة خريجي الدراسة الاعدادية في داخل العراق شرط الا يكونوا من المستفيدين في السنة السابقة من القبول ضمن قناة ذوي الشهداء في الدراستين المسائية أو الأهلية مع مراعاة ما جاء في الفقرة (٣) من البند (أ-٣) من الفصل الاول.

١٠. يخضع الطلبة الوافدون للضوابط والتعليمات ذاتها التي يخضع إليها الطلبة الدارسون داخل العراق عدا امتياز اللغة المضافة وامتياز خريجي الدور الأول.

١١. يقدم الطالب المستمسكات المدرجة في أدناه إلى الكلية وترسل نسخة منها إلى مركز الوزارة لأغراض التدقيق:

أ. شهادة الثانوية (الإعدادية) الأصلية مصدقة بحسب الأصول ونسخة ملونة منها عدد (٣).

ب. كتاب معادلة الشهادة الصادر من وزارة التربية ونسخه ملونة منه على ان يتضمن الكتاب المعدل والمجموع الذي حصل عليه الطالب وأن يكون تاريخ صدوره في السنة التي يتقدم الطالب للقبول فيها.

ت. هوية الأحوال المدنية وشهادة الجنسية العراقية (أو البطاقة الوطنية) مع نسخه ملونة.

ث. جواز السفر الأصلي ونسخه ملونة (تأشيرة الدخول والخروج والإقامة في ذلك البلد)، أو ما يثبت وجود الطالب خارج العراق من وزارة الهجرة والمهجرين (ممن ليس لديهم جواز سفر).

١٢. يتم التحقق من صحة صدور وثائق الدراسة الثانوية الطلبة الحاصلين على الشهادات المعادلة المقبولين والمنقولين من قبل الجامعات الحكومية بالتنسيق مع دائرة الدراسات والتخطيط والمتابعة وبما لا يتجاوز نهاية السنة الدراسية الاولى مع تقديم كفالة ضامنة لحين ورود صحة الصدور وبخلافه تحجب عن الطالب وثائق تخرجه وتتحمل الكلية/الجامعة التبعات القانونية كافة في حال ثبت ان التأخير كان عن تلكؤ واهمال من قبلهما.

١٣. يتم التحقق من صحة صدور وثائق الطلبة الحاصلين على الشهادات المعادلة للطلبة المقبولين والمنقولين في الكليات/الجامعات الأهلية والكليات التابعة للوقفين من قبل دائرة الدراسات والتخطيط والمتابعة/شعبة الوافدين حصراً على ان يتم مفاتحتها بمدة لا تتجاوز (٦٠) يوماً من ظهور نتائج القبول والمباشرة وبخلافه تتحمل الكلية/الجامعة الاهلية التبعات القانونية كافة في حال ثبت ان التأخير كان عن تلكؤ واهمال من قبلهم، مع تقديم كفالة ضامنة لحين ورود صحة الصدور وبخلافه تحجب عن الطالب وثائق تخرجه.

هـ-٢- ضوابط نقل الطلبة من الجامعات المقبولين فيها خارج العراق:

١. الفئات المشمولة بالنقل إلى الدراسة المناظرة داخل العراق:

الفئة الأولى: زوجات وأبناء الدبلوماسيين والموظفين العاملين في الخارج بعد انتهاء عملهم وعودتهم إلى العراق.

الفئة الثانية: زوجات وابناء المبعوثين دراسيا على وفق نظام البعثات والزمالات الدراسية بعد انتهاء مدة الدراسة وعودتهم إلى العراق.

الفئة الثالثة: أبناء ذوي الكفاءات العائدة من الخارج المشمولين بالقرار ٤٤١ لسنة ٢٠٠٨ بعد تقديم ما يثبت ذلك من وزارة الهجرة والمهجرين.

الفئة الرابعة:

أ. قبول الطلبة الذين تؤهلهم مجاميعهم في سنة تخرجهم من الدراسة الإعدادية للقبول في الكلية/المعهد نفسها للفئتين (القبول المركزي، ذوي الشهداء).

ب. نقل الطلبة العائدين إلى العراق من المستمرين في الدراسة الصباحية خارج العراق في إحدى الجامعات المعترف بها بحسب ما تؤهلهم معدلاتهم في الدراسة الإعدادية في سنة تخرجهم في الدراسة الصباحية استثناءً من شرط سنة التخرج.

٢. يشترط في انتقال الطالب المشمول بالنقل (من الفئات المحددة في الفقرة ١ حصرا)، الذي يدرس خارج العراق في جامعة معترف بها إلى الدراسة المناظرة داخل العراق وأن يكون سفره عن طريق دائرة البعثات والعلاقات الثقافية/وزارتنا أو له ملف لديها وأن يكون من المستمرين في الدراسة قبل عودته وغير راسب في دراسته أكثر من سنتين.

٣. يشترط في الطالب من الفئة الأولى [إضافة لما ورد في الفقرة (٢) أعلاه] أن يكون حاصلا على الحد الأدنى للمعدل في الدراسة الإعدادية وكما مؤشر إزاء كل دراسة في أدناه:

أ. ٨٠% للمجموعة الطبية

ب. ٧٥% للمجموعة الهندسية

ت. ٦٠% لكليات العلوم والاختصاصات العلمية والإنسانية الأخرى.

ث. في حال عدم استيفاء الطالب لشرط المعدل أعلاه يتم قبوله على وفق ما يؤهله معدله في الدراسة الإعدادية سنة تخرجه

ج. يستثنى من شرط المعدل الطلبة الذين باشروا بالدراسة الاكاديمية او لديهم ملف دراسي في دائرة البعثات والعلاقات الثقافية/وزارتنا قبل تاريخ ٢٠١٥/٧/١٢.

٤. يشترط في الطالب من الفئتين الثانية والثالثة [إضافة لما ورد في الفقرة ٢ أعلاه] أن يكون حاصلا على الحد الأدنى للمعدل في الدراسة الإعدادية وكما مؤشر إزاء كل دراسة في أدناه:

أ. ٨٥% للمجموعة الطبية

ب. ٨٠% للمجموعة الهندسية

ت. ٦٠% كليات العلوم والاختصاصات العلمية والإنسانية الأخرى.

ث. في حال عدم استيفاء الطالب لشرط المعدل أعلاه يتم قبوله على وفق ما يؤهله معدله لسنة تخرجه في الدراسة الإعدادية.

٥. يشترط في الطلبة من الفئة الرابعة (ب) أعلاه –إضافة لما ورد في الفقرة ٢ أعلاه أن يكونوا قد اكملوا السنة الدراسية بنجاح او يكون لديهم رسوب بمادة او مادتين فقط على ألا يتم احتساب المواد (اللغة العربية، اللغة الانكليزية، اللغة الفارسية، الإحصاء، الحاسوب وكذلك المواد التي

تحسب درجتها بطريقة تراكمية مع سنوات الدراسة) من ضمن المواد التي رسب بها الطالب لطلبة المجموعه الطبية حصراً.

٦. تاريخ تقديم الطلب:

أ. يتم تقديم طلب النقل خلال مدة ستة أشهر من تاريخ العودة بالنسبة للفئتين (الأولى والثانية) وخلال سنة من تاريخ العودة بالنسبة للفئة (الثالثة).

ب. يتم تقديم الطلبات المستوفية للشروط للفئة (الرابعة) لغاية ١١/١٥.

٧. الاختبار الشامل:

أ. على الطلبة من الفئات الأولى والثانية والثالثة المستوفين للشروط المذكورة آنفا النجاح في الاختبار الشامل لاستكمال معاملة النقل من خارج العراق.

ب. تشكل في الجامعات لجان تخصصية وبالتنسيق مع لجان العمداء لاختبار الطلبة المستوفين لشروط النقل من خارج العراق، وكما يأتي:

اولا: طلبة المجموعة الطبية: جامعة بغداد.

ثانيا: طلبة المجموعة الهندسية: الجامعة التكنولوجية وجامعة النهرين.

ثالثا: طلبة الاختصاصات التقنية: الجامعة التقنية الوسطى.

رابعا: طلبة الاختصاصات الأخرى: الجامعة المستنصرية.

ت. يمنح الطالب فرصة أداء الامتحان بمحاولتين الأولى في منتصف شهر أيلول والثانية في منتصف شهر تشرين الأول.

ث. في حال رسوب الطالب في المحاولتين الامتحانيتين يعدل ترشيحه إلى كلية/معهد أخر وبحسب ما يؤهله معدله.

ج. يتم أستيفاء أجور الاختبار من الطالب (للمجموعة الطبية فقط) وكما يلي:

اولا: ٦٥٠,٠٠٠ ستمائة وخمسون الف دينار عراقي للمحاولة الأولى.

ثانيا: ٣٢٥,٠٠٠ ثلاثمائة وخمسة وعشرون الف دينار عراقي للمحاولة الثانية ان وجدت.

٨. يتم إجراء المقاصة العلمية وتحديد المرحلة الدراسية من القسم العلمي المنقول إليه الطالب على وفق الضوابط العامة للمقاصة العلمية الواردة في الفصل العاشر/ي-٤.

٩. يتم ترقين قيد الطالب المنقول (من الفئات الأولى والثانية والثالثة حصرا) في حال رسوبه في السنة الأولى من دراسته من قبل (الكلية/المعهد) مباشرةً، ويبلغ الطالب بمراجعة الوزارة/دائرة الدراسات والتخطيط والمتابعة حصرا لغرض تعديل ترشيحه وبحسب ما يؤهله معدله في شهادة الدراسة الإعدادية في سنة تخرجه.

١٠. لا يتخرج الطالب إلا بعد استكمال المتطلبات الدراسية المقرة أسوة بأقرانه.

خ -٢- استمارة الانتقال بين الجامعات

الجامعة:..............................

الكلية/المعهد:..............................

العدد:

التاريخ: /   /٢٠٢٣

استمارة الانتقال بين الكليات / المعاهد (الجامعات الحكومية)
السنة الدراسية (٢٠٢٣/٢٠٢٤)

- الاسم الرباعي : ....
- الجنـــس : ذكر ☐ أنثى ☐
- سنة التخرج من الدراسة الإعدادية: ....
- الفرع /علمي ☐ أدبي ☐ تجاري ☐ صناعي ☐ زراعي ☐ أخرى: ....
- السنة الدراسية التي تم القبول فيها لأول مرة: .... قناة القبول: ....
- الجامعة المقبول فيها الطالب: .... الكلية/المعهد: ....
  القسم: .... المرحلة: ....
- الجامعة المراد الانتقال اليها: .... الكلية/المعهد: ....
  القسم: .... المرحلة: ....
- هل الطالب مستضاف للسنة الدراسية (٢٠٢١/٢٠٢٢) الجامعة المستضاف فيها : ....
  الكلية/المعهد: .... القسم: .... المرحلة: ....

نتيجة الطالب: ناجح ☐ معيد للدور الثاني وعدد الدروس: ....

وثيقة الطالب الدراسية مدققة: نعم ☐ لا ☐

المرفقات:
١- النتيجة الامتحانية مع كتاب تأييد الاستمرار بالدراسة
٢- هوية الكلية/المعهد والمستمسكات الثبوتية
٣- السيرة الدراسية والمواد والوحدات التي استوفاها الطالب خلال سنوات الدراسة.

اسم الطالب:
التوقيع:
التاريخ: /   /٢٠٢٣

موظف التسجيل	مدير التسجيل	معاون العميد
الطالب مستوفٍ لضوابط الانتقال	تم تدقيق المعاملة من قبلي	لشؤون الطلبة

نسخة منه مع المرفقات إلى قسم شؤون الطلبة في الجامعة_ مع التقدير

ملاحظة: تلتزم الكلية/المعهد بملء كافة حقول الاستمارة.

عميد الكلية/المعهد

المعيار الخامس: الطلبة

5-4) الارشاد للطلبة والنشاطات اللاصفية:

السيد المقرر / لجنة الغيابات / لجنة الارشاد التربوي (أ.م.د. عبد الخالق) للاشارة ما يلزم رجاءً ..
٦/٥/٢٠٢٤

السيد رئيس قسم الهندسة المدنية المحترم

م/ محضر لجنة الارشاد التربوي

اجتمعت لجنة الارشاد التربوي في قسم الهندسة المدنية وتم مناقشة متابعة سير العملية الدراسية للطلبة من خلال المتابعة الدورية لأعضاء اللجنة عن طريق اجراء لقاءات دورية للطلبة ولكافة المراحل الدراسية الاولية والعليا والاستماع الى مشاكل الطلبة. كما وتم توجيه الطلبة بعدة توجيهات منها ترك ظاهرة التدخين داخل الحرم الجامعي ، والالتزام بالزي الموحد ، وحضور المحاضرات وفق التوقيتات المثبته في جدول الدروس. وقد تم التأكيد على الطلبة المثبته اسماؤهم في القسم والمتجاوزين الحد الاعلى المسموح به للغيابات بتقديم تعهد خطي الى لجنة الغيابات بعدم تكرار الغياب الى نهاية الفصل الدراسي، والالتزام التام بحضور الدروس واداء الامتحانات في اوقاتها، وبخلافه سيتم اتخاذ الاجراءات الادارية بحق المخالفين. وبناءا على توجيه لجنة الارشاد التربوي تم تقديم تعهدات خطية من قبل الطلبة المتجاوزين نسبة الغيابات المسموحة الى لجنة الغيابات في القسم.

التفضل بالاطلاع .... مع التقدير

أ.م.د. عبد الخالق عبد الجبار عبد الرضا
٢/٥/٢٠٢٤
عضوا / مقررا

أ.م.د. ليث خالد كامل
٢/٥/٢٠٢٤
عضوا

أ.م.د. اسماء ثامر ابراهيم
عضوا

أ.د. حاتم عبد الكريم رشيد
عضوا

أ.د. احمد سلطان علي
عضوا

أ.د. محمد عبد الخالق ابراهيم
رئيس اللجنة
٢/٥/٢٠٢٤

REPUBLIC OF IRAQ
MINISTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH
AL-NAHRAIN UNIVERSITY
COLLEGE OF ENGINEERING

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

العدد: هـ .ن. م. د. / ٢٨
التاريخ: ٢٣/ ١ / ٢٠٢٣

السيد العميد المحترم

م/ لجنة انضباط

تحية طيبة...

يرجى تفضلكم بالموافقة على احالة الطلبة المدرجة اسماؤهم ادناه الى لجنة انضباط الطلبة وذلك بناءا على المذكرة المقدمة من لجنة الارشاد التربوي ومن مقررية القسم وذلك بسبب كثرة المشاكل بين هؤلاء الطلبة علما ان جميع الطلبة المذكورين ادناه هم من المرحلة الاولى.

مع التقدير

1- منير علاء عبيد
2- مصطفى حسن جواد
3- علي فليح حسن

ا.د.مصعب عايد كصب
رئيس قسم الهندسة المدنية
٢٣/ ١ /2023

نسخة منه الى
- مقررية القسم
- الملف

(استثمار الطاقة النظيفة طريقنا نحو التنمية المستدامة)

الى/

الاسم	المركز	القسم	المرحلة
الطالبة تبارك فاضل	الاول	هندسة العمارة	الثالثة
الطالب حيدر عبد الرسول	الثاني	هندسة المدني	الرابعة
الطالبة نور الهدى طالب	الثالث مكرر	هندسة العمارة	الرابعة
الطالبة سنا حازم تركي	الثالث مكرر	هندسة الكيمياوية	الثانية
الطالب ديار محمود	الثالث مكرر	هندسة المدني	الثانية

م/ شكر وتقدير

ضمن منهاج شعبة النشاط الطلابي في كلية الهندسة للفصل الدراسي الثاني حيث اقيمت مسابقة الرسم ومساهمتكم الفاعلة في الفوز بالمسابقة المقامة في الباحة الخارجية لقسم هندسة العمارة بأشراف شعبة النشاطات الطلابية ، من هنا يسر عمادة كلية الهندسة ان تتقدم اليكم بالشكر والتقدير عن جهودكم المبذولة وتفوقكم في المسابقة ، متمنين لكم دوام الموفقية واملين بذل المزيد خدمة لبلدنا العزيز.

أ. د جمعة سلمان جياد
العميد
٧ / نيسان / ٢٠٢٤

السيدة المقرر / لجنة الدراسات الاولية
ابلاغ الطلبة قسمنا رجاء.
٨/٤

نسخة منه إلى /
- السادة معاوني العميد ، للتفضل بالاطلاع..مع التقدير
- شعبة النشاطات الطلابية .. مع التقدير
- الملف.

ومیض ٤/٤

REPUBLIC OF IRAQ
MINISTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH
AL-NAHRAIN UNIVERSITY
COLLEGE OF ENGINEERING

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

العدد: هـ .ن. م. د. / ٣٣٤

التاريخ: ٢٥/ ١٠/ ٢٠٢٣

السيد العميد المحترم

م/حملة تنظيف وتزيين القسم

تحية طيبة...

نؤد اعلامكم بقيام قسم الهندسة المدنية بتنظيم حملة تنظيف القسم وبأشراف رئيس ومقررية القسم وذلك في يوم الخميس الموافق 2023/10/26 وبمشاركة الطلبة المدرجة اسماءهم في المرفق.

تفضلكم بالاطلاع ...مع التقدير

ا.د.مصعب عايد كصب
رئيس قسم الهندسة المدنية
2023/10/25

نسخة منه الى
- مقررية القسم
- الملف

P.O. Box 64040 Jadriya – Baghdad –Iraq العراق - بغداد - ص ب 64040 الجادرية
Phone: 7786417- 77846967784696 – 7786417 :هاتف

اسماء الطلبة المشاركين بحملة تنظيف وتزين القسم

ت	الاسم	المرحلة
1	حسين باسم عبدالمجيد	ثانية
2	حسام بلال اسماعيل	ثانية
3	منير حاتم كريم	ثانية
4	رسل علي سلمان	ثانية
5	عبدالله عماد شاكر	ثانية
6	رسول شاكر عزاوي	ثانية
7	عبد الرزاق رسول سلمان	ثانية
8	عقيل لؤي فليح	ثانية
9	اريج كريم عبدالله	ثانية
10	مصطفى قاسم عباس	ثانية
11	حسين علي مطشر	ثانية
12	يوسف احمد صبحي	ثانية
13	ليث علي سبتي	ثانية
14	جعفر نبيل راضي	ثالثة
15	زاهر جمال	ثاثة

العدد: ه ن/١/١/٤٩٥٧ التاريخ: ٢٩/١٠/٢٠٢٣

رئاسة الجامعة / شعبة التأهيل والتوظيف والمتابعة

م / البطولة الوطنية للذاكرة

تحية طيبة ...

اشارة الى كتابكم ذي العدد ١٢٤٩٠/٧/٢ في ١٦/١٠/٢٠٢٣ ، والخاص بترشيح طلاب من كليتنا للمشاركة في بطولة الذاكرة الوطنية لطلبة كلية الهندسة مع المشرفين عليهم من التدريسيين والتي ستقام على قاعة السلام يوم الاحد الموافق ٢٩/١٠/٢٠٢٣ في تمام الساعة العاشرة صباحاً نرفق لكم جدول بأسماء الطلاب والاساتذة المشرفين عليهم.

مع التقدير .

المرفقات : اسماء الطلبة مع التدريسيين .

الاستاذ الدكتور جمعة سلمان جياد
العميـــد
٢٩ / تشرين الاول/٢٠٢٣

نسخة منه الى //
- السيد معاون العميد للشؤون العلمية المحترم // للتفضل بالاطلاع ..... مع التقدير.
- شعبة الشؤون العلمية والعلاقات الثقافية .
- وحدة الارشاد النفسي والتوجيه التربوي.
- الاقسام العلمية كافة.
- الملف .

٢١	يلال محسن أحمد سلمان	الثانية	الهندسة الالكترونية والاتصالات
٢٢	مينا علاء عبد الحسين مهدي	الثانية	الهندسة الالكترونية والاتصالات
٢٣	عباس جاسم محمد رحيمة	الثالثة	الهندسة الالكترونية والاتصالات
٢٤	عبد الله محمد توفيق إبراهيم	الثالثة	الهندسة الالكترونية والاتصالات
٢٥	عبد الله وهبي عبد القادر عبد الرزاق	الثالثة	الهندسة الالكترونية والاتصالات
٢٦	علي الأكبر زيد جمال جبار	الثالثة	الهندسة الالكترونية والاتصالات
٢٧	محمد حمدي نصيف جاسم	الثالثة	الهندسة الالكترونية والاتصالات
٢٨	محمد باسم طه حمود	الثالثة	الهندسة الالكترونية والاتصالات
٢٩	يوسف مهند رشدي رشيد	الرابعة	الهندسة الالكترونية والاتصالات
٣٠	مريم وليد رمضان شمة	الثالثة	الهندسة الالكترونية والاتصالات
٣١	مصطفى قاسم عباس	الثانية	الهندسة المدنية
٣٢	عبد الله محمود خلدون	الثانية	الهندسة المدنية
٣٣	محمد علي جواد	الثانية	الهندسة المدنية
٣٤	جعفر نبيل	الثالثة	الهندسة المدنية
٣٥	فاطمة ناصح	الثالثة	الهندسة المدنية
٣٦	بلال أحمد جميل	الرابعة	الهندسة المدنية
٣٧	مصطفى ظافر خضير	الرابعة	الهندسة المدنية
٣٨	ذوالفقار خضير	الرابعة	الهندسة المدنية
٣٩	منتظر صالح	الرابعة	الهندسة المدنية
٤٠	أية محمد قاسم حبيب	الثانية	هندسة الأطراف والمساند الصناعية
٤١	تبارك سعد طه	الثانية	هندسة الأطراف والمساند الصناعية
٤٢	ثابت حسن ثابت أسماعيل	الثانية	هندسة الأطراف والمساند الصناعية
٤٣	زهراء حسين محمد مطرود	الثانية	هندسة الأطراف والمساند الصناعية
٤٤	سارة خليل إبراهيم حسين	الثانية	هندسة الأطراف والمساند الصناعية
٤٥	طيبة محمود محمد عباس	الثانية	هندسة الأطراف والمساند الصناعية

جامعة النهرين
كلية الهندسة
مكتب العميد

العدد: هـ - ن / ١ / ١ / ٨٦٦ التاريخ: ١٤ / ٢ / ٢٠٢٤

إدارة مجمع بروج السكني المحترمون

م/ زيارة علمية

تحية طيبة ...

يرجى تفضلكم ابداء المساعدة وتسهيل مهمة طلبة المرحلة الرابعة في قسم الهندسة المدنية في كليتنا لإجراء زيارة علمية الى مجمع بروج السكني ، وذلك لتعزيز الجانب التطبيقي العملي لمواد الأختصاص لدى الطلبة ، وسيرافق الطلبة خلال الزيارة السادة التدريسيين المبينة أسماؤهم أدناه من منتسبي القسم العلمي.

تفضلكم بالإطلاع وإعلامنا الموعد المناسب للزيارة ليتسنى إجراء اللازم شاكرين تعاونكم بهذا الخصوص.

مع التقدير

أسماء التدريسيين

١- أ.م.د. عمر شمال فرحان
٢- أ.م.د. ضياء مصطفى ذيبان
٣- المدرس زاهر نوري محمد تقي

أ.د. جمعة سلمان جياد
العميد
١٢/ شباط/ ٢٠٢٤ م

نسخة منه الى /
مكتب السيد العميد / للتفضل بالإطلاع .... مع التقدير.
السيدين معاوني العميد / للتفضل بالإطلاع .... مع التقدير.
قسم الهندسة المدنية / مع التقدير.
أمانة مجلس الكلية .

جامعة النهرين
كلية الهندسة

Al-Nahrain University \ College of Engineering.
P.O.Box: (64040) Jadriah , Baghdad , Iraq
E-Mail: dean.office@eng.nahrainuniv.edu.iq , http://engar.nahrainuniv.edu.iq

جامعة النهرين / كلية الهندسة
العراق - بغداد - الجادرية - ص.ب : ٦٤٠٤٠

١٠٩

REPUBLIC OF IRAQ
MINSTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH
AL-NAHRAIN UNIVERSITY
COLLEGE OF ENGINEERING

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

العدد: هـ.ن.م.د./ ٩١
التاريخ : ٦/ ٣/ ٢٠٢٤

السيد العميد المحترم

م/سفرة علمية

تحية طيبة

يرجى تفضلكم بالموافقة على تنظيم سفرة علمية من قبل الاساتذة المدرجة اسماؤهم ادناه لطلبة المرحلة الرابعة في قسمنا الى احد مشاريع فك الاختناقات في بغداد (مشروع تطوير ساحتي عدن و صنعاء) وذلك للتعرف على كيفية تسليح الروافد الخرسانية مسبقة الصب والعناصر الانشائية الخاصة بالختبرات من ناحية الصب والتسليح والقوالب الحديدية واعطاؤهم نبذة عن التنفيذ في الموقع .

اسماء التدريسيين:

1- ا.م.د. ضياء مصطفى ذيبان

2- ا.م.د. زينه رياض صالح

3- م. زاهر نوري محمد تقي

مع التقدير

ا.د.مصعب عايد كصب
رئيس قسم الهندسة المدنية
2024/3/6

نسخة منه الى:
- مقررية القسم
- الملف

المعيار الخامس: الطلبة

5-5) متطلبات ووثائق التخرج:

Ref: 15950-0300
Date: 8-4-2024

TRANSCRIPT OF RECORD

FULL NAME: YOUSIF SAMEER ABDUL RAHIM
DATE & PLACE OF BIRTH: ANBAR 2001 **NATIONALITY:** IRAQI
COLLEGE AND DEPT.: COLLEGE OF ENGINEERING/ CIVIL DEPT.
YEAR OF ENTRANCE: 2019-2020 **DATE OF GRADUATION:** 26/07/2023
DEGREE: B.SC. IN CIVIL ENGINEERING
ATTEMPT: FIRST **AVERAGE:** 79.481 % **GRADE:** GOOD
AVERAGE OF THE FIRST GRADUATE: 86.605 % **SEQUENCE OF GRADUATION:** 4/89
NOTE: TURN PAPER FOR MORE INFORMATION.

SUBJECTS AND MARKS ACHIEVED DURING STUDY YEARS

First Year (2019-2020): First Semester

Subject	Units	Mark%
Human Rights	1	82
Chemistry	2	63
Physics	3	76
Calculus (Mathematics I)	4	50
Engineering Drawing	2	93
Engineering Mechanics I	3	62
Workshop Technology	1	*

First Year (2019-2020): Second Semester

Subject	Units	Mark%
Arabic Language I	1	65
Algebra Linear and Non-Linear (Mathematics II)	4	68
Engineering Geology	3	79
Construction Materials	2	79
Engineering Mechanics II	2	85
Computer Fundamentals and Programming I	2	68
Engineering Graphics	2	71
English Language I	2	90

Second Year (2020-2021): First Semester

Subject	Units	Mark%
Fluid Mechanics I	4	74
Mechanics of Materials I	4	85
Concrete Technology	4	68
Arabic Language II	1	81
English Language II	2	78
Geomatics I	3	71
Computer Fundamentals and Programming II	2	59
Principles of Management	1	93
Mathematics III	3	69

Second Year (2020-2021): Second Semester

Subject	Units	Mark%
Fluid Mechanics II	4	78
Engineering Statistics	2	76
Mathematics IV	3	64
Democracy	1	77
Building Construction	3	94
Mechanics of Materials II	3	94
Geomatics II	3	67

Third Year (2021-2022): First Semester

Subject	Units	Mark%
Engineering Management and Economy	3	69
Traffic Engineering	2	89
Hydrology	2	75
Sanitary Engineering I	3	70
Reinforced Concrete Design I	3	93
Theory of Structures I	3	85
Soil Mechanics I	4	93
Engineering Mathematics I	3	58

Third Year (2021-2022): Second Semester

Subject	Units	Mark%
Hydraulics	2	92
Construction Methods	2	99
Sanitary Engineering II	3	61
Reinforced Concrete Design II	3	96
Theory of Structures II	3	97
Soil Mechanics II	4	89
Engineering Mathematics II	3	70
English Language III	2	84

Fourth Year (2022-2023): First Semester

Subject	Units	Mark%
Elective I (Plumbing Engineering)	3	93
Quantity Surveying	3	65
Computer Applications in Civil Engineering	2	75
Steel Design I	3	77
Reinforced Concrete Design III	3	83
Transportation Engineering I	2	79
Foundation Engineering I	3	84
English Language IV	2	75
Project	2	96

Fourth Year (2022-2023): Second Semester

Subject	Units	Mark%
Professional Ethics	1	83
Elective II (Bridges Engineering)	2	70
Numerical Analysis	2	73
Steel Design II	3	82
Reinforced Concrete Design IV	3	85
Transportation Engineering II	3	77
Foundation Engineering II	3	84
Project	2	96

AL-NAHRAIN UNIVERSITY

0301-BM-237949

Asst. Prof. Dr. Taghreed Khalid Hamad
Registration and Students Affairs Manager

Prof. Dr. Naseer Abbood Issa AlHaboubi
Dean Assistant for Scientific Affairs

Prof. Dr. Jumaa Salman Chiad
Dean

Note: The document contains two hidden UV transparent logos of Al-Nahrain University.

Remarks:

- Grades and averages: (50-59 passed),(60-69 average), (70-79 good), (80-89 very good) and (90-100 excellent).
- No scratches nor cross out.
- Minimum passing mark is 50%.
- (*): Not included in the overall graduation average.
- One unit is equivalent to one hour of theoretical lectures or (2-3 hours of practical work) per week for fifteen weeks semester.
- The student completed the requirements of summer training in the academic year (2021-2022).

15950-0300
8-4-2024

Printed by: Mysem Fawzi Sadek

Checked by: Aseel Mehdy Mehsan

Prof. Dr. Omar F. Abdul-Rasheed
Co. Vice President for Scientific Affairs

العدد: ٠٣٢ - ١٥٩٧٢

التاريخ: ١٥ - ٤ - ٢٠٢٤

وثيقة تخرج بالدرجات

الاسم الكامل: احمد علي حمود

محل وتاريخ الولادة: بغداد ٢٠٠١   **الجنسية:** عراقي

سنة القبول: ٢٠١٩_٢٠٢٠   **الكلية والقسم:** كلية الهندسة/ قسم الهندسة المدنية

الشهادة الحاصل عليها: بكالوريوس علوم في الهندسة المدنية

تاريخ التخرج: ٢٠٢٣/٠٩/٢٨   **الدور:** الثاني   **المعدل:** ٦٢,٢١٠ ٪   **التقدير:** متوسط

تسلسل الخريج: ٧٠ من ٨٩ خريج   **معدل الخريج الاول:** ٨٦,٦٠٥ ٪

ملاحظة: معلومات اخرى في ظهر الوثيقة.

ادناه المواد الدراسية والدرجات خلال سنوات الدراسة

السنة الاولى (٢٠١٩_٢٠٢٠) : الفصل الاول

الموضوع	الوحدات	الدرجة٪
حقوق الانسان	١	٨١
الكيمياء	٢	٧٦
الفيزياء	٣	٨٥
التفاضل والتكامل (الرياضيات I)	٤	٦٠
الرسم الهندسي	٢	٧٧
الميكانيك الهندسي I	٣	٧٧
تكنولوجيا الورش	١	*

السنة الاولى (٢٠١٩_٢٠٢٠) : الفصل الثاني

الموضوع	الوحدات	الدرجة٪
اللغة العربية I	١	٧٢
الجبر الخطي واللاخطي (الرياضيات II)	٤	٧٥
الجيولوجيا الهندسية	٣	٩٣
مواد البناء	٢	٧٢
الميكانيك الهندسي II	٢	٨٨
اساسيات الحاسوب والبرمجة I	٢	٦٩
الاظهار الهندسي	٢	٩١
اللغة الإنكليزية I	٢	٨٦

السنة الثانية (٢٠٢٠_٢٠٢١) : الفصل الاول

الموضوع	الوحدات	الدرجة٪
ميكانيك الموائع I	٤	٧٩
ميكانيك المواد I	٤	٥٤
تكنولوجيا الخرسانة	٤	٦٥
اللغة العربية II	١	٧٧
اللغة الإنكليزية II	٢	٩٠
جيوماتكس I	٣	٦٩
اساسيات الحاسوب والبرمجة II	٢	٦٥
مبادئ الأدارة	١	٨٤
الرياضيات III	٣	٦٥

السنة الثانية (٢٠٢٠_٢٠٢١) : الفصل الثاني

الموضوع	الوحدات	الدرجة٪
ميكانيك الموائع II	٤	٦٩
الاحصاء الهندسي	٢	٧٤
الرياضيات IV	٣	٦٩
الديمقراطية	١	٦٩
إنشاء المباني	٣	٩١
ميكانيك المواد II	٣	٦١
جيوماتكس II	٣	٥٦

السنة الثالثة (٢٠٢١_٢٠٢٢) : الفصل الاول

الموضوع	الوحدات	الدرجة٪
الادارة الهندسية والاقتصاد	٣	٥٨
هندسة المرور	٢	٨٢
الهايدرولوجي	٢	٥١
الهندسة الصحية I	٣	٥٣
تصميم الخرسانة المسلحة I	٣	٦٨
نظرية الأنشاءات I	٣	٦٢
ميكانيك التربة I	٤	٥٨
الرياضيات الهندسية I	٣	٥٩

السنة الثالثة (٢٠٢١_٢٠٢٢) : الفصل الثاني

الموضوع	الوحدات	الدرجة٪
الهايدروليك	٢	٥٨
طرق الإنشاء	٢	٥٧
الهندسة الصحية II	٣	٦١
تصميم الخرسانة المسلحة II	٣	٥٥
نظرية الأنشاءات II	٣	٥٧
ميكانيك التربة II	٤	٦٣
الرياضيات الهندسية II	٣	٦٢
اللغة الانكليزية III	٢	٧٤

السنة الرابعة (٢٠٢٢_٢٠٢٣) : الفصل الاول

الموضوع	الوحدات	الدرجة٪
مواضيع منتخبة I (هندسة المطارات)	٣	٥١
المسح الكمي	٣	٧٣
تطبيقات الحاسوب في الهندسة المدنية	٢	٥٧
تصميم الحديد I	٣	٦٢
تصميم الخرسانة المسلحة III	٣	٥٣
هندسة المواصلات I	٢	٥١
هندسة الأسس I	٣	٥٤
اللغة الانكليزية IV	٢	٥٠
المشروع	٢	٧٨

السنة الرابعة (٢٠٢٢_٢٠٢٣) : الفصل الثاني

الموضوع	الوحدات	الدرجة٪
اخلاقيات المهنة	١	٦٤
مواضيع منتخبة II (هندسة الجسور)	٢	٥٨
التحليلات العددية	٢	٥٦
تصميم الحديد II	٣	٥٤
تصميم الخرسانة المسلحة IV	٣	٧٢
هندسة المواصلات II	٣	٦٥
هندسة الأسس II	٣	٥٠
المشروع	٢	٧٨

أ.م.د. تغريد خالد حمد
مدير شعبة شؤون الطلبة والتسجيل

أ.د. نصير عبود عيسى الحبوبي
معاون العميد للشؤون العلمية

أ.د. جمعة سلمان جياد
العميد

AL-NAHRAIN UNIVERSITY

0301-BM-236229

ملاحظة: الوثيقة تحتوي على علامتين مائيتين مخفيتين لشعار جامعة النهرين.

الملاحظات:

- درجة التقديرات: مقبول (٥٠-٥٩)، متوسط (٦٠ – ٦٩)، جيد (٧٠ – ٧٩)، جيد جداً (٨٠ – ٨٩)، امتياز (٩٠ – ١٠٠).
- الوثيقة خالية من الحك والشطب.
- ادنى درجة نجاح: ٥٠٪.
- (*): غير داخلة في المعدل الكلي.
- الوحدة للنظام الفصلي تعادل ساعة نظرية واحدة او (٢-٣) ساعات عملية في الاسبوع لفصل دراسي واحد أمده خمسة عشر اسبوعاً.
- اكمل الطالب متطلبات التدريب الصيفي في السنة الدراسية (٢٠٢١-٢٠٢٢).

٣٠-١٥٩٧٠

١٥-٤-٢٠٢٤

منظم الوثيقة: ميسم فوزي صادق

المدقق: اسيل مهدي محسن

أ. د. عمر فاروق عبد الرشيد رسول
مساعد رئيس الجامعة للشؤون العلمية/وكالة

العدد : ٢/٠٣٠١

التاريخ : ٣/١/٢٠٢٤

وثيقة تخرج بالدرجات للدراسات العليا

الأسم ألكامل: ليلى اكرم عواد عزيز

محل وتاريخ الولادة: بغداد ١٩٨٨

الكلية: الهندسة

سنة القبول: تشرين الثاني ٢٠٢٠

المعدل: ٨٦.٨٣٣٪

الشهادة: ماجستير علوم في الهندسة المدنية

ملاحظة: معلومات اخرى في ظهر الوثيقة.

الجنسية: عراقية

القسم: الهندسة المدنية

تاريخ التخرج: ٢٠٢٣/٠٥/١١ **بموجب الامر الجامعي رقم** ٣٨٤٠/٣/٣

التقدير: جيد جداً

الموضوع	الفصل	الوحدات	الدرجة ٪
التحليل الأنشائي المتقدم	I	٣	٩٠
تصميم الخرسانة مسبقة الجهد*	I	٢	٨٧
ميكانيك التربة المتقدم	I	٣	٨٣
اللغة الانكليزية التقنية I	I	١	٨١
نظرية المرونة*	I	٢	٨١
ديناميك المنشأت*	I	٢	٩٠

الموضوع	الفصل	الوحدات	الدرجة ٪
تحريات التربة والطرق الجيوفيزياوية	II	٣	٩٨
التصميم الانشائي المتقدم	II	٣	٧٢
طريقة العناصر المحددة*	II	٢	٧٤
اللغة الانكليزية التقنية II	II	١	٨٨
التحليل اللدن للمنشأت*	II	٢	٩٠
الطرق الامثلية*	II	٢	٩٢
رسالة الماجستير	-	١٠	٩٠

AL-NAHRAIN UNIVERSITY

عدد الوحدات الكلية: ٣٦.

المعدل: ٨٦,٨٣٣٪.

عنوان رسالة الماجستير: **"التحليل الزلزالي للابنية الخرسانية المسلحة غير المنتظمة شاقولياً بشكل تدريجي والقريبة من الصدع".**

0301-MF-238681

أ.د. جمعة سلمان جياد
العميد

أ.د. نصير عبود عيسى الحبوبي
معاون العميد للشوون العلمية

د. محمد صباح محمد
مسوول شعبة الدراسات العليا

ملاحظة: الوثيقة تحتوي على علامتين مائيتين مخفيتين لشعار جامعة النهرين.

Ref: 0301-2
Date: 3-1-2024

POSTGRADUATE TRANSCRIPT OF RECORD

FULL NAME: LAYLA AKRAM AWAD AZEEZ
DATE & PLACE OF BIRTH: BAGHDAD 1988 **NATIONALITY:** IRAQI
COLLEGE: COLLEGE OF ENGINEERING **DEPARTMENT:** CIVIL ENGINEERING
REGISTRATION DATE: NOVEMBER 2020
GRADUATION DATE: 11/05/2023 **ACCORDING TO UNIVERSITY LETTER NO.** 2/3/4840
AVERAGE & GRADE: 86.833% (VERY GOOD)
DEGREE: M.SC. IN CIVIL ENGINEERING
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SUBJECT	SEMESTER	UNITS	MARK%
Advanced Structural Analysis	I	3	90
Prestress Concreate Design*	I	2	87
Advanced Soil Mechanics	I	3	83
Technical English I	I	1	81
Theory of Elasticity*	I	2	81
Dynamics of Structure*	I	2	90

SUBJECT	SEMESTER	UNITS	MARK%
Soil Exploration & Geophysical Methods	II	3	98
Advanced Structural Design	II	3	72
Finite Element Method*	II	2	74
Technical English II	II	1	88
Plastic Analysis of Structures*	II	2	90
Optimization Methods*	II	2	92
M.Sc. Thesis	-	10	90

AL-NAHRAIN UNIVERSITY

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Units: **36.**
Average Mark: **86.833%.**
The title of M.Sc. thesis: **"Near-Fault Seismic Analysis of Vertical Irregular Configuration of Step-Back Reinforced Concrete Building".**

r. Mohammed Sabah Mohammed
Head of Postgraduate Division

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Dean Assistant for Scientific Affairs

Prof. Dr. Jumaa Salman Chiad
Dean

Note: The document contains two hidden UV transparent logos of Al-Nahrain University.

عدمه إلى مقاعد الدراسة على وفق الوثائق الصحيحة ويتم قبول الطالب على ضوء الوثيقة الصحيحة على وفق التعليمات السارية سنة التقديم من حيث المعدل في تلك السنة (يعامل معاملة الطلبة الجدد)، مما يستلزم تدقيق أسماء المتقدمين للدراسة مع قاعدة بيانات الطلبة المزورين وإعلام دائرة الدراسات والتخطيط والمتابعة بالحالات المكتشفة.

ك-٦- ضوابط إصدار أوامر التخرج وتسلسل الخريجين:

١. تعد شعبة التسجيل في الكلية/المعهد قوائم بأسماء الطلبة بعد التحقق من استكمالهم جميع متطلبات التخرج (النجاح بمواد المنهج ولجميع الصفوف، استكمال التدريب الصيفي، تدقيق وثيقة الدراسة الإعدادية، ....) وعرض ذلك على مجلس الكلية للمصادقة.

٢. اصدار أمر إداري باستكمال الطلبة متطلبات التخرج، على أن يشتمل الأمر على (رقم وتاريخ جلسة مجلس الكلية، والسنة الدراسية، ونوع الدراسة، والدور، وتوصيف الشهادة الممنوحة، وتاريخ التخرج، وعدد الخريجين)، ويرسل إلى الجامعة رفقة كتاب طلب إصدار أمر جامعي، على أن يتضمن الطلب الفقرات التالية:

أ. التأكيد على استكمال اجراءات التحقق من صحة صدور الوثائق التي تم بموجبها قبول الطلبة أو انتقالهم (وثائق الدراسة الإعدادية، وثائق المعهد، الشهادات المعادلة من خارج العراق، كشوف الدرجات من خارج العراق، بطاقة الدرجات للطلبة المنقولين داخل العراق) وتؤشر الحالات التي لم تستكمل الإجراءات لغاية اعداد القوائم.

ب. الأسماء متطابقة مع قوائم القبول الرسمية المرسلة من الجامعة إلى الكلية في سنة القبول.

ج. قوائم الأسماء تبدأ بالتسلسل(١-الاسم) وتنتهي بالتسلسل (ن-الاسم) لكل قسم أو على مستوى الكلية في حال عدم وجود أقسام.

د. يتضمن رأس القائمة اسم الكلية والقسم (إن وجد)، ونوع الدراسة (صباحي أو مسائي)، وسنة التخرج، واسم الدورة، وتشتمل على الحقول التالية التسلسل، والاسم الرباعي، والجنسية، والجنس، والدور، والمعدل.

هـ. تختم القوائم بختم التسجيل وتوقع من قبل السادة عميد الكلية ومعاون العميد ومدير التسجيل.

و. تعد البيانات على قرص CD وبصيغتي EXCEL وPDF إضافة إلى القوائم الورقية وترسل إلى الجامعة خلال فترة لا تزيد عن ثلاث أسابيع بعد الامتحانات النهائية.

٣. دمج تسلسل الخريجين بحيث يكون تسلسل الطالب المتخرج محسوباً في ضوء المجموع الكلي لعدد الخريجين للدورين الأول والثاني ويتم اتخاذ الإجراءات الآتية:

أ. إصدار أمر جامعي لخريجي الدور الأول يتضمن اسم الطالب ومعدله وتسلسله في الدور الأول.

ب. إصدار أمر جامعي لخريجي الدور الثاني متضمنا اسم الطالب ومعدله فقط.

ج. إصدار أمر إداري موحد من الكلية لخريجي الدور الأول والثاني كافة يحتوي اسم الطالب ومعدله وتسلسله والدور الذي تخرج منه لاعتماده بشكل نهائي فيما يخص تسلسل الخريجين للسنة الدراسية.

٤. تزويد خريجي الدور الأول الراغبين بالتعيين بوثائق تخرج بالدرجات (بدون تسلسل)، اما الخريجون الذين يرغبون بإكمال دراستهم العليا فيزودون إضافة إلى الوثيقة بكتاب تأييد صادر من الكلية موضحاً فيه تسلسل خريجي الدور الأول ولا يعد نهائيا إلا بعد اعتماد نتائج الدور الثاني.

٥. يحتسب تسلسل الخريجين على اساس نوع الدراسة (الصباحي او المسائي) وليس على اساس الدفعة.

ك-٧- آلية تزويد الطلبة الراغبين بالدراسة خارج العراق بالوثائق:

١. يزود الطلبة المستمرون بالدراسة في داخل العراق والراغبون بإكمال دراستهم في خارج العراق بدرجاتهم وعدد الساعات والوحدات الدراسية والساعات النظرية والعلمية خلال سني الدراسة بعد ان يقدموا طلبا بترقين قيدهم إلى كلياتهم/معاهدهم بحسب التعليمات الخاصة بذلك وفي حال عدم قبولهم في جامعات خارج العراق بإمكانهم تقديم طلب إلى كلياتهم/معاهدهم لغرض إعادتهم للدراسة وإلغاء ترقين قيدهم (بمدة لا تتجاوز سنة دراسية واحدة)، على ان لا يتعارض ذلك مع التعليمات الإمتحانية النافذة ثم يعرض الأمر على مجلس الكلية/المعهد لدراسته والتوصية بإعادته ثم يعرض على رئاسة الجامعة للنظر في المصادقة على توجيه مجلس الكلية/المعهد.

٢. بالإمكان تزويد الطلبة المرقنة قيودهم (باستثناء الطلبة المرقنة قيودهم بسبب الغش أو المحاولة فيه والتزوير والعقوبات الانضباطية) بدرجاتهم وعدد الساعات والوحدات الدراسية والساعات النظرية والعلمية خلال سني الدراسة.

٣. يذكر في التأييد رقم الأمر الإداري الخاص بترقين القيد وتاريخه وبراءة الذمة من الكلية.

٤. لا يزود الطالب بأصل وثيقة الدراسة الإعدادية التي قبل بموجبها بالدراسة إلا بعد جلبه ما يؤيد قبوله مبدئيا في إحدى الجامعات الرصينة ويتم الاحتفاظ بنسخة واضحة وملونة عن الوثيقة المرسلة والتي قبل بموجبها في الدراسة.

ك-٨- كيفية معالجة الوثائق المفقودة

١. تشكيل لجنة مركزية في كل جامعة تأخذ على عاتقها مهمة دراسة موضوع السجلات المفقودة وماهي المعالجات التي وضعتها سابقا أو تقترح إضافتها في الوقت الراهن بخصوص منح

جامعة النهرين
كلية الهندسة
مكتب العميد

جمهورية العراق - وزارة التعليم العالي والبحث العلمي - جامعة النهرين

العدد: هـ ن /١/١/ ٥٥٠   التاريخ: ٣٠/ ١/ ٢٠٢٤

(أمر إداري)

م/ تسلسلات الخريجين / قسم الهندسة المدنية

إشارة الى الأمر الجامعي بالعدد (٤٠٢/٢/٢) في (٢٠٢٤/١/٨) المتضمن منح الطالب (محمد نفعي كمال سليمان) شهادة البكالوريوس في الهندسة / قسم الهندسة المدنية للسنة الدراسية (٢٠٢٣/٢٠٢٢) / الدور الثاني ، تقرر مايأتي :

تكون تسلسلات الخريجين في قسم الهندسة المدنية للدورين الأول والثاني للسنة الدراسية (٢٠٢٣/٢٠٢٢) دورة (طوفان الأقصى) كماهو مبين في القائمة المرفقة طياً .

المرفقات :

١ـ قائمة بأسماء خريجي قسم الهندسة المدنية تبدأ بالتسلسل (١ـ علي نشأت صبحي يعقوب) وتنتهي بالتسلسل (٨٩ـ احمد محمد عبدالأمير عبود)

أ.د. جمعة سلمان جياد
العميد
٣٠/كانون الثاني/٢٠٢٤ م

السيد المقرر / للجنة الامتحانية
لاتخاذ ما يلزم

نسخة منه الى /
مكتب السيد العميد / للتفضل بالإطلاع... مع التقدير.
السيدين معاوني العميد / مع التقدير.
قسم الهندسة المدنية / مع التقدير.
شعبة التسجيل / مع التقدير.
أمانة مجلس الكلية.

جامعة النهرين
كلية الهندسة
الهندسة المدنية

المرحلة الرابعة
الدور الاول والثاني
2023-2022

تسلسل خريجي قسم الهندسة المدنية للعام الدراسي **2022- 2023** وبعد قرار الاضافة

رقم ت م هـ /ق/8260 في 2-11-2023

تبدأ التسلسلات من التسلسل رقم (1) للطالب (علي نشأت صبحي يعقوب) وحتى تسلسل رقم (89) للطالب (احمد محمد عبدالامير عبود)

ت	اسم الطالب الرباعي	القسم العلمي	المعدل التراكمي	التقدير	الدور
1	علي نشأت صبحي يعقوب	الهندسة المدنية	86.605	جيد جدا	الاول
2	هالة سعد عبد الله حسن	الهندسة المدنية	84.671	جيد جدا	الاول
3	حسن محمد قاسم عبد الله	الهندسة المدنية	82.101	جيد جدا	الاول
4	يوسف سمير عبد الرحيم سلطان	الهندسة المدنية	79.481	جيد	الاول
5	شهد باسم فاضل عبود	الهندسة المدنية	74.205	جيد	الاول
6	حسين عادل خالد عبدالله	الهندسة المدنية	74.086	جيد	الاول
7	مصطفى خميس مزعل محمد	الهندسة المدنية	73.355	جيد	الاول
8	بتول اياد فليح عجيل	الهندسة المدنية	73.326	جيد	الاول
9	ساره مهند عبدالعظيم ناصر	الهندسة المدنية	73.291	جيد	الاول
10	شهد احمد محمد علي هادي	الهندسة المدنية	72.590	جيد	الاول
11	فهد حامد عبدالله عباس	الهندسة المدنية	72.281	جيد	الاول
12	محمود محمد محمود سلمان	الهندسة المدنية	72.052	جيد	الاول
13	زهراء محمد مجيد حميد	الهندسة المدنية	71.699	جيد	الاول
14	ايه رعد يحيى فالح	الهندسة المدنية	71.542	جيد	الاول
15	دانيا رشيد اكرم رشيد	الهندسة المدنية	71.401	جيد	الاول
16	عبد العزيز محمد عزيز رؤوف	الهندسة المدنية	70.920	جيد	الاول
17	محمد عباس شايع هامل	الهندسة المدنية	70.888	جيد	الاول
18	غدير فلاح حسين علي	الهندسة المدنية	70.851	جيد	الاول
19	احمد محمد علي حسون	الهندسة المدنية	69.883	متوسط	الاول
20	محمد عبدالله خليل زباري	الهندسة المدنية	69.730	متوسط	الاول
21	زهراء مؤيد محمد حاشوش	الهندسة المدنية	68.901	متوسط	الاول
22	منتظر صادق حسن عبدالرسول	الهندسة المدنية	68.445	متوسط	الاول
23	فاطمة وداد حمد شعبان	الهندسة المدنية	68.358	متوسط	الاول
24	محمد عبدالباقي عبدالخالق عيدان	الهندسة المدنية	68.210	متوسط	الاول
25	عمر شكري علي محمد	الهندسة المدنية	67.988	متوسط	الاول
26	ود رائد طارق ابراهيم	الهندسة المدنية	67.795	متوسط	الثاني

الدور الاول ٢/٢/٨١٠٨ في ٢٠٢٣/٧/٢٦
الدور الثاني ٢/٢/١١٦٥١ في ٢٠٢٣/٩/٢٨
* الطالب محمد نقص (الدور الثاني بعد اضافة ٣ درجات) (قرار ٢/٢/٢٠٣ في ٢٠٢٤/١/٨)

27	زينب جميل عباس فاضل	الهندسة المدنية	67.749	متوسط	الاول
28	فاطمة احسان محمد شاطي	الهندسة المدنية	67.743	متوسط	الاول
29	مسلم مروان رشيد جابر	الهندسة المدنية	67.027	متوسط	الاول
30	حسن محسن حسن علي	الهندسة المدنية	67.011	متوسط	الاول
31	هالة علي طالب محمد علي	الهندسة المدنية	66.722	متوسط	الاول
32	ميكال محمود نصيف جاسم	الهندسة المدنية	66.536	متوسط	الثاني
33	علي معن علي عبد المجيد	الهندسة المدنية	66.533	متوسط	الثاني
34	منتظر علي عبود مجيد	الهندسة المدنية	66.363	متوسط	الاول
35	رسل ماجد جاسم عيسى	الهندسة المدنية	66.268	متوسط	الثاني
36	المجتبى حسين تركي صالح (مقاصة)	الهندسة المدنية	66.100	متوسط	الاول
37	طه عمار عبد الجبار كريم	الهندسة المدنية	65.951	متوسط	الاول
38	عبدالله عدنان قاسم هاشم	الهندسة المدنية	65.871	متوسط	الاول
39	نور خالد سالم محمد	الهندسة المدنية	65.814	متوسط	الثاني
40	شهد محمد عبدالله حميد	الهندسة المدنية	65.655	متوسط	الاول
41	زهراء نبيل ابراهيم عباس	الهندسة المدنية	64.798	متوسط	الثاني
42	حيدر ماجد قاسم جاسم	الهندسة المدنية	64.692	متوسط	الاول
43	طيبه علي طه سكران	الهندسة المدنية	64.427	متوسط	الاول
44	امنيه ادهم اكرم طعمه	الهندسة المدنية	64.269	متوسط	الثاني
45	ساره ابراهيم خليل مصطفى	الهندسة المدنية	64.244	متوسط	الثاني
46	زينب صباح حسن كاظم	الهندسة المدنية	64.176	متوسط	الاول
47	نور حسن شمخي جابر	الهندسة المدنية	64.049	متوسط	الاول
48	عبدالله احمد خلف عمر	الهندسة المدنية	63.858	متوسط	الثاني
49	مصطفى مؤيد فاضل حمد	الهندسة المدنية	63.768	متوسط	الاول
50	محمد خضر عبدالرحمن رؤوف	الهندسة المدنية	63.522	متوسط	الاول
51	رفل عامر داود ابراهيم	الهندسة المدنية	63.505	متوسط	الثاني
52	حسين عبد الرزاق جاسم محمد	الهندسة المدنية	63.375	متوسط	الثاني
53	يوسف رعد جبار صالح	الهندسة المدنية	63.315	متوسط	الاول
54	سجود حسين زيدان محمد	الهندسة المدنية	63.269	متوسط	الثاني
55	حيدر فاخر كاظم بايع	الهندسة المدنية	63.261	متوسط	الثاني
56	علا حسين مصطفى محمد حسن	الهندسة المدنية	63.170	متوسط	الاول
57	ابراهيم ثائرعبد الوهاب ابراهيم	الهندسة المدنية	63.151	متوسط	الاول
58	الحسن نمير عباس عبد الامير	الهندسة المدنية	63.076	متوسط	الثاني
59	زهراء جمعه عبد محسن	الهندسة المدنية	63.062	متوسط	الاول
60	ليث حسين علي حيدر	الهندسة المدنية	63.059	متوسط	الاول
61	ليث علي جابر جاسم	الهندسة المدنية	62.989	متوسط	الثاني

62	مصطفى احمد قاسم محمد	الهندسة المدنية	62.956	متوسط	الاول
63	هيثم سلام علي عودة	الهندسة المدنية	62.707	متوسط	الثاني
64	امير صادق جعفر فزع	الهندسة المدنية	62.555	متوسط	الثاني
65	رانيا صلاح الدين جاسم	الهندسة المدنية	62.541	متوسط	الاول
66	محمد عيسى هاشم نوفل	الهندسة المدنية	62.498	متوسط	الثاني
67	زهراء ناصر محمد خلف	الهندسة المدنية	62.488	متوسط	الاول
68	محمد عباس فاضل حسن	الهندسة المدنية	62.367	متوسط	الثاني
69	ايه فرج عبد الحسين كريم	الهندسة المدنية	62.315	متوسط	الاول
70	احمد علي حمود سيد	الهندسة المدنية	62.210	متوسط	الثاني
71	زينب جاسم حسن خضر	الهندسة المدنية	62.142	متوسط	الثاني
72	علي محمد خميس عابدين	الهندسة المدنية	62.099	متوسط	الاول
73	مجتبى هيثم يحيى معن	الهندسة المدنية	62.097	متوسط	الاول
74	ماهر سمير موجد علي	الهندسة المدنية	61.948	متوسط	الاول
75	شهد سؤدد عبدالسلام صافي	الهندسة المدنية	61.921	متوسط	الثاني
76	هاجر اياد صادق جعفر	الهندسة المدنية	61.826	متوسط	الثاني
77	سمى علي عادل حشمت	الهندسة المدنية	61.782	متوسط	الثاني
78	زينب عدنان محمد زيدان	الهندسة المدنية	61.240	متوسط	الثاني
79	احمد ايهاب حمزة حسون	الهندسة المدنية	61.057	متوسط	الثاني
80	سيف مهند جبار حبيب	الهندسة المدنية	60.740	متوسط	الثاني
81	محمد نفعي كمال سليمان *	الهندسة المدنية	60.658	متوسط	الثاني
82	محمد مقداد جاسم محمد	الهندسة المدنية	60.576	متوسط	الاول
83	ابراهيم غايب سويد محيسن	الهندسة المدنية	60.326	متوسط	الاول
84	عبدالله عمر عبدالكريم كامل	الهندسة المدنية	60.107	متوسط	الثاني
85	محمد ناجي حسين جسوم	الهندسة المدنية	60.001	متوسط	الثاني
86	فاطمة ناظم احمد حمادي	الهندسة المدنية	59.947	مقبول	الثاني
87	محمد فارس عبدالله حاتم	الهندسة المدنية	59.914	مقبول	الثاني
88	احمد عبدالرحمن سمير عبد	الهندسة المدنية	59.729	مقبول	الاول
89	احمد محمد عبدالامير عبود	الهندسة المدنية	59.179	مقبول	الثاني

قسم الهندسة المدنية

ختم اللجنة الإمتحانية

اللجنة الامتحانية

Engineering Department

رئيس القسم

ختم عمادة الكلية

العميد

الدور الاول ٢/٢/٨١٠٨ في ٢٦/٧/٢٠٢٣

الدور الثاني ٢/٢/١١٦٥١ في ٢٨/٩/٢٠٢٣

* الطالب محمد نفعي (الدور الثاني بعد اضافة ٥ درجات) ٢/٢/٢٠٢٤ في ٨/١/٢٠٢٤

Number of Faculty Members/423 Students for the Academic Year (2023-2024):

Number of Faculty Members							
	Certification		Scientific Rank				Total
	Ph.D.	M.Sc.	Prof.	Asst. Prof.	Lect.	Asst. Lect.	
	25	14	10	12	9	8	39
Percentage to 423 Students	5.91%	3.31%	2.36%	2.84%	2.13%	1.89%	9.22%

الاستاذ الدكتور

مصعب عايد كصب

رئيس قسم الهندسة المدنية

History of Admissions Standards for the Past Five Years:

Academic Year	Min. Score		Number of New Students Enrolled	Transfer Students to the Civil Eng. Department	Transfer Students from the Civil Eng. Department	Number of Graduated Students
2023-2024	89.14		141	10		
2022-2023	89.43		74	6	-	89
2021-2022	88.17		85	12	-	21
2020-2021	89.33		131	2	1	19
2019-2020	74.85		91	4	-	13
2018-2019	87.50		52	-	-	22

الاستاذ الدكتور

مصعب عايد كصب

رئيس قسم الهندسة المدنية

1-5) متطلبات القبول واجراءات التسجيل:

1- أصل وثيقة الدراسة الاعدادية المعززة بتصديق المديرية العامة للتربية في المحافظة.
2- كفالة ضامنة على وفق نوذج من قسم الشؤون القانونية في الكلية.
3- نسخة ملونة من (شهادة الجنسية، وهوية الاحوال المدنية العراقية، أو البطاقة الوطنية الموحدة).
4- صور حديثة عدد (3).
5- إستمارة الفحص الطبي.
6- وصل التسجيل.
7- تعتمد نتائج القبول المعلنة على الموقع الالكتروني الرسمي للجامعة ويعد الاعلان إشعارا رسميا الى القسم العلمي للبدء بتسجيل الطلبة ويعد يوم الدوام التالي لاعلان النتائج على الموقع هو اليوم الرسمي لبدء التسجيل. على أن يتم التسجيل في القسم المقبول فيه الطالب خلال مدة (15) يوم دوام إبتداءا من تأريخ بدء التسجيل.
8- يمنح الطلبة الذين لم تظهر أسمائهم عند اعلان نتائج القبول المباشر لأي سبب من الاسباب مدة (10) أيام دوام من تأريخ ظهور نتائج القبول للاعتراض كما يحق للطالب الاعتراض على نتيجة قبوله.
9- يجب أن يسجل الطالب في القسم المقبول فيه حتى مع تقديمه للاعتراض وفي حالة ظهور أحقيته بالاعتراض فيتم تعديل قبوله وتتخذ إجراءات التسجيل وفق قبوله الجديد بالاعتماد على كتاب صادر من تسجيل الجامعة ويعاد تسليم المستمسكات المقدمة من قبل الطالب بكتاب رسمي ومحضر تسليم وإستلام بين القسمين وإكمال إجراءات التسجيل وفق الفقرة (1) أعلاه.

الاستاذ الدكتور
مصعب عايد كصب
رئيس قسم الهندسة المدنية

1-5) معدلات القبول في قسم الهندسة المدنية للطلبة في السنوات الخمس الاخيرة:

ت	السنة	معدل القبول
1	2024-2023	89.14
2	2022-2023	89.43
3	2021-2022	88.17
4	2020-2021	89.33
5	2019-2020	74.85

الاستاذ الدكتور
مصعب عايد كصب
رئيس قسم الهندسة المدنية

1-5) مقارنة العدد الفعلي للطلبة المقبولين مقابل العدد المخطط قبوله:

ت	السنة	العدد الفعلي لطلبة المقبولين	العدد المخطط للطلبة	نوع الدراسة
1	2024-2023	74	25	الصباحي
2	2024-2023	67	25	المسائي

الاستاذ الدكتور
مصعب عايد كصب
رئيس قسم الهندسة المدنية

المعيار السادس

هيئة التدريس

2.6 Criterion 6: Faculty

The qualifications of the faculty members and their adequate to cover all the curricular areas and to meet the program criteria are described in this criterion. This section is included the facility qualification, composition, size, credentials, and experience of the faculty, and workload.

2.6.1 Faculty Qualification

This article describes the qualifications of the faculty and how they are adequate to cover all the curricular areas of the program and also meet any applicable program criteria. This description should include the composition, size, credentials, and experience of the faculty. Faculty analysis is shown in Table (6.1). Detailed qualifications of the faculty members can be found in the following Al-Nahrain university website:
https://cv.nahrainuniv.edu.iq, which shows their qualifications, achievement, and recent publications. The faculty publications reflect their research interests. Several seminars by faculty members take place at the department and college levels annually.

Table 6.1: Faculty Qualifications
Name of Program

Faculty Member Name	Highest Degree Earned, Field and Year	Scientific Rank [1]	Type of Academic Appointment[2] PS or TS[2]	FT or PT[3]	Years of Experience			Professional Registration/ Certification	Level of Activity[4] H, M, or L		
					Govt./Ind. Practice	Teaching	This Institution		Professional	Professional	Consulting/ work
Abdulazzez Al-Kifaai	PhD / Geotechnics /1990	P	PS	FT	41	32	10	IEU	H	M	M
Jabbar H Al-Baydhani	PhD / Environmental / 2003	P	PS	FT	34	31	5	IEU	H	H	H
Qassun S. Mohammed Shafiqu	PhD / Geotechnics / 2004	P	PS	FT	23	23	23	IEU	M	M	H
Ahmed Sultan Ali	PhD / Materials / 2007	P	PS	FT	31	18	18	IEU	M	M	M
Mohammed Abdulkhaleq Ibrahim	PhD / Environmental / 2015	P	PS	FT	32	22	22	IEU/ ASCE/ FAE	H	M	H

Hatim A. Rashid	**PhD / Management and economics / 2007**	**P**	**PS**	**FT**	**34**	**18**	**16**	**IEU**	**M**	**H**	**M**
Musab Aied Qissab	**PhD / Structures / 2011**	**P**	**PS**	**FT**	**23**	**19**	**19**	**IEU/ ASCE**	**H**	**H**	**H**
Abbas Jawad Al-Taie	**MsC / Geotechnics / 2002**	**P**	**PS**	**FT**	**25**	**8**	**18**	**IEU**	**H**	**H**	**H**
Ibrahim Saleem Ibrahim	**PhD / Structures / 2015**	**P**	**PS**	**FT**	**28**	**19**	**19**	**IEU/ IAS**	**M**	**M**	**M**
Asma Thamir Ibraheem	**PhD / Roads and traffic / 2003**	**P**	**PS**	**FT**	**35**	**35**	**35**	**IEU/ ASCE**	**M**	**M**	**M**
Laith K Al-Hadithy	**PhD / Structures / 1999**	**ASP**	**PS**	**FT**	**38**	**38**	**22**	**IEU/ ISE**	**H**	**M**	**H**
Ahmed Faleh Al Bayati	**PhD/Structures/2013**	**ASP**	**PS**	**FT**	**20**	**10**	**10**	**IEU/ ICE**	**M**	**H**	**H**
AbdulKhalik Jabbar Abdulridha	**PhD / Structures / 2015**	**ASP**	**PS**	**FT**	**20**	**18**	**18**	**IEU/ ICE**	**H**	**H**	**M**
Haitham Alaa Hussain	**PhD/hydraulic/2016**	**ASP**	**PS**	**FT**	**18**	**18**	**18**	**IEU**	**H**	**H**	**H**
Hasan Mousa Jwad Al-Mousawe	**PhD/ Roads and traffic /2016**	**ASP**	**PS**	**FT**	**8**	**8**	**7**	**IEU**	**H**	**H**	**H**
Sultan Ahmed Daud	**PhD / Structures / 2017**	**ASP**	**PS**	**FT**	**19**	**19**	**19**	**IEU**	**H**	**M**	**M**
Raid Ahmed Daud	**PhD / Structures / 2016**	**ASP**	**PS**	**FT**	**19**	**19**	**19**	**IEU**	**H**	**M**	**H**
Dhiaa M Al-Tarafany	**PhD / Structures / 2016**	**ASP**	**PS**	**FT**	**18**	**18**	**18**	**IEU/ ACI**	**H**	**H**	**H**
Zena Riyadh Saleh	**PhD / Structures / 2017**	**ASP**	**PS**	**FT**	**18**	**18**	**18**	**IEU**	**H**	**H**	**H**

Mohammed Ali Akram	**PhD / Environmental / 2016**	**ASP**	**PS**	**FT**	**20**	**18**	**18**	**IEU**	**H**	**M**	**H**
Mustafa Kamal Mahmoud	**PhD / Structures /2017**	**ASP**	**PS**	**FT**	**18**	**18**	**18**	**IEU**	**H**	**M**	**H**
Dalia Shakir Atwan	**MsC/Materials/2006**	**ASP**	**PS**	**FT**	**18**	**18**	**18**	**IEU**	**M**	**M**	**L**
Khalida Ahmed Daud	**MsC/ Geotechnics /2002**	**ASP**	**PS**	**FT**	**21**	**21**	**17**	**IEU/ ISGS**	**M**	**M**	**L**
Yasser Mahmood Kadhim	**PhD / Geotechnics / 2009**	**L**	**PS**	**FT**	**25**	**9**	**1**	**IEU**	**M**	**M**	**M**
Zainab Mohameed Asmaa	**PhD/Materials/2016**	**L**	**PS**	**FT**	**18**	**18**	**18**	**IEU**	**H**	**M**	**M**
Ahmed Hadi A. Raheem	**PhD/Structures /2015**	**L**	**PS**	**FT**	**25**	**13**	**7**	**IEU**	**H**	**M**	**M**
Ahmed A.Hafedh Mustafa	**PhD / Structures / 2018**	**L**	**PS**	**FT**	**19**	**19**	**19**	**IEU**	**H**	**H**	**M**
Ahmed Farhan Muwayez	**PhD/Roads and traffic/2017**	**L**	**PS**	**FT**	**17**	**17**	**17**	**IEU**	**H**	**M**	**M**
Alaa Waleed Hameed	**PhD / Structures / 2020**	**ASL**	**PS**	**FT**	**18**	**18**	**18**	**IEU**	**M**	**M**	**L**
Azhar Sadeq Yaseen	**MsC / Civil ENG. / 2009**	**ASL**	**PS**	**FT**	**11**	**11**	**11**	**IEU**	**M**	**M**	**H**
Zahir Noori Mohammed	**MsC/ Structures /1999**	**ASL**	**PS**	**FT**	**22**	**10**	**10**	**IEU**	**M**	**H**	**H**
Duaa Abdulrazzaq Faleh	**MsC / Geotechnics / 2015**	**ASL**	**PS**	**FT**	**8**	**8**	**8**	**IEU**	**H**	**H**	**H**
Nora Saeed Jawad	**MsC / Environmental / 2014**	**ASL**	**PS**	**FT**	**18**	**18**	**18**	**IEU**	**M**	**M**	**L**
Hawraa Saeed Jawad	**MsC/ Materials/ 2004**	**ASL**	**PS**	**FT**	**18**	**18**	**18**	**IEU**	**M**	**M**	**M**
Hiba Emad Abaas	**MsC / Structures / 2008**	**ASL**	**PS**	**FT**	**15**	**15**	**15**	**IEU**	**M**	**M**	**M**

Ruba Hanna Majeed	**MsC / Geotechnics / 2016**	**ASL**	**PS**	**FT**	**22**	**22**	**22**	**IEU**	**M**	**M**	**M**
Manahel Zeno Mohammad	**MsC / Structures / 2022**	**ASL**	**PS**	**FT**	**20**	**20**	**20**		**M**	**M**	**L**
Enas Sami Majeed	**MsC / Structures / 2021**	**ASL**	**PS**	**FT**	**19**	**19**	**19**	**IEU**	**M**	**M**	**M**
Qutaiba Abdulhadi Abood	**MsC / Structures /2022**	**ASL**	**PS**	**FT**	**18**	**16**	**2**	**IEU**	**M**	**M**	**M**
Karam Qauis Najee	**MsC / Electronics / 2012**	**ASL**	**PS**	**FT**	**7**	**1**	**1**	**IEU**	**M**	**M**	**M**
Massara Jalaa Yahyaa	**MsC / Electronics / 2016**	**ASL**	**PS**	**FT**	**7**	**7**	**1**	**IEU**	**M**	**M**	**M**

Complete table for each member of the faculty in the program. Add additional rows or use additional sheets if necessary. Updated information is to be provided at the time of the visit.

1. Code: P = Professor, ASP = Assistant Professor, L = Lecturer, ASL = Assistant Lecturer and O = Other.
2. Code: PS = Permanent Staff, TS = Temporary Staff.
3. FT = Full Time Faculty or PT = Part Time Faculty, at the institution.
4. The level of activity, high, medium or low, should reflect an average over the three years prior to the Campus visit.

2.6.2 Faculty Workload

The total number of staff who holds PhD degree is 26 and those who hold Msc degree are 15. The course load is distributed in accordance with faculty rank that is a maximum of 6 credit hours for Professors, 8 hours for Assistance Professors, 10 hours for Lecturer and 12 hours for Assistance Lecturer. Any extra course load for each faculty member is compensated for financially. The fulltime faculty workload and the academic distribution activities for the academic year 2023-2024 are shown in Table (6.2).

Table 6.2: Faculty Workload Summary

Civil Engineering Program

<table>
<tr><th rowspan="2">Faculty Member Name</th><th rowspan="2">PT or FT [1]</th><th rowspan="2">Classes Taught (Course No./ Credit Hrs.) Term and Year[2]</th><th colspan="3">Program Activity Distribution[3]</th><th rowspan="2">% of Time Devoted to the Program5</th></tr>
<tr><th>Teaching</th><th>Research or Scholarship</th><th>Other[4]</th></tr>
<tr><td rowspan="4">Musab Aied Qissab</td><td rowspan="4">FT</td><td>CIER411 3hr, 1,2023</td><td rowspan="4">40%</td><td rowspan="4">20%</td><td rowspan="4">40%</td><td rowspan="4">100%</td></tr>
<tr><td>CIER421 3hr, 2,2024</td></tr>
<tr><td>CIER721 3hr, 2,2024</td></tr>
<tr><td>CIER721 3hr, 2,2024</td></tr>
<tr><td rowspan="3">Abdulazzez Al-Kifaai</td><td rowspan="3">FT</td><td>CIER722 3hr, 2,2024</td><td rowspan="3">40%</td><td rowspan="3">30%</td><td rowspan="3">30%</td><td rowspan="3">100%</td></tr>
<tr><td>CIER911 3hr, 1,2023</td></tr>
<tr><td>CIER714 2hr, 1,2023</td></tr>
<tr><td rowspan="4">Jabbar H Al-Baydhani</td><td rowspan="4">FT</td><td>CIER321 3hr, 2,2024</td><td rowspan="4">40%</td><td rowspan="4">30%</td><td rowspan="4">30%</td><td rowspan="4">100%</td></tr>
<tr><td>CIER410 3hr, 1,2023</td></tr>
<tr><td>CIER913 3hr, 1,2023</td></tr>
<tr><td>CIER723 2hr, 2,2024</td></tr>
<tr><td>Adel Abdul-amir Alazzawi</td><td>PT</td><td>CIER711 3hr, 1,2023</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Hussam Kadhum Risan</td><td>PT</td><td>CIER312 4hr, 1,2023</td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="4">Qassun S. Mohammed Shafiqu</td><td rowspan="4">FT</td><td>CIER310 5hr, 1,2023</td><td rowspan="4">40%</td><td rowspan="4">30%</td><td rowspan="4">30%</td><td rowspan="4">100%</td></tr>
<tr><td>CIER320 5hr, 2,2024</td></tr>
<tr><td>CIER711 3hr, 1,2023</td></tr>
<tr><td>CIER914 2hr, 1,2023</td></tr>
<tr><td>Ahmed Sultan Ali</td><td>FT</td><td>CIER912 3hr, 1,2023</td><td>30%</td><td>40%</td><td>30%</td><td>100%</td></tr>
</table>

		CIER725 2hr, 2,2024				
Mohammed Abdulkhaleq Ibrahim	FT	CIER314 4hr, 1,2023 CIER324 4hr, 2,2024	30%	40%	30%	100%
Hatim A. Rashid	FT	CIER315 3hr, 1,2023 CIER326 3hr, 2,2024 ETHC420, 1hr,2 , 2024 CIER922 3hr, 2,2024	40%	30%	30%	100%
Alaa' Hussein Abed	PT	CIER412 4hr, 1, 2023 CIER923 3hr, 2,2024	20%	30%	50%	100%
Haitham Alaa Hussain	PT	CIER316 3hr, 1,2023 CIER327 3hr, 2,2024 CIER724 2hr, 2,2024 CIER310 5hr, 1,2023 CIER320 5hr, 2,2024	40%	20%	40%	100%
Ibrahim Saleem Ibrahim	FT	CIER210 5hr, 1,2023	30%	40%	30%	100%
Asma Thamir Ibraheem	FT	CIER715 3hr, 1,2023 CIER713 2hr, 1,2023 CIER924 2hr, 2,2024	40%	30%	30%	100%
Laith K Al-Hadithy	FT	CIER413 4hr, 1,2023 CIER423 4hr, 2,2024 CIER921 3hr, 2,2024	40%	30%	30%	100%
Ahmed Faleh Al Bayati	FT	CIER313 4hr, 1,2023 CIER323 4hr, 2,2024 CIER410 3hr, 1,2023	40%	30%	30%	100%

		CIER924 2hr, 2,2024				
AbdulKhalik Jabbar Abdulridha	FT	CIER110 4hr, 1,2023 CIER110 3hr, 2,2024 CIER725 4hr, 1,2023 CIER715 2hr, 1,2023	40%	30%	30%	100%
Hasan Mousa Jwad Al-Mousawe	FT	CIER412 4hr, 1, 2023 CIER424 4hr, 2, 2024 CIER914 2hr, 1,2023	40%	30%	30%	100%
Sultan Ahmed Daud	PT	CIER313 4hr, 1,2023 CIER323 4hr, 2,2024				
Mustafa Kamal Mahmoud	FT	CIER420 3hr, 2,2024 UREQ910, 1, 2,2024 UREQ920, 2, 2,2024	40%	30%	30%	100%
Raid Ahmed Daud	FT	CIER312 4hr, 1,2023 CIER322 4hr, 2,2024	30%	30%	40%	100%
Dhiaa M Al-Tarafany	FT	CIER312 4hr, 1,2023 CIER322 4hr, 2,2024 CIER414 4hr, 1,2023 CIER424 4hr, 2,2024	40%	30%	30%	100%
Zena Riyadh Saleh	FT	CIER311 3hr, 1,2023 CIER321 3hr, 2,2024 CIER414 4hr, 1,2023 CIER424 4hr, 2,2024	40%	30%	30%	100%
Mohammed Ali Akram	FT	CIER 212, 5hr, 1,2023	20%	30%	50%	100%

Khalida Ahmed Daud	PT	CIER310 5hr, 1,2023				
		CIER320 5hr, 2,2024				
Yasser Mahmood Kadhim	FT	Math110 3hr,12023	40%	30%	30%	100%
		CIER411 3hr, 1,2023				
		CIER421 3hr, 2,2024				
Amna Talal Abdul-hameed	PT	CIER317 3hr, 1,2023				
Ahmed Hadi A. Raheem	FT	CREQ110 3hr,1,2023	30%	30%	40%	100%
		CIER415 3hr, 1,2023				
Ahmed A.Hafedh Mustafa	FT	CIER210 5hr, 1,2023	40%	30%	30%	100%
		CIER413 4hr, 1,2023				
		CIER423 4hr, 2,2024				
Ahmed Farhan Muwayez	FT	CIER412 4hr, 1, 2023	40%	30%	30%	100%
		CIER424 4hr, 2, 2024				
		CIER720 1hr, 2,2024				
		UREQ 710 1 hr, 1, 2023				
Alaa Waleed Hameed	FT	CIER110 4hr, 1,2023	50%	20%	30%	100%
		CIER110 3hr, 2,2024				
		UREQ 213 3hr, 1, 2023				
		CIER415 3hr, 1,2023				
		CIER426* 3hr, 2,2024				
Zahir Noori Mohammed	PT	CIER110 4hr, 1,2023				
		CIER120 3hr, 2,2024				
		CIER311 3hr, 1,2023				
		CIER426* 3hr, 2,2024				

Muhammad Assi	PT	CREQ110 3hr,1,2023 CREQ120 3hr,2,2024 CIER417 3hr, 1, 2023				
Mustafa Hamid	PT	Math210, 4hr,1, 2023				
Zuhair Khudher Allawi	PT	CIER310 5hr, 1,2023 CIER320 5hr, 2,2024				
Azhar Sadeq Yaseen	PT	CIER415 3hr, 1,2023 CIER426* 3hr, 2,2024				
Duaa Abdulrazzaq Faleh	PT	CIER411 3hr, 1,2023 CIER421 3hr, 2,2024 CIER310 5hr, 1,2023 CIER320 5hr, 2,2024				
Nora Saeed Jawad	FT	CREQ110 3hr,1,2023 CIER314 4hr, 1,2023 CIER324 4hr, 2,2024	40%	30%	30%	100%
Hawraa Saeed Jawad	PT	CIER 211, 5hr, 1, 2023				
Hiba Emad Abaas	FT	CREQ110 3hr,1,2023 CIER210 5hr, 1,2023 CIER213, 5hr, 1, 2023 CIER314 4hr, 1,2023 CIER311 3hr, 1,2023 CIER321 3hr, 2,2024 CIER324 4hr, 2,2024	50%	20%	30%	100%
Ruba Hanna Majeed	FT	CIER213, 5hr, 1, 2023	50%	20%	30%	100%

		CIER411 3hr, 1,2023				
		CIER421 3hr, 2,2024				
Manahel Zeno Mohammad	FT	UREQ 111 3hr, 1, 2023	50%	20%	30%	100%
		CREQ110 3hr,1,2023				
		CREQ120 3hr,2,2024				
		UREQ 213 3hr, 1, 2023				
Qutaiba Abdulhadi Abood	FT	CIER210 5hr, 1,2023	50%	20%	30%	100%
		CIER 212, 5hr, 1,2023				
		ETHC420, 1hr,2 , 2024				
Karam Qauis Najee	FT	Math110 3hr,12023	30%	20%	50%	100%
		UREQ 213 3hr, 1, 2023				
Massara Jalaa Yahyaa	FT	Math110 3hr,12023	50%	20%	30%	100%
		CREQ110 3hr,1,2023				
		CREQ120 3hr,2,2024				
		Math210, 4hr,1, 2023				
Samer Hussein	PT	PHYS110 3hr,1,2023				
		Math120 3hr,2, 2024				
Hadeel Shukri	PT	UREQ 110 1hr, 1, 2023				
Ali Kazem	PT	CIER 121, 4hr, 2, 2024				
		CIER 211, 5hr, 1, 2023				
Israa Shaker	FT	CREQ121 2hr,2,2024	20%	20%	60%	100%
Maha Sameh	PT	UREQ 121,2 hr, 2, 2024				
		UREQ 211, 1hr, 1, 2023				
		UREQ 320 2 hr, 2, 2024				

		UREQ410 2 hr, 1, 2023				
Mohammad Hashim	PT	CIER213, 5hr, 1, 2024				
Hind Saadoun	PT					
Suzan Muhammad	PT	CIER 211, 5hr, 1, 2023				
		CIER310 5hr, 1,2023				
Marwa Ghazi	PT	UREQ 211 1hr, 1, 2023				
Khaldoun Khalil	PT	UREQ 212 1hr, 1, 2023				
Soraa Mohammad	PT	UREQ 212 1hr, 1, 2023				
Abdulsalam	PT	UREQ 211 1hr, 1, 2023				
Marwa Abdul Basit	PT	UREQ 212 1hr, 1, 2023				
Zaid Abdul Hadi	PT	CIER315 3hr, 1,2023				
		CIER326 3hr, 2,2024				
Mohammad Salam	PT	TRAN#90				

1. FT = Full Time Faculty or PT = Part Time Faculty, at the institution.
2. For the academic year for which the Self-Assessment Report is being prepared.
3. Program activity distribution should be in percent of effort in the program and should total 100%.
4. Indicate sabbatical leave, etc., under "Other."
5. Out of the total time employed at the institution.

2.6.3 Faculty Size

1. Interactions with Students

At civil Department, quality teaching and student interactions are emphasized. All faculty members maintain regular posted office hours, and most have an open-door policy; supervise senior design project teams, requiring regular weekly meetings with the high graduate students; and many serve as advisors to undergraduate research projects. Faculty members also serve as advisors for professional societies requiring attendance at chapter meetings, advising student leaders. They also work for assisting post graduate thesis and dissertations for language and scientific acceptance.

2. Interactions with Industry and Government
The department contributed over many years in providing services to several different state offices and the private sector as well. These services have included a variety of activities including engineering consultancy, to conduct preliminary and final designs, check designs, supervision of project implementation, organizing courses and developmental courses of continuing education, research and evaluation of patents, contract research for postgraduate students with state offices, and other activities. Many collage buildings at Al-Nahrian university during the past ten years were designed by civil faculty members.

3. Student Advising
Freshman advising is handled by the Committee of Student Affairs in the Department of civil. The committee consisting of some members of the faculty is responsible for advising students. The faculty advises, motivates, and helps students with their professional development. There are occasions in which faculty members spend time with students outside the classroom on special projects and in undergraduate research activities. Students' advising is provided by all faculty members based on expertise and guidance as preferred by the student. This service is provided by all civil faculties and it is offered voluntarily, with no academic release time.

2.6.4 Faculty Development

Faculty professional development activities include attending seminars and lectures, participation in training workshops, attending professional conferences, professional writing activities, review activities, conducting new and original research, training programs inside and outside Iraq.

- **Leave of Absence (Study Abroad):** An institutional program allows faculty who have not completed a Ph.D. degree and are in a tenure or tenure-track position to obtain an opportunity to study abroad. The ministry provides tuition fees, travel, and a monthly salary. Those who are not in tenure-track positions also participate through temporary contracts with the same benefits. Many faculties have successfully participated in this program and were successfully retained at the department.

- **Center for Continuing Education** The center offers professional development courses and training to faculty and to recently admit graduate teaching assistants. All new faculty and graduate teaching assistants are required to enroll in training courses in their first year of work.

- **Sabbatical Leave*:*** The University supports a faculty professional leave(sabbatical) activity after five years of service. Some members of the faculty took advantage of this opportunity.

2.6.5 Faculty Authority and Responsibility

The head of the department is appointed by the President of the University based on the recommendation of the Dean of the College of Engineering. The authority of the department's head spans in general for three consecutive years. At the end of three years, the authority can be extended, or another faculty member is appointed to take his place. The department's head assigns the members and coordinators of the department and various committees. He distributes the administrative tasks and academic affairs to the designated department Committees. The department's head leads the department council meetings and represents the department at the college of engineering's council meetings. The head of department exercises scientific and administrative authorities to perform his job.

The responsibility of the full-time faculty includes teaching, research, institutional and committee services and professional society services. Most of the department academic and the general program issues are taken care of by the relevant committees. Usually, course modification and evaluation is the main task of the scientific committee. However, a faculty member can initiate the creation of a new course. Major curriculum renovation is usually presented by the scientific committee at the department's General Board meeting where each faculty member has the chance to interfere in the creation or modification process. The curriculum modification proposal is presented to the college ofengineering curriculum committee for final approval.

مرفقات المعيار السادس

الادلة المقدمة

Abdulaziz.A.Al-kifae

Soft Clay Soil Stabilization By utilizing Cement Kiln Dust, Ceramic Dust Waste and Fly Ash

Authors

Ghaidaa Kadhim Abd, Abdulaziz A. Al-Kifae

Publication date

2021/8/17

Journal

Design Engineering

Pages

9051-9071

Description

The disposal of industrial waste is a global problem, in addition to the costly process of removing this waste. Likewise, one of the problems with this waste is that it harms the environment. As a result of building materials costs increasing over time, there has been a need to search for the lowest cost and locally available materials. There was also a need to search for a way to convert industrial waste, which is the secondary waste from manufacturing processes, into materials for engineering projects. Cement kiln dust and fly ash waste are secondary waste. Ceramic waste is secondary waste and waste from construction and demolition waste. Soil stabilization utilizing cement kiln dust CKD, fly ash FA and ceramic dust waste CDW is an effective method for stabilizing soft clay soils. Soft clay soils are found in central and southern Iraq. These soils exhibit negative impacts on engineering projects as well as on building …

The influence of CKD on the properties of Iraqi gypsum soil

Authors

Ali S Fakhruldeen, Abdulazeez A Al-Kifaee

Publication date

2024/2/14

Journal

AIP Conference Proceedings

Volume

3009

Issue

1

Publisher

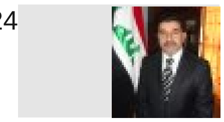
AIP Publishing

Description

One of the challenging soils is gypsum soil. That may cause a sudden collapse of buildings and structures when exposed to water. Gypsum soils are widely spread in semi-arid and arid regions around the world. In Iraq, it is mainly spread in the country's western, southern, and southwestern areas. To assess the influence of adding varying percentages of (CKD) on gypsum soil characteristics, mixing ratios of (5, 10, and 15%) of weight were used. The results show that the collapse potential decreased from 7.144 to 2.143 with the increase in (CKD) percentages. In addition to the collapse test improvement, other tests such as the Proctor compaction test and the direct shear test revealed that the geotechnical properties of the stabilized soil rose as the proportion of (CKD) by weight of the soil increased.

Scholar articles

The influence of CKD on the properties of Iraqi gypsum soil
AS Fakhruldeen, AA Al-Kifaee - AIP Conference Proceedings, 2024



Earthquake effect on single pile behavior with various factor of safety and depth to diameter ratio in liqufiable sand

Authors

Raid R Al-Omari, Abdulaziz A. Al-Kifae, Sarmad M Al-Tameemi

Publication date

2018

Journal

International Journal of Civil Engineering and Technology

Volume

9

Issue

4

Pages

1253-1262

Description

One of the most main causes of pile foundation failure effected by earthquake stresses is liquefaction phenomenon. Shake table study was performed to examine the behavior of single pile with different factor of safety and depth to diameter ratio in liquefiable saturated loose sand induced by actual earthquake, monitoring the acceleration in soil and pile cap and the excess pore water pressure ratio, besides the pile end bearing load and pile settlement. It is concluded that, the pile factor of safety and depth to diameter ratio shows no influence on the acceleration and the liquefaction potential. Pile settlement of FS= 2.5 decreased 14%, whereas it is decreased 31% for FS= 3.0 compared to pile settlement of FS= 2.0. The pile settlement in cases of increasing depth to diameter ratio decreased since the penetration of the pile is deeper and extend to the layer that not liquefied. Comparable to (L/d= 9.4), the final pile settlement of (L/d= 6.3) is increased by 6%, whereas it is decreased 50% for (L/d= 12.5).

Behavior of Group of Plugged and Unplugged Pipe Piles in Soil Containing Cavities

Authors

FA Abdullah, Mohammed Y Fattah, Abdulaziz A. Al-Kifae

Publication date

2020/7/1

Journal

IOP Conference Series: Materials Science and Engineering

Volume
888
Issue
1
Pages
012068
Publisher
IOP Publishing

Description

The present study examines the effect of cavities on the pipe pile foundation settlement and capacity subjected to compressive axial loads and embedded in sandy soil. By inserting a prototype of cavity which is placed adjacent to the pile at different locations that lie at horizontal spacing between pile and cavity center to center defined by (X) and cavity depth from the soil surface by cavity depth (Y), the variation in cavity location was studied for all laboratory tests. The presence of cavity reduces the pile load capacity by different rates depending on its location. In group piles with of L/D= 15 with cavity at Y/L= 1 and X/D= 1.5, 2.5, the reduction is between (6.1% to 26%).

Improvement of Strength of soft Clay Soil by Using cement kiln dust, fly ash and Ceramic Dust waste (Times New Roman Bold 12)

Authors
Ghaidaa Kadhim Abd, Abdulaziz A. Al-Kifae

Publication date
2021/8/19
Journal
Turkish Journal of Computer and Mathematics Education (TURCOMAT)
Volume
12
Issue
14
Pages
2182-2196

Description

Soft clay soils have relatively low strength and high compressibility. For this reason, the construction of the the

Abstract: Soft clay soils have relatively low strength and high compressibility. For this reason, the construction of the subgrade in soft clay soils has encountered many difficulties. Expensive solutions are utilized in some engineering projects, which usually involve removing and replacing soft soils. Instead, land improvement is currently the best solution to such problems. this paper aim to decrease the use of Portland cement and lime as the most common stabilizers utilized for soft soils, use recycled waste materials and demolition and construction waste as an alternative to stabilize soft clay soils at south of Iraq. was use waste materials such as fly ash (FA), cement kiln dust (CKD) and Marble dust wastes (MDW) to improve soft clay soils in south of Iraq. Some standard laboratory geotechnical tests were conducted to examine some changes in the engineering properties of treated soils with waste cement

kiln dust (CKD), fly ash (FA) or ceramic dust waste (CDW) with proportions of (5%,10%,15%) by dry weight of soil. Laboratory tests performed on treated and untreated soil samples included standard compaction tests, Atterberg limits tests, and California Bearing Ratio (CBR) tests. The results showed that FA-soft clay soil samples and CKD-soft clay soil samples showed a decrease in liquid limits (LL%) and plasticity index (P.I%) and the increase in the plastic limits (P.L%) in addition to an increase in the maximum dry density (MMD) and a decrease in the optimum moisture content (OMC%) and an increase in the immersed and non-immersed (CBR) values. While the results of CDW-soft clay soil samples showed a decrease in liquid limits (L.L%), plastic limit (P.L%), the optimum moisture content (OMC%), plasticity index (P.I%) In addition to showed an increase in the maximum dry density (MDD) and an increase in the immersed and non-immersed CBR values. The data that emerged from the testing programs showed that (FA), (CKD) or (CDW) can be utilized to improve soft clay soil, but there is a certain percentage of using them in the improvement, as the best percentag e of (FA) was at (10%) by dry weight of soil and the best percentage for (CKD) and (CDW) they were at (15%) by dry weight of soil, but (CKD) stabilizer show much more improvement than (CDW) and (FA), while (CDW) shows greater improvement compared to (FA). In general, these stabilizers can be utilized to improve the geotechnical properties of soil. Keywords: Cement kiln dust Fly ash4 Ceramic dust waste.

Cavity Effects on Axially Loaded Single Pipe Piles Embedded in a Sand Deposit

Authors

Firas Abdulhadi Abdullah, Mohammed Y Fattah, A.A. Alkifae

Publication date

2021/9/21

Conference

2021 4th International Iraqi Conference on Engineering Technology and Their Applications (IICETA)

Pages

290-295

Publisher

IEEE

Description

A soil column that enter the tube hall when the pile advances through sand layer that form a column of soil through pile tube is well known as the (soil plug), while the piles driving process into the soil, so during this process of pile penetration. A frictional forces-resistant which induced through the inner tube walls and the soil inside the tube can be established and achieve a certain value to avoid further soil intrusion into the pile tube. A small scale cavity were preformed adjacent to the tube of pile at specified locations which located horizontally with a distance between the pile center and cavity center which defined as (X) and depth of cavity measured from the surface of soil by (Y) which mean cavity depth with variation in location of cavity for all laboratory tests had been studied. The pile bearing capacity was investigated with the presence of cavity. It was concluded in case of single pile that the removal of soil plug …

Controlling collapsibility potential by improving Iraqi gypseous soils subsidence: A Review study

Authors

Saadiyah Al-Zabedy, Abdulaziz A. Al-Kifae

Publication date

2020/3/1

Source

IOP Conference Series: Materials Science and Engineering

Volume

745

Issue

1

Pages

012107

Publisher

IOP Publishing

Description

Gypseous soils classified as the most difficult soil due to their complex and unexpected behaviour. Gypseous soils around the world, formed mainly in arid and semi-arid lands. In Iraq, gypsum soil covers 20-30% of total area of Iraq specifically, in western, south and southern west areas. For the soil engineer, it is of great importance to know properties of soil before designing and building any structure. Since the gypseous soil can collapse when the water run through, therefore, many Iraqi researchers have worked out to find the best methods to improve this kind of soil. This paper summarizes most of these studies and present chemical and physical treatment applied to gypsum soils in Iraq to improve bearing capacity of gypsum soils and reduce settlement and collapsibility, improve the Bearing capacity in present study improved AL Fallujah Gypseous soaked soil after using geogrid increase the Bearing capacity …

Behavior of pile embedded in different soil types under the effect of earthquake

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[2]Assistant Professor, Department of Civil Engineering, College of Engineering, Al-Nahrain University, Baghdad, Iraq

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Abstract. In the seismic areas, piles are often passed through shallow loose or soft soil deposits and rest on end bearing soils. Damages due to earthquakes in piles built in layered soils occurred close to interfaces separating layers with very different shear moduli. In this study 3D finite element analyses are performed to simulate a soil-pile system under earthquake excitation in different soil types. As an example, the soil profiles of active seismic zones in Iraq will be used. For this a data base was prepared for static and dynamic parameters of different Iraq soils which were gathered and typical profiles for north, middle and south of Iraq were established. The properties of soils were then used as input dynamic data for finite element program PLAXIS 3D 2013 to study the response of single pile foundation. As earthquake input data the recording one obtained from the April 20, 2012 earthquake which hit Ali Al-Gharbi in Missan Province in Iraq was used, because this was one of the influential earthquakes. As a result the maximum bending moment occurs at the influence of different soil layers, also according to the soil-pile interaction, the deflected shape have the same behavior of pile embedded in sand and clayey soil as well as the pile that embedded in two clayey soil layers with thin sandy layers in between.

Key words
pile behavior, earthquake, dynamic properties, and seismic zones.

1. Introduction

Many Post-earthquake reconnaissance works has shown that the settlement and tilting of piles-supported buildings in several cases causes pile damages. Pile damage had mostly happened where the soil conditions consisted of multi layers having different shear moduli. It is widely observed that piles are affected by both the kinematic bending moments induced by the surrounding soil and the movement of the superstructure (inertial forces). The building codes [1] and [2] describe pile design provisions that take in to account the combined effect of both mechanisms. One of the engineering challenges lies in the prediction of the maximum bending moment in the pile at an interface with a sharp stiffness contrast [3]. Predicting the behavior of piles and pile groups during earthquakes still remains a challenging task to geotechnical engineers. Therefore in the last decade it became very necessary to study the seismic behavior of piles in different active seismic zones around the world and also in Iraq. Therefore a database for all the soil parameters of Iraqi soils was collected. The geotechnical site investigations which had all the data required for Mohr- Coulomb model were chosen to be included into the above mentioned database. In addition the record for one of the strongest earthquake which hit Iraq in the latest years was chosen. For the analysis PLAXIS 3D 2013 program was used. Twenty models are simulated for five different seismic zones ('N' North, 'M' Middle, 'WS' Western south, 'ES' Eastern south and 'S' South) in Iraq. The variation of the bending moment and pile horizontal displacements, for the whole pile length is evaluated.

Properties of Swelling Soil Improved using Mixture of Polyethylene with Silica Fume and Cement Kiln Dust

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Abstract. Expansive soils (also known as shrink/swell soils) are encountered in various regions of the world. The behavior of this type of soils is quiet complex. As they fall in the category of 'problematic soils'. Swelling and shrinkage in soils occur as a result of the seasonal variations in climatic conditions which affect the water retention in soils. Climate change prediction shows that these problems may get worse in the future. This leads to more interest in this subject during the last few years, with an increasing attention, in experimental investigations, modeling, and field investigations. In order to reduce the pollution and to keep the environment clean and sustainable, waste and recycled materials are used in the current study to improve the undesirable characteristics of expansive soil samples in the lab. Therefore, several laboratory tests have been carried out to proof that using of a significant by-product material of the cement manufacturing process the cement kiln dust (CKD) is contributed in improving the properties of an expansive soils, silica fume material (a waste industrial material) is also be useful in reducing the effect of the shrink- swell in soils, and finally using a high density polyethylene polymer (PEHD) is showed a significant decreasing in swelling deformation and increasing in the unconfined compressive strength with some other considerable changes in the previous soil properties. The Polyethylene polymer may used to enhance the behavior of expansive soil and reduced the most common problem related to this soil (swelling potential). As well as, silica fume could be effectively used to improve the properties of expansive soil with specific limits. Therefore, the main aim of this study is to observe the ability of CKD with silica fume and polyethylene polymer in improving the characteristics of expansive soil. The results shows that using additives 10% of CKD, 5, 10, 15% of silica fume , and 5, 8, 10% of PEHD decreased liquid limit and plasticity index of an expansive soil, increased its plastic limit values, and also contributed in stabilizing the expansive soil by significantly reducing it swelling ability. The liquid limit and plasticity index are reduced from 88% to 53.2% and from 67.8% to 29.6% respectively by adding 10%CKD, 10%Silika fume and 10% of PEHD. And the swelling potential is decreased from 21.23% to 2.1% by adding these additives.

INTRODUCTION

Expansive soils are existed in different parts around the world. These soils shrink and swell during seasonal variation. Yilmaz,et, al. (2009) stated that "swelling potential of expansive clayey soils depends on reduction of overburden stress, unloading conditions, or exposure to water and increase in moisture content". The characteristics of the shrink-swell soils come from the existence of the clay minerals, when they become wet the clay particles absorb water and swell. However, when the water get out of them, the soil volume reduce with time. Shrinkage deformations in general occur due to drying of these soils, which is virtually change in a soil sample volume such as cracking, shrinkage and/or curling deformation. These deformation lead to many problems such as: preferential pathways for water flow and contaminant transport which are extremely dangerous in a lot of applications, for instance the performance of landfill covers and clay liners. Also, decreasing of the strength of soil and affect on other mechanical characteristics, slopes erosion that can also lead to landslides which impact both stability and performance of slopes and embankments, increase of the infiltration capability of soils (deep cracks during drying

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Treatment of Wastewater by Cement Kiln Dust

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Abstract

The use of cement kiln dust (CKD) as an inexpensive, abundant adsorbent for removing Cr^{+3} from simulated wastewater was investigated. CKD was obtained from Al-Kufa Cement Factory in Al-Najif Government.Experiments for adsorption/precipitation mechanism for Cr^{+3} were performed. The results show that substantial adsorption occur at pH values less than 4 for Cr^{+3}. A set of isothermal batch experiments were conducted in order to investigate the performance of CKD towered the adsorption of the Cr^{+3} ion from the aqueous solution. The results show that the best conditions for Cr^{+3}adsorption on CKD were 60 min, 200 rpm, 20 g/L CKD and pH value 4.

The adsorption isotherm curves show that the adsorption is of a favorable type. A good fitting was obtained between the adsorption isotherm Langmuir model and the Cr^{+3} experimental data. The maximum sorption capacity q_m for Langmuir model equal to 28.5mg/g CKD for Cr^{+3}.

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Design charts and equations of the frictional resistance of single pipe pile under static and seismic loads

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Saif Alzabeebee§, Suraparb Keawsawasvong¶ and Norazlan Khalid†

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Foundations can be exposed to seismic loads in addition to static loads in seismic active areas. Thus, it might be necessary in this situation to use deep foundations rather than shallow foundations in order to prevent bearing capacity failure, improve the system's dynamic stiffness, and/or minimize dynamic oscillations. In a seismically active area, the pile designer is expected to obtain at least the maximum earthquake-induced frictional resistance of the pile in order to achieve the necessary strength to ensure the structural integrity of the pipe pile is not compromised. However, determining the frictional resistance of the pipe pile is considered challenging. Therefore, in this study, design charts and new equations have been proposed to provide straightforward means to the designers to predict the frictional resistance of pipe piles embedded in dry and saturated cohesionless soils. The proposed charts and equations are for closed ended (CE) and open ended (OE) pipe piles. The charts have been developed based on the results of a validated three-dimensional finite element analysis. In addition, the equations were developed using regression analysis, where a high coefficient of correlation values is obtained (ranging between 0.94 and 0.98). The proposed predictive tools could assist designers in preliminary checks of the frictional capacity of pipe piles in seismic active areas.

Keywords: Design charts; pipe piles; frictional resistance; seismic excitation; numerical modeling.

||Corresponding author.

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DOI: 10.1142/S2047684123500239

World Scientific
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Scaling effects on the seismic response of a closed-end pipe pile embedded in dry and saturated coarse grain soils

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Foundations can be subjected to dynamic or seismic loads depending on their applications and the site being constructed in. The researchers concentrated their works on investigating the reasons of the significant damage of piles during seismic excitation. Based on the findings of laboratory experiments and other numerical analyses, such failures were referred to as the kinematic impact of the earthquake on piles since they were associated with discontinuities in the subsoil because of sudden changes in soil stiffness. The current work investigates the seismic response of closed-end (CE) pipe pile using three-dimensional finite element analysis, including the impact of the scaling-up model, acceleration-time history of the ground motion, and ground conditions. The numerical model is developed using a variety of scaling rules and the outputs of the available laboratory tests. The current results showed that the saturated sand models have larger pile deformation factors than dry sand models. Pile frictional resistance was evaluated numerically, and the entire findings were evaluated against the earlier work. Mainly, the frictional resistance around the pile shaft was lower than that at the pile tip, and the frictional resistance factor on the soil surface of dry soil models was larger than that of saturated soil models. Owing to the acceleration amplifications, the pile and soil suffered cycles of compression and tension stresses. A hysteresis loop is broader and flatter on

[‖]Corresponding author.

Journal of
Marine Science and Engineering

Article

Data-Driven Prediction of Maximum Settlement in Pipe Piles under Seismic Loads

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Abstract: The structural stability of pipe pile foundations under seismic loading stands as a critical concern, demanding an accurate assessment of the maximum settlement. Traditionally, this task has been addressed through complex numerical modeling, accounting for the complicated interaction between soil and pile structures. Although significant progress has been made in machine learning, there remains a critical demand for data-driven models that can predict these parameters without depending on numerical simulations. This study aims to bridge the disparity between conventional analytical approaches and modern data-driven methodologies, with the objective of improving the precision and efficiency of settlement predictions. The results carry substantial implications for the marine engineering field, providing valuable perspectives to optimize the design and performance of pipe pile foundations in marine environments. This approach notably reduces the dependence on numerical simulations, enhancing the efficiency and accuracy of the prediction process. Thus, this study integrates Random Forest (RF) models to estimate the maximum pile settlement under seismic loading conditions, significantly supporting the reliability of the previously proposed methodology. The models presented in this research are established using seven key input variables, including the corrected SPT test blow count $(N_1)_{60}$, pile length (L), soil Young's modulus (E), soil relative density (Dr), friction angle (ϕ), soil unit weight (γ), and peak ground acceleration (PGA). The findings of this study confirm the high precision and generalizability of the developed data-driven RF approach for seismic settlement prediction compared to traditional simulation methods, establishing it as an efficient and viable alternative.

Keywords: pipe piles; settlement; data-driven prediction; random forest; seismic loads

Citation: Rasheed, S.E.; Al-Jeznawi, D.; Al-Janabi, M.A.Q.; Bernardo, L.F.A. Data-Driven Prediction of Maximum Settlement in Pipe Piles under Seismic Loads. *J. Mar. Sci. Eng.* **2024**, *12*, 274. https://doi.org/10.3390/jmse12020274

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1. Introduction

The phenomenon of seismic-induced pile settlement is a significant concern in structural engineering and foundation design due to its potential impact on the stability and performance of buildings and infrastructure during and after seismic events [1]. Pile foundations are extensively employed in various infrastructure projects, such as ports, offshore bridges, and offshore wind power generation [2]. Among these, pipe piles have gained considerable interest due to their handling, simplification, and quality at low costs. In the extreme marine environment, a foundation not only faces the operational load transmitted by the structure but also the cyclic loading induced by waves and wind. Assessing the stability and deformation of the foundation under such cyclic loading is crucial, and employing the appropriate methods for this evaluation holds significant importance [3]. When subjected to seismic forces, the ground undergoes dynamic movements, which can result in the settlement of the piles [4]. This settlement, in turn, affects the stability of

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Review

Exploring Shear Wave Velocity—N_{SPT} Correlations for Geotechnical Site Characterization: A Review

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Abstract: Shear wave velocity (V_s) is a critical parameter in geophysical investigations, micro-zonation research, and site classification. In instances where conducting direct tests at specific locations is challenging due to equipment unavailability, limited space, or initial instrumentation costs, it becomes essential to estimate V_s directly, using empirical correlations for effective site characterization. The present review paper explores the correlations of V_s with the standard penetration test (SPT) for geotechnical site characterization. V_s, a critical parameter in geotechnical and seismic engineering, is integral to a wide range of projects, including foundation design and seismic hazard assessment. The current paper provides a detailed analysis of the key findings, implications for geotechnical engineering practice, and future research needs in this area. It emphasizes the importance of site-specific calibration, the impact of geological background, depth-dependent behavior, data quality control, and the integration of V_s data with other geophysical methods. The review underlines the continuous monitoring of V_s values due to potential changes over time. Addressing these insights and gaps in research contributes to the accuracy and safety of geotechnical projects, particularly in seismic-prone regions.

Keywords: shear wave velocity (V_s); standard penetration test (SPT); empirical correlations; geophysical investigation; seismic wave; geotechnical applications; challenges and uncertainties

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1. Introduction

The accurate characterization of geotechnical properties at a construction site is a fundamental prerequisite for ensuring the stability and safety of underground geotechnical engineering projects. Several factors influence how destructive an earthquake can be, including its depth, magnitude, fault type, distance from the seismic source to the site, groundwater level, and local site conditions. The type of soil beneath a structure affects the behavior of ground movements during an earthquake between the depth of the bedrock and the surface. This is known as the local site effect [1]. The key characteristics of intense ground shaking, such as amplitude, frequency content, and duration, are significantly impacted by local site conditions. The degree of their influence is closely tied to the material properties of the subsurface [2]. Since earthquakes are difficult to predict, conducting a site-specific seismic hazard analysis is a practical approach in earthquake engineering [3]. One of the most crucial parameters for assessing the earthquake risk at a site is the shear wave velocity (V_S) specific to that location. The V_S value for the upper 30 m of soil is employed to estimate various dynamic properties of the soil [4–6]. Site-specific V_S characteristics provides insights into how the site is expected to respond during seismic shaking. V_s reflects

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TECHNICAL PAPER

Developing Vs-NSPT Prediction Models Using Bayesian Framework

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Accepted: 3 November 2023

Abstract

In earthquake engineering, shear wave velocity (Vs) is an effective parameter for quantifying the ground's effects due to shaking. The determination of Vs is usually done by costly and time-consuming geophysical testing; accordingly, previous research endeavors focused on developing empirical relationships between Vs. and other soil geotechnical properties like Standard Penetration Test (SPT) blow count (N_{SPT}), depth, and vertical effective stress. However, previous models might be biased for the data from regions of these models, and most of them do not account for uncertainty. Consequently, this research aims to develop a reliable Vs-N_{SPT} correlation relationship using the Bayesian hierarchical model approach. For that reason, a comprehensive dataset of 321 Vs-N_{SPT} data pairs was compiled from different locations to develop a region-specific correlation model; after that, the models were validated using a different dataset of 174 data pairs from the literature. It was concluded that the developed models are less biased toward outliers in the data across different regions, relatively more accurate, and explicitly quantify uncertainty in the developed relationships, providing a more reliable approach for Vs-N_{SPT} correlation.

Keywords Shear wave velocity · Standard penetration test · Region-specific correlation · Hierarchical Bayesian · Lumped model

1 Introduction

Shear wave velocity (Vs) is a soil parameter that is widely used for geological layer mapping, preliminary construction site identification studies, identifying soil dynamic characteristics, determining the potential for liquefaction, and identifying cavities, tunnels, and sinkholes (Seed et al. 1983; Leparoux et al. 2000; Thitimakorn and Channoo 2012). The determination of the Vs of soils is an essential component in geotechnical and seismic analyses as it is required for identifying rock mass and structure, porosity, and dynamic characteristics. Upom et al. (2019) stated

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Numerical Assessment of Pipe Pile Axial Response under Seismic Excitation

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ABSTRACT

In engineering, the ground in seismically active places may be subjected to static and seismic stresses. To avoid bearing capacity collapse, increasing the system's dynamic rigidity, and/or reducing dynamic fluctuations, it may be required to employ deep foundations instead of shallow ones. The axial aptitude and pipe pile distribution of load under static conditions have been well reported, but more study is needed to understand the dynamic axial response. Therefore, this research discusses the outputs of the 3D finite element models on the soil-pile behavior under different acceleration intensities and soil states by using MIDAS GTS NX. The pipe pile was represented as a simple elastic, and a modified Mohr-Coulomb model was used to describe the surrounding soil layers. When low acceleration was introduced in the early stages, positive frictional resistance (i.e., in dry soil, the FR was about 1.61, 1.98, and 0.9 Mpa under Kobe, Halabja, and Ali Algharbi earthquakes, respectively) was recorded. However, as the acceleration increased (from PGA of 0.1 g and 0.102 g to 0.82 g), the resistance reduced and eventually turned negative. In this study, both internal and exterior frictional resistance were measured. It was found that the soil state and acceleration intensity both have a noticeable effect on the failure process, i.e., the maximum plug soil resistance decreased by about 55% by changing the soil condition from a dry to a saturated state under the recorded data of the Kobe earthquake. A rough estimation of the long-term settlements at the shaken soil surface is meant to be included in the results of this research.

Keywords: Axial response, Seismic load, 3D finite element, Frictional resistance, Settlement.

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Three-dimensional finite element analysis of the effect of soil liquefaction on the seismic response of a single pile

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Soil liquefaction is considered as one of the most significant issues that leads to failure of shallow and deep foundations. However, the effect of liquefaction on the seismic response of piles still poorly understood. Therefore, this research examines the seismic response of a pile embedded in soil stratum of saturated fine-grained soils. Midas GTS/NX is used to carry out the number assessment. In addition, the modified UBCSAND soil constitutive model is used to depict the nonlinear features of saturated sand during earthquake waves. The developed three-dimensional model is first validated using the results of a shaking table test of a pile embedded in coarse-grained soil, where good agreement is obtained between the finite element model and the experimental results for the displacement, acceleration, and liquefaction ratio demonstrated good agreement. Furthermore, the orientations of the vectors produced by the numerical study, that matched a global

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Numerical Assessment of Pipe Pile Response under Seismic Excitation

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Abstract

The axial capacity and pile transference of loads under static loading have both been well reported, but further research is needed to understand the dynamic lateral responses. The pile load imposed during an earthquake may increase, but the soil's ability to support it may fall as a side effect of the vibration leading to more settlement. The key objective of this work is to identify what led to the substantial lateral destruction of the piles during the seismic event due to the kinematic effects. These failures were related to discontinuities in the subsoil as a result of sudden changes in soil strength due to shaking. The kinematic stresses exerted in a single pipe pile constructed in two sand layers under two different situations (dry and saturated states) are investigated in this study using numerical modeling. The bending moments were higher in the saturated sand soil than in the dry one which may be attributed to liquefaction. Generally, the acceleration increased through the loose layer (from bottom to top), and then significantly settled within the dense layer. It could be shown that using this modeling, one can estimate how a pile foundation will behave under "kinematic" loading driven by earthquakes. Therefore, the design and installation of drilled aluminum or steel piles in sand soil could make use of these present observations.

Keywords: Kinematic Response, Seismic Load, 3D Finite Element, Lateral Response, Maximum Acceleration.

التقييم العددي لاستجابة الركيزة الأنبوبية تحت الإثارة الزلزالية

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الخلاصة:

تمت دراسة قابلية تحمل الركيزة للاحمال المحورية ونقل الركيزة للأحمال تحت التحميل الثابت بشكل تفصيلي من قبل باحثين سابقين، ولكن هناك حاجة إلى مزيد من البحث لفهم الاستجابات الافقية للأحمال الديناميكية. قد يرتفع حمل الركيزة المفترض أثناء الزلزال، لكن قدرة التربة على دعمه قد تنخفض نتيجة للاهتزاز مما يؤدي إلى مزيد من الهبوط. ان الهدف الرئيسي لعمل الباحثين هو تحديد ما الذي أدى إلى تدمير كبير للركائز أثناء الحدث الزلزالي. بناءً على نتائج التجارب المختبرية والحسابات العددية الأخرى، تمت الإشارة إلى هذه الأضرار على أنها التأثيرات الحركية للزلزال على الركائز. كانت هذه الإخفاقات مرتبطة بفوالق في باطن الأرض نتيجة للتغيرات المفاجئة في قوة التربة. تمت دراسة الضغوط الحركية التي تؤثر في ركيزة انبوبية مفردة في تربة مكونة من طبقتين من الرمل في حالتين مختلفتين (حالة جافة ومشبعة) في هذه الدراسة باستخدام النمذجة العددية. وفقًا لنتائج النمذجة والتحليل العددي، تم العثور على أقصى عزم للانحناء في الطبقة الرملية الرخوة على مسافة حوالي ٣,٥ متر تحت سطح التربة، ثم تناقصت بعد ذلك حتى أصبحت سالبة في الطبقة الرملية الكثيفة. وفقا لما تم الوصول اليه من نتائج بالامكان التنبؤ بكيفية تصرف الأساسات العميقة تحت الحمل "الحركي" الذي تسببه الزلازل. لذلك، يمكن أن تكون هذه الدراسة ذات اهمية في تصميم وتركيب ركائز الألمنيوم أو الصلب في تربة رملية.

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TECHNICAL PAPER

Response of Pipe Piles Embedded in Sandy Soils Under Seismic Loads

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Abstract

This paper studies the seismic response of open-ended (OE) pipe piles subjected to static and seismic loads using three-dimensional finite element analysis. The influence of the pipe material, soil saturation, slenderness ratio and earthquake shaking intensity were examined. The finite element model was validated against the findings of the available laboratory experiments. In addition, four different earthquake records (Kobe, El Centro, Halabja, and Ali Algharbi) were considered to simulate different shaking scenarios. In general, a scatter of the relationship between the peak ground acceleration (PGA) and the liquefaction ratio was observed. Furthermore, the results of the numerical study demonstrated that the bending moment of the pile is greater in saturated soil models when compared to the dry soil models for all of the scenarios used in this study. Ultimately, the current study showed that the frictional resistance of the pile increased during seismic excitation under dry soil condition regardless of the selected slenderness ratio, which is due the densification of the soil caused by the shaking. However, the frictional resistance is reduced due to seismic effects for the case of the saturated soil condition due to the decrease of the soil effective stress caused by the onset of liquefaction. Overall, the plug frictional resistance was much higher than the external pile frictional resistance. Thus, the piles in both conditions (dry and saturated) experienced plugged mode. In light of this, preliminary design charts were developed to estimate the liquefaction ratio, lateral displacement, bending moment, and frictional resistance of (OE) piles using only slenderness ratio and earthquake intensity.

Keywords Slenderness ratio · Acceleration history · Liquefaction · Frictional resistance · Bending moment · Open-ended pile

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Seismic performance assessment of single pipe piles using three-dimensional finite element modeling considering different parameters

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Abstract. The present study investigates the non-linear soil-pile interaction using three-dimensional (3D) non-linear finite element models. The numerical models were validated by using the results of extensive pile load and shaking table tests. The pile performance in liquefiable and non-liquefiable soil has been studied by analyzing the liquefaction ratio, pile lateral displacement (LD), pile bending moment (BM), and frictional resistance (FR) results. The pile models have been developed for the different ground conditions. The study reveals that the results obtained during the pile load test and shaking cycles have good agreement with the predicted pile and soil response. The soil density, peak ground acceleration (PGA), slenderness ratio (L/D), and soil condition (i.e., dry and saturated) are considered during modeling. Four ground motions are used for the non-linear time history analyses. Consequently, design charts are proposed depended on the analysis results to be used for design practice. Eleven models have been used to validate the capability of these charts to capture the soil-pile response under different seismic intensities. The results of the present study demonstrate that L/D ratio slightly affects the lateral displacement when compared with other parameters. Also, it has been observed that the increasing in PGA and decreasing L/D decreases the excess pore water pressure ratio; i.e., increasing PGA from 0.1 g to 0.82 g of loose sand model, decrease the liquefaction ratio by about 50%, and increasing L/D from 15 to 75 of the similar models (under Kobe earthquake), increase this ratio by about 30%. This study reveals that the lateral displacement increases nonlinearly under both dry and saturated conditions as the PGA increases. Similarly, it is observed that the BM increases under both dry and saturated states as the L/D ratio increases. Regarding the acceleration histories, the pile BM was reduced by reducing the acceleration intensity. Hence, the pile BM decreased to about 31% when the applied ground motion switched from Kobe (PGA=0.82 g) to Ali Algharbi (PGA=0.10 g). This study reveals that the soil conditions affect the relationship pattern between the FR and the PGA. Also, this research could be helpful in understanding the threat of earthquakes in different ground characteristics.

Keywords: finite element models; peak ground acceleration; seismic response; slenderness ratio; soil-pile interaction; soil characteristics

1. Introduction

The foundation is the sub-structural part of any structure, constructed to transfer a superstructure load to the strata/soil. Based on the functional requirements, the foundations are two types, i.e., shallow and deep. The shallow foundations are usually established to transfer the structural load to hard/rocky strata within a small depth. Conversely, the deep foundations are commonly constructed on soft soil or strata with poor bearing capacity. The pile and drilled pier foundations are the types of deep foundations. Both foundations are designed as per the functional and structural requirements. Because of these requirements, several researchers have designed piles with different specifications for different ground conditions (Zhang *et al.* 2020, Khan *et al.* 2021). Ghiasi and Eskandari (2023) have used a variety of analytical, numerical (finite element and finite difference) and field methods to calculate the bearing capacity of piles considering different pile lengths and diameters. The authors could identify the proper behavioral models for soil and piles and the findings that they produced were well matched. It has been stated that it is reasonable and appropriate to a considerable extent that numerical models may minimize costly loading tests on piles. Pipe piles are regularly used because it is widely available, less expensive, and can be installed safely. Also, the pipe piles are excellent sub-structural elements to transfer/ bear the load, and it does not require any additional elements for the support, which decreases the project cost. Al-Jeznawi *et al.* (2023) designed and analyzed the closed-

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TECHNICAL PAPER

Investigation of the Scale Effect on the Static and Seismic Response of an Opened Ended Pipe Pile

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Abstract

The effect of scale factor on the static and seismic response of an open-ended pipe pile is examined in this study with a focus on the pile plugging phenomenon using finite element analysis. The scenarios of open-ended pipe piles embedded in dry and saturated cohesionless soils were analyzed. The effects of different scaling factors (1 (small physical model), 10, 20, 35 (full-scale)) were considered. The results revealed that the maximum frictional resistance is observed at the tip of the soil plug and the maximum liquefaction ratio is observed around the pile shaft and near the soil surface. In addition, the liquefaction ratio is observed to increase with increasing ground motion intensity, with the maximum value occurring at the peak ground acceleration, followed by a significant pile settlement. Overall, the main outputs of the scaled models were normalized to illustrate the differences in the results and provide insight into the scaling effects. Importantly, scaling factors were proposed for open-ended pipe piles embedded in dry and cohesionless soils. These factors could be used to extrapolate the results of small-scale models or to scale down full-scale problems to enable their modeling in 1-g small-scale models.

Keywords Scaling factors · Plugging · Static-seismic loading · Arching · Liquefaction

Abbreviations

SPT	Standard penetration test
FEMs	Finite-element Methods
R	Strength correction factor
D_{inner}	Inside diameter of the pile
D_{outer}	External diameter of the pile
D_r	Relative density
λ	Scaling factor

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TECHNICAL PAPER

Numerical Study of the Seismic Response of Closed-Ended Pipe Pile in Cohesionless Soils

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Abstract
Closed-ended pipe piles are usually preferred over traditional piles because they are simpler and easier to handle. Also, their quality could be verified easily and at a low cost. However, the seismic response of these piles is still not clearly understood. Therefore, this paper examines the seismic performance of closed-ended pipe piles embedded in dry and saturated cohesionless soils using a validated three-dimensional finite element model. The effect of the pile material, slenderness ratio, peak ground acceleration (PGA), and soil state (i.e., dry or saturated) are considered. Four earthquake records have been used in the stress-nonlinear time history coupled analysis. It is found that the pore water pressure ratio rises as the PGA or the pile slenderness ratio increases. In addition, the lateral displacement is found to increase nonlinearly with the increase of the PGA for both dry and saturated conditions. This lateral displacement also increases as the slenderness ratio rises. A similar trend of that noticed for the lateral displacement is also noticed for the bending moment. However, the trend of the relationship between the shaft resistance and the PGA is found to depend on the soil state and soil density. Importantly, design charts have been proposed based on the results of the present study to make the results useful in the future to designers and researchers.

Keywords Slenderness ratio · Acceleration history · Liquefaction · Frictional resistance · Bending moment · Closed-ended pile

1 Introduction

Pile foundations are frequently used to transmit the loads of the structures to the ground, especially in seismically active areas, where there are many types of piles that are usually used, such as concrete piles, closed-ended pipe piles, and open-ended pipe piles.

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TECHNICAL PAPER

Analysis of Slope Stabilized with Piles Under Earthquake Excitation

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Abstract
A slope may fail as a result of overstress or a decrease in the soil's shear strength. Piles in single or multiple rows have been widely used as earth retaining systems to stabilize active landslides and improve the slope stability. However, limited studies are available on the effect of pile stabilization on the seismic stability of slopes. Therefore, this study presents two-dimensional and three-dimensional finite element analyses based on the strength reduction technique to investigate the seismic response of slopes stabilized using piles. The effect of the length and configuration of the piles on the stability of the slopes is examined, where five configurations are considered. These configurations are single pile, two piles distributed in one row, four piles distributed in one row, four piles distributed in two rows, and eight piles distributed in two rows. These cases have been compared with a reference case of an unreinforced slope in both dry and saturated conditions. It was found that the number of piles has a remarkable influence on the mobilized factor of safety, and its influence is higher than the pile length. In addition, using the piles in two rows increases the safety compared to using the same number of piles but in one row. Furthermore, the slope yielded a higher factor of safety in the dry cases compared to the saturated cases. More importantly, it was found that the earthquake remarkably affected the mobilized factor of safety of the slope, and thus, the real intensity of the earthquake should be utilized in the assessment and design of slopes. The results presented in this paper are useful to engineers working on the stabilization, assessment, and design of slopes in areas prone to earthquakes.

Keywords Slope soil · Piles · Seismic excitation · 2D and 3D models · Strength reduction method · Safety factor

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Simple Variable Step Size LMS Algorithm for Adaptive Identification of IIR Filtering System

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Abstract

This paper proposes a simple variable step size Least Mean Square (LMS) algorithm for adaptive identification of Infinite-Impulse-Response (IIR) filtering system. The proposed algorithm is called Fast Variable Step Size LMS (FVSSLMS) which incorporates a recursively variable adaptation step size based on error square multiplying by a constant. The simulation results show better performance than traditional LMS and Normalized LMS (NLMS) algorithm in terms of fast convergence time and less misadjustment in a steady state.

I. Introduction

Adaptive (IIR) filters are contemplated as replacements for adaptive Finite-Impulse-Response (FIR) filters when the desired filter can be more economically modeled with poles and zeros than with all-zero forms of an FIR tapped-delay line [1].

IIR filter structures require significantly less taps and delays than FIR structures which meet equivalent specifications. Particularly for modeling signals and systems having sharp spectral transitions. A major impediment to implementation of adaptive IIR filters ensures stability on-line operation including adaptation and at a steady state. If it is assumed that the filter is fixed at each time an instant, then its stability is ensured by requiring that the filter poles be located inside the unit circle [2].

Many of the known convergence results for adaptive IIR algorithms require that the filter should be operated in a system identification configuration such that the unknown system can be represented by a stable rational transfer function [3].

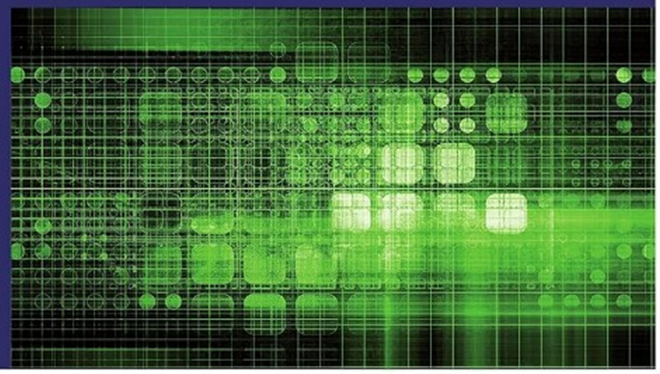
The LMS algorithm has been focused on much study due to its simplicity and robustness, leading to its implementation in many applications. It is well known that the final excess Mean-Square-Error (MSE) is directly proportional to the adaptation step size of the LMS while the convergence time increases as the step size decreases. This inherent limitation of the LMS necessitates a compromise between the opposing fundamental requirements of fast convergence rate and small misadjustment demanded in most adaptive filtering applications. As a result, researchers have constantly looked for alternative means to improve its performance. One popular approach is to employ a time varying step size in the standard LMS weight update recursion [4-10].

This is based on using large step-size values when the algorithm is far from the optimal solution, thus speeding up the convergence rate. When the algorithm is near the optimum, small step-size values are used to achieve a low level of misadjustment, as a result achieving better overall performance. This can be obtained by adjusting the step-size value in accordance with some criterion that can provide an approximate measure of the adaptation process state [4, 11].

In this paper, a time-varying step size is chosen due to its powerful effect on the performance of the system. Moreover, the structure of the system identification will not be changed, and this technique requires fewer overheads in computations, which is important factor for hardware implementation. The proposed algorithm in this paper is called Fast Variable Step Size LMS (FVSSLMS) algorithm. The value of the time-varying step size in this algorithm is adjusted according to the square of the current estimation errors. The proposed algorithm shows good performance in terms of fast convergence and low level of misadjustment compared with LMS and another variable step size algorithm, which is called (NLMS).

This paper is organized as follows; Section II gives the adaptive LMS & NLMS algorithms for IIR filter, while section III presents the proposed algorithm FVSSLMS. Section IV demonstrates the performance of the proposed algorithm

A Fast Variable Step Size LMS (FVSSLMS-1) algorithm is proposed, which overcomes and avoids these drawbacks. In this algorithm, an appropriate time varying of the step size is calculated based on gradually decreasing maximum step size to the minimum value. This time varying step size is based on the square value of the current estimation error. A comparison between Least Mean Square (LMS), proposed, and another variable step size Normalized Least Mean Square (NLMS), adaptive algorithms are carried out. System identification was built and training using MATLAB simulation program as a form of software to test the right operation of adaptive system identification.



Karam Magazachi
Thamer M. Jamel

Performance Evaluation and Enhancement of an Adaptive IIR Filter

Master degree university of Technology, Major: Electrical and Electronic Engineering. Digital communications, wireless communications, Antenna, FIR filters, Adaptive Algorithms,System Identification, Noise Cancellation, Echo Cancellation.Professional usage of MATLAB Simulation Package, Good background in (VBA) Visual Basic for Application

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Moisture Susceptibility and Fatigue Performance of Hydrated Lime–Modified Asphalt Concrete: Experiment and Design Application Case Study

Ahmed F. Al-Tameemi, Ph.D.[1]; Yu Wang, Ph.D.[2]; Amjad Albayati, Ph.D.[3]; and Jonathan Haynes[4]

Abstract: Hydrated lime has been recognized as an effective additive used to improve asphalt concrete properties in pavement applications. However, further work is still needed to quantify the effect of hydrated lime on asphaltic concrete performance under varied weather, temperature, and environmental conditions and in the application of different pavement courses. A research project was conducted using hydrated lime to modify the asphalt concretes used for the applications of wearing (surface), leveling (binder), and base courses. A previous publication reported the experimental study on the resistance to Marshall stability and the volumetric properties, the resilient modulus, and permanent deformation at three different weather temperatures. This paper reports the second phase of the experimental study for material durability, which investigated the effect of hydrated lime content on moisture susceptibility when exposed to a freeze-thaw cycle, and fatigue life. The experimental results showed an improvement in the durability of the modified asphalt concrete mixtures. Optimum hydrated lime contents for different course applications are suggested based on the series experimental studies. Finally, the advantage of using the optimum mixtures for a pavement application is demonstrated. **DOI: 10.1061/(ASCE)MT.1943-5533.0002634.** © *2019 American Society of Civil Engineers.*

Author keywords: Asphalt concrete; Hydrated lime; Durability; Moisture susceptibility; Fatigue life; Pavement design.

Introduction

Moisture damage, fatigue cracking, and accumulated permanent deformation (rutting) are the three major distresses in property deterioration and reduction in durability of flexible pavements. To address these problems, hydrated lime $[Ca(OH)_2]$ (HL) has proven to be an effective additive that is able to improve the mechanical properties and durability of asphalt concrete in pavement applications (Lesueur et al. 2016). Previous studies found that asphalt concretes with added hydrated lime, which is normally used as a partial substitute for the conventional filler, limestone, showed a reduction in hardening age; an increase of flexural stiffness and resilient modulus at moderate and high temperatures; and improved ability to resist permanent deformation (Sebaaly et al. 2001; Little et al. 2006; Albayati 2012; Albayati and Ahmed 2013). Hydrated lime displays a significant effect on the volumetric properties of concrete mixtures. A high hydrated-lime content corresponds to a high asphalt content for mixtures of optimum properties (Albayati 2012). This means that the use of hydrated lime has less influence on the quantity of the main binder component of asphalt concrete. Compared with other conventional mineral fillers, such as fly ash and phosphogypsum, hydrated lime showed greater improvement in stiffness and rutting resistance of the modified asphalt concrete (Al-Suhaibani et al. 1992; Satyakumar et al. 2013).

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STRESS-SWEEP TEST TO EVALUATE MODIFIED ASPHALT BINDER WITH ELASTOMER AND PLASTOMER POLYMERS.

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Keywords: Stress-Sweep test, modified binder, Fatigue Resistance, Dissipated Energy.

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A review on hybrid fiber reinforced concrete pavements technology

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Abstract

The problems of soil-structure interaction involve different members or different materials behave together under applied loading. In the case of concrete pavement resting on soil under traffic loading, both concrete and soil will deform. Rigid Pavements are made of Portland Cement Concrete (PCC). It serves out two aims, to maintain a durable surface with comfortable driving for vehicles. The second purpose is to decrease the stresses on the layers of pavement beneath the surface such as subbase and subgrade. Concrete is considered a weak material in resisting tensile stresses. Therefore, when low tensile stresses are applied, rigid pavement begins to crack effortlessly. In concrete pavement, the usage of different kinds of fiber reinforcement could be an effective technique to improve these properties. Numerous kinds of fibers are utilized in the concrete pavement to behave as an alternative to ordinary reinforcement. They may differ in material like steel or plastic and could be in many shapes, and dimensions. The addition of fibers is during the mixing when the concrete is still fresh. The incorporation of different sorts of fibers could be a significant step in diminishing the cracks and achieving a higher performance of concrete. Two kinds of fibers or even more than two can be combined to achieve a mixture that produces profits for each type of fiber in this composite. In this paper, an intensive review was made to demonstrate the forms of distresses that could happen in concrete (rigid) pavement and the impact of incorporating different kinds of fibers into the concrete to enhance the concrete ability to eliminate or even delay the process of failure.

1. Introduction

The pavement may be defined as a relatively stable layer constructed above the natural soil for suitable distribution of wheel load and provides support to the wearing surface [1]. In history, the pavements have been divided into two types; flexible and rigid pavements depending on the way of transferring loads to the foundation soil. For flexible pavements, there is a gradual stiffness that increases from the foundation soil to the wearing way, which leads to high stress on the soil because the load is decadent over a relatively small area. On the contrary, in rigid pavements, the stresses on the soil are smaller because the stiffness of the road base is bigger than that of the soil. The main advantages of using Portland Cement

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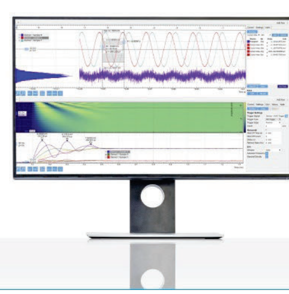

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Nonlinear Finite Element Analysis of Fiber Reinforced Concrete Pavement under Dynamic Loading

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ABSTRACT

The analysis of rigid pavements is a complex mission for many reasons. First, the loading conditions include the repetition of parts of the applied loads (cyclic loads), which produce fatigue in the pavement materials. Additionally, the climatic conditions reveal an important role in the performance of the pavement since the expansion or contraction induced by temperature differences may significantly change the supporting conditions of the pavement. There is an extra difficulty because the pavement structure is made of completely different materials, such as concrete, steel, and soil, with problems related to their interfaces like contact or friction. Because of the problem's difficulty, the finite element simulation is the best technique incorporated in the analysis of rigid pavements. The ABAQUS software was used to conduct the response of previously tested specimens under different loading conditions. Good agreement between the laboratory and finite element results was observed. The maximum differences between experimental and finite element outcomes in terms of ultimate loads and ultimate deflection for rigid pavements under monotonic loading are 6% and 8%, respectively, and 10% and 18% respectively for the repeated load.

Keywords: rigid pavements, fiber concrete, finite element

تحليل العناصر المحدودة غير الخطية للتبليط الخرساني المسلح المقوى بالألياف تحت التحميل الديناميكي

هديل محمود شاكر
باحث
كلية الهندسة جامعة النهرين

د.عادل عبد الامير العزاوي
استاذ
كلية الهندسة جامعة النهرين

د. احمد فرحان التميمي
مدرس
كلية الهندسة جامعة النهرين

الخلاصة

يعتبر تحليل الأرصفة الصلبة مهمة معقدة لأسباب عديدة. أولاً ، تشمل ظروف التحميل تكرار أجزاء من الأحمال المطبقة (الأحمال الدورية) ، والتي تؤدي إلى إجهاد مواد الرصف. بالإضافة إلى ذلك ، تكشف الظروف المناخية عن دور مهم في أداء الرصيف حيث أن التمدد أو الانكماش الناجم عن اختلاف درجات الحرارة قد يغير بشكل كبير الظروف الداعمة للرصيف. هناك صعوبة

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RESEARCH ARTICLE

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Direct tensile test evaluation and characterization for mechanical and rheological properties of polymer modified hot mix asphalt concrete

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Abstract

Using polymer to modify asphalt binder for better performance has become popular in pavement engineering, for which to evaluate the effect of polymer addition on the properties of the asphalt concrete is essential for mix design. Conventional mechanical test methods, primarily using bending of beams and indirect splitting, are not only materially and timely costly and labor intensive but also provide no direct information for the viscoelastic and rheological characteristics of the materials. This paper reports a study using direct tensile test (DTT) to evaluate the effect of polymer on both mechanical and rheological properties of modified asphalt concrete. Two types of polymers, which are styrene-butadiene-styrene (SBS), and a mixture of SBS and polyvinyl chloride (PVC), were investigated on two mixes using fine and coarse aggregates, respectively. It has been found that SBS generates improvement for both mechanical and rheological properties of hot mix asphalt concrete. However, using a hybrid mixture of SBS and PVC shows that PVC can further improve the mechanical properties, but deteriorate the toughness of the asphalt concrete. At the end, a simple quadric polynomial model has been proposed to characterize the combined SBS and PVC effects for the sake of the guidance for mix design.

KEYWORDS

asphalt concrete, direct tensile test, polymer modification, tensile toughness

1 | INTRODUCTION

Hot mix asphalt (HMA) concrete, in general, is composed of asphalt binders, aggregates, and air voids, in which the aggregates amount up to 90%–96% of total weight.[1,2] The tensile strength of HMA concrete plays a critical role deciding the performance of the asphalt concrete and constructed pavement when exposed to prevailing traffic and environmental conditions.[3,4] Improving the material properties of asphalt mixes has been a constant effort, in both pavement construction and repair, to elongate the life span of roads, which consequently helps to reduce the cost of pavement maintenance.[5]

Asphalt binder modification using polymer and asphalt concrete mixture modification using mineral additive are two effective techniques popularly adopted in engineering practice and under intensive research. Adding polymer into asphalt binder was found not only enhanced the mechanical property and durability of the binder itself but also improved its binding strength with the mineral aggregates of concrete.[6] However, it was found that concrete mixes using styrene-butadiene-

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ABSTRACT

The analysis of rigid pavements is a complex mission for many reasons. First, the loading conditions include the repetition of parts of the applied loads (cyclic loads), which produce fatigue in the pavement materials. Additionally, the climatic conditions reveal an important role in the performance of the pavement since the expansion or contraction induced by temperature differences may significantly change the supporting conditions of the pavement. There is an extra difficulty because the pavement structure is made of completely different materials, such as concrete, steel, and soil, with problems related to their interfaces like contact or friction. Because of the problem's difficulty, the finite element simulation is the best technique incorporated in the analysis of rigid pavements. The ABAQUS software was used to conduct the response of previously tested specimens under different loading conditions. Good agreement between the laboratory and finite element results was observed. The maximum differences between experimental and finite element outcomes in terms of ultimate loads and ultimate deflection for rigid pavements under monotonic loading are 6% and 8%, respectively, and 10% and 18% respectively for the repeated load.

Keywords: rigid pavements, fiber concrete, finite element

تحليل العناصر المحدودة غير الخطية للتبليط الخرساني المسلح المقوى بالألياف تحت التحميل الديناميكي

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الخلاصة

يعتبر تحليل الأرصفة الصلبة مهمة معقدة لأسباب عديدة. أولاً ، تشمل ظروف التحميل تكرار أجزاء من الأحمال المطبقة (الأحمال الدورية) ، والتي تؤدي إلى إجهاد مواد الرصف. بالإضافة إلى ذلك ، تكشف الظروف المناخية عن دور مهم في أداء الرصيف حيث أن التمدد أو الانكماش الناجم عن اختلاف درجات الحرارة قد يغير بشكل كبير الظروف الداعمة للرصيف. هناك صعوبة

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RESEARCH ARTICLE

Polymer COMPOSITES

Direct tensile test evaluation and characterization for mechanical and rheological properties of polymer modified hot mix asphalt concrete

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Abstract

Using polymer to modify asphalt binder for better performance has become popular in pavement engineering, for which to evaluate the effect of polymer addition on the properties of the asphalt concrete is essential for mix design. Conventional mechanical test methods, primarily using bending of beams and indirect splitting, are not only materially and timely costly and labor intensive but also provide no direct information for the viscoelastic and rheological characteristics of the materials. This paper reports a study using direct tensile test (DTT) to evaluate the effect of polymer on both mechanical and rheological properties of modified asphalt concrete. Two types of polymers, which are styrene-butadiene-styrene (SBS), and a mixture of SBS and polyvinyl chloride (PVC), were investigated on two mixes using fine and coarse aggregates, respectively. It has been found that SBS generates improvement for both mechanical and rheological properties of hot mix asphalt concrete. However, using a hybrid mixture of SBS and PVC shows that PVC can further improve the mechanical properties, but deteriorate the toughness of the asphalt concrete. At the end, a simple quadric polynomial model has been proposed to characterize the combined SBS and PVC effects for the sake of the guidance for mix design.

KEYWORDS

asphalt concrete, direct tensile test, polymer modification, tensile toughness

1 | INTRODUCTION

Hot mix asphalt (HMA) concrete, in general, is composed of asphalt binders, aggregates, and air voids, in which the aggregates amount up to 90%–96% of total weight.[1,2] The tensile strength of HMA concrete plays a critical role deciding the performance of the asphalt concrete and constructed pavement when exposed to prevailing traffic and environmental conditions.[3,4] Improving the material properties of asphalt mixes has been a constant effort, in both pavement construction and repair, to elongate the life span of roads, which consequently helps to reduce the cost of pavement maintenance.[5]

Asphalt binder modification using polymer and asphalt concrete mixture modification using mineral additive are two effective techniques popularly adopted in engineering practice and under intensive research. Adding polymer into asphalt binder was found not only enhanced the mechanical property and durability of the binder itself but also improved its binding strength with the mineral aggregates of concrete.[6] However, it was found that concrete mixes using styrene-butadiene-

Improvement of strength characteristics for sandy soils by polypropylene fibers (PPF)

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Abstract. Sandy soil contains many geotechnical problems, including high permeability, less shear strength, sand dunes, and liquefaction. Therefore, it is necessary to stabilize the sandy soil to improve its engineering properties, either through mechanical or chemical fixations. The mechanical one is done by changing the classification of the soil by mixing it with other types of soils and additives in various gradients. While the chemical fixation is related to the modification of soil properties by adding chemically active substances. In this research, polypropylene fiber PPF with proportions (0.1, 0.3, 0.6, and 1%) was used to study its effect on the physical properties of sandy soils, such as the angle of internal friction ϕ, shear strength τ, California Bearing Ratio CBR, and permeability k. In this paper the value of ϕ, τ, and CBR for improved sandy soil increases by 24%, 20%, and 182.2% respectively with adding 0.6% PPF, and decrease in permeability which is estimated to be 26% for 0.1% PPF.
Keywords: Polypropylene Fibers, Sand Soil, Permeability, Angle of Internal Friction, CBR.

1.Introduction

Sandy soil is defined as cohesionless soil or as frictional soil because there is no adhesion between their particles. Cohesionless soils have less shear strength, less bearing capacity, don't have containing water, don't have plasticity, and shear strain between their particles is negligible or doesn't exist. Traditional methods of stabilized sandy soil such as fly ash, bituminous, and lime cement often require a long curing period, so the use of polymers to stabilize sandy soils is more extensive in now day because it does not require a long curing time in addition to being chemically stable. Soil improvement by using polymers is not limited to sandy soils only but has also been used in clay soils to improve the physical properties of soils such as increase shear strength, increase bearing capacity, reduce settlement, reduce swelling and reduce all problems related to weak soils. [1] Used two types of polypropylene fibers (40 and 50 mm length) in four different percentage (1, 2, 3, and 4%) as an additive to increase the angle of internal friction of sandy soil.[2] Showed that the CBR value of sandy soil will increase with increasing the polypropylene fiber (20mm) in five percentage (0.5, 1, 1.5, 2, and 2.5%), the maximum increase in CBR is 113.35% at 2.5% PPF. [3] Mix polypropylene fiber (12mm) in three percentage (0.25, 0.5, and 0.75%) with sandy soil in different relative density (30, 50, and 80 %) and study its effect on shear strength, where it was observed that the shear strength of reinforced soil increases at different relative density.[4] Indicate that the polymer-soil mixture will reduce the permeability and increase shear strength when mix soil with (0.25, 0.5, 0.75, and 1%) PPF (6 and 12mm).[5] polyethylene PE, polyacrylamide PAM, and polymethacrylate PMA were used to reduce swelling up to 76.75, 78.2% and 71.7%, and increase CBR value by 66.7%, 74.8% and 72.85% of expansive soil with increasing PAM, PE and PMA to 5%, 12% and 7% respectively. [6] showed the effect of adding calcium chloride (2, 4, 8, 10 and 12%) and polypropylene fiber (0.5, 1and 2%) on

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PERFORMANCE EVALUATION OF A WASTEWATER TREATMENT PLANT

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Abstract- In the present research, the performance of Al-Rustamiya wastewater treatment plant, Baghdad, Iraq, was evaluated. Six parameters were selected for evaluation, namely Total Dissolved Solids (*TDS*), Total Suspended Solids (*TSS*), Chemical Oxygen Demand (*COD*), Biological Oxygen Demand (*BOD*), Chloride ion (Cl^-), and *pH*. Input and output amounts of these parameters were collected from Mayoralty of Baghdad for the period from 2011 to 2021. The methodology included the calculations of the water quality index (*WQI*) for the performance of the plant. Also, Artificial Neural Networks (ANNs) were developed for predicting the performance of the plant in terms of the *WQI*. The recorded data showed that the average amounts of the parameters in the treated water were within the Iraqi allowable limits except the chloride which was not treated adequately and showed higher amounts than the allowable over most of the studied periods. The average yearly removal efficiency values of the plant in terms of *BOD*, *COD*, and *TSS* were mostly more than 80%. While the average removal efficiency values of the *TDS* and Cl^- from the plant are below 10% and 15% respectively. The calculated water quality index results indicated that overall water quality of the plant was in a good category. ANNs model was accurately able to predict the *WQI* with the optimum topology of the ANNs is obtained at obtained at 14 neurons in the hidden layer. Also, sensitivity analysis showed that the *TSS*, *COD*, and *BOD* were the greater influencing parameters on the *WQI*.

Keywords: *WQI*, *BOD*, *COD*, *TSS*, *TDS*, Cl^-, *pH*.

1. INTRODUCTION

Water pollution represents a significant problem around the world as a result of the increasing population and urbanization with the maximum use of limited resources. The pollution of the water occurs from the discharge of biological, physical, and chemical contaminates, which adversely impact on the environment, aquatic biota and habitats, and human's health. Therefore, the discharged polluted water should be properly treated before being released to the environment. Moreover, the shortage of clean water necessitates the increasing treatment of wastewater for future utilization [1, 2].

Wastewater treatment plant (WWTP) is a main infrastructure in urban system with its importance being gradually escalating. The efficient operation and design of WWTPs has become an engineering challenge given the workforce, costs of energy, land trends, negative environmental and health issues, and strict requirements of pollutants discharge [3]. Normally, there are three stages involve in the WWTPs, namely primary, secondary, and tertiary treatments. Typically, the reduction degree in the organic substances in terms of *COD* and *BOD* as well as *TDS* represent the basic indicator of the effectiveness of the plant. The efficiency of the WWTP function should be evaluated in terms of effluent and treatment criteria requirement, as well as determining the capacity of the plant to accommodate significant organic loadings. Facilities may then be amended for accommodating the higher pollutants and treatment standards [4, 5].

Water quality index (*WQI*) utilizes equations for providing a dimensionless value which indicates the overall quality of treated water according to specific location and time requirements depending on various parameters of water. It has been used by governments, scientists, decision makers, authorities a management tool of facilitating water issues. Various indices have been developed since 1967 for water quality assessments. Mostly, the developed *WQI*s by the National Sanitation Foundation and the Canadian Council of Environment Ministers have been utilized in studies [6-9].

Moreover, modelling of WWTPs represents a difficult task as the treatment involves complex processes. The physical, biological, and chemical stages of the treatment plants provide non-linear performance which is complicated to presented in linear models. Thus, providing an efficient monitoring technique can be accomplished by the development of non-linear model to predict the performance of the treatment plant under previous observed water characteristics. Artificial neural networks (ANNs) represent computerized non-linear models for simulating the decision-making and functions of the brain of humans. It is being used for many water quality issues. It has also been properly used in the modelling of the WWTPs for predicting wastewater characteristics, controlling stages of treatments, and providing estimation of effluent characteristics [10-12].

ARTIFICIAL NEURAL NETWORK MODELING OF THE WATER QUALITY INDEX FOR THE EUPHRATES RIVER IN IRAQ

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ABSTRACT

This study was aimed to investigate the development and evaluation of artificial intelligence techniques by using multilayer neural network. Levenberg–Marquardt back propagation (LMA) training algorithm was applied for calculating drinking water quality index (WQI) for Euphrates river (IRAQ). The transfer functions in the artificial network model were tangent sigmoid and linear for hidden and output layers, respectively. Eleven neurons presented for good prediction for results of (WQI) with a coefficient of correlation >0.97 and statistically calculated WQI values, inferring that the model predictions explain 94% of the variation in the calculated WQI scores. The WQI score of the Euphrates was 142 considered as poor. The analysis of sensitivity revealed that the total dissolved solids (TDS) is the highest effective variable with the relative importance of (26.3%), followed by electrical conductivity (EC) (23.1%), pH (17.3%), calcium (Ca) (0.149), chlorides (Cl) (11.2%), Hardness (5.7%), Temperature (1.3%), respectively. It can be concluded that the model presented in this study gives a useful alternate to WQI assessment, which use sub indices formulae.

Keywords: physiochemical, WQI, weighted- arithmetic, sensitivity analysis.

نمذجة الشبكات العصبية الاصطناعية لمؤشر نوعية مياه نهر الفرات في العراق

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المستخلص

تتحرى الدراسة تطوير تقنية الذكاء الاصطناعي من خلال استعمال الشبكات العصبية متعددة الطبقات لغرض حساب مؤشر نوعية المياه لنهر الفرات داخل العراق. تم اعتماد ثمانية خلايا عصبية في بناء النموذج وقد اعطت معامل ارتباط عالي اكبر من 0.97 مع القيم المحسوبة وفق الفحوصات المختبرية والحقلية. كما ان النتائج فسرت 94% من التباين لقيم نوعية المياه. من خلال تحليل النتائج بلغ تقييم نهر الفرات 142 كتقييم لمؤشر نوعية المياه مما صنفت نوعية المياه بأنها فقيرة.اظهرت نتائج تحليل الحساسية بأن الاملاح الذائبة لها اكبر تأثير على نوعية المياه وبنسبة اهمية (26.3)% تليها التوصيلية الكهربائية (23.1)% ، درجة الحموضة pH (17.3)%، الكالسيوم (14.9)%، الكلوريدات (11.2)%، العسرة (5.7)%، والحرارة (1.3)% على الترتيب. وبينت النتائج بأن النمذجة بأستخدام الشبكات العصبية ناجحة وفعالة في تقدير نوعية المياه.

الكلمات المفتاحية: الفيزيوكيميائية، مؤشر نوعية المياه، الحساب الموزون، تحليل الحساسية.

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Adsorption of Meropenem Antibiotics from Aqueous Solutions on Multi-Walled Carbon Nanotube

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Abstract – *Pharmaceutical-instigated pollution is a major concern, especially in relation to aquatic environments and drugs such as meropenem antibiotics. Adsorbents, such as multi-walled carbon nanotubes, offer potential as means of removing polluting meropenem antibiotics and other similar compounds from water. In order to evaluate the effectiveness of multi-walled carbon nanotubes in this capacity, various experimental parameters, including contact time, initial concentration, pH, temperature and the dose of adsorbent have been investigated. The Langmuir and the Freundlich isotherm models have been used. The data obtained using a modified Langmuir model have been consistent with the experimental ones; the best pH value has been obtained to have the maximum uptake capacity with the hights coefficient of determination. The adsorption kinetics data is in accordance with pseudo-second order model for adsorption processes, which is in line with the measured data. The results of this thermodynamic research indicate that the reaction that removes meropenem antibiotics from water by adsorption is exothermic. A combination of mechanisms is responsible for meropenem antibiotics adsorption to adsorbent, including electrostatic and π–π EDA interactions, hydrophobic interaction, functional groups and molecule substitution. According to the research findings, multi-walled carbon nanotubes offer a potential method that can be quickly deployed in order to address pharmaceutical contamination of water.* **Copyright © 2020 Praise Worthy Prize S.r.l. All rights reserved.**

Keywords: *Kinetic, Thermodynamic, Meropenem, Modified Langmuir, Multi-Walled Carbon Nanotubes*

Nomenclature

b	Langmuir constant to adsorption equilibrium constant [L/mg]
C	Contaminant concentration
C_e	Equilibrium bulk concentration of contaminant in solution [L/mg]
CVD	Chemical Vapor Deposition
EDA	Electron-Donor-Acceptor
FTIR	Fourier Transform Infrared
K_F	Freundlich constant implied to adsorption capacity [mg/g]
K_1	Pseudo first order model constant [1/min]
K_2	Pseudo second order model constant [g/mg min]
K_c	Thermodynamic distribution coefficient for adsorption [L/g]
m	Weight of absorbent [g]
MA	Meropenem Antibiotics
MWCNTs	Multi-Walled Carbon Nanotubes
PZC	Point of Zero Charge
q_e	Amount of contaminant adsorbed at equilibrium [mg/g]
$q_{\max}$	Langmuir constant to the maximum adsorption capacity [mg/g]
R	Removal efficiency
R_g	Universal gas constant [8.314×10^{-3} kJ/mol K]
SEM	Scanning Electron Microscope
SSE	Sum of square errors between model and experimental data
T	Absolute temperature [K]
V	Aqueous solution [L]
$\Delta G°$	Change Gibbs free energy [kJ/mol]
$\Delta H°$	Change in enthalpy [kJ/mol]
$\Delta S°$	Change entropy [J/(mol K)]

I. Introduction

The pharmaceutical contamination of water has become a significant environmental issue. The effects of antibiotics are of particular concerns; this category of drugs selectively targets bacteria; they do not affect human cells and tissues [1]. There are different means of categorising antibiotics, according to their method of action or chemical structure [2]-[4]. This extensive class of potent drugs has more than 250 different antibiotics that are used to treat pathogenic infections of animals and humans [3]. The majority of antibiotics are derived from microbes; however, technological advances have enabled some types to be semi- or fully synthesised in the

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cBio-Cementation of Sandy Soil through Bacterial Processing to Precipitate Carbonate

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Abstract

Bio-cement built on microbial induced carbonate precipitation MICP, be able to consolidate the loose grains and can applied for soil reinforcement. In this study, the performing of an ureolytic Sporosarcina Pasteurii for sand stabilization was estimated. The S. Pasteurii Could effectively consolidates sand particles through urea hydrolysis and the successive production of calcite. The bio improved sands had relative great compressive strength after 60 days exposure to bacterial cells injections cycles. The compressive strength of bio stabilized sands was reliant on the utilized cell concentrations and density of urea and $CaCl_2$. High bacteria cell masses decreased the compressive strength. The optimal density of cell, was OD_{600} 0.5, when cost and performance were taken into account. The study shows that bio cementation of sand built on microbial induced carbonate precipitation (MICP) has ability for the reduction of sand permeability through pore clogging with precipitated carbonate.

Keywords: Bio-Cementation, Compressive Strength, Permeability.

التعزيز الحيوي للترب الرملية من خلال النشاط البكتيري لترسيب الكاربونات

ليث كاظم شنون ،محمد عبد الخالق ابراهيم

الخلاصة:

يمكن للأسمنت الحيوي الذي يعتمد على ترسيب الكربونات الناجم عن الميكروبات MICP ، أن يربط جزيئات التربة الرخوة ويحدث تقوية لها. في هذه الدراسة ، تم تقيم أداء بكتريا Sporosarcina Pasteurii لتحليل اليوريا لاحداث استقرار في الرمل. يمكن لهذه البكتريا تعزيز جزيئات الرمال الرخوة بفعالية من خلال تحليل اليوريا والإنتاج المتتالي للكالسيت. كان للرمال المعالج حيويا قوة ضغط عالية نسبية بعد 60 يومًا من التعرض لدورات حقن الخلايا البكتيرية. كانت قوة الضغط المسلطة على للرمل المعالج حيويا تعتمد على كثافة الخلايا المستخدمة وتركيزات $CaCl_2$ واليوريا. خفضت كثافات خلايا البكتيريا العالية من قوة الضغط. وكانت كثافة الخلية المثلى ، 0.5 OD_{600} ، بعد اخذ النظر في الأداء والتكلفة. توضح هذه الدراسة أن التماسك الحيوي للرمال بناءً على ترسبات الكربونات المستحثة جرثوميًا (MICP) له القدرة على تقليل نفاذية الرمال من خلال انسداد المسام بالكربونات المترسبة.

1. Introduction

Mineral precipitation affected by microbial action in subsurface, frequently signified to a microbial induced carbonate precipitation (MICP), can be developed for a range of engineered applications involving the restriction of groundwater contaminants Fujita et al. [1], ground strengthening or changing properties of porous materials DeJong [2]; van Paassen et al.[3]; Whiffin et al.[4], and the formation of hydraulic barriers for functions such as improved expanding storage security of CO_2 or oil recovery [Cunningham et al.[5].

Many bacteria are able of urea hydrolyzing, that can modify the moistening state of the creation water, and in the existence of calcium, may support the calcium carbonate precipitation Ferris et al.[6], 2003; Mobley and Hausinger[7]; Stumm and Morgan [8].

In earlier reports, excessive calcium carbonate precipitation was noticed nearby injection spots that could possibly lead to inhibited moving of nutrients which is undesirable influences on well injection process Fujita et al.[9]; Whiffin et al.[4]. Previously a bio mineralization mechanism can be counted field related, metal accumulation should be established to be controllable at a related scale as sustaining economic possibility Harkes et al.[10]. Controlling mineralization has been studied by estimating the reaction with transport, for example, changing injection strategies or injection speeds, operating the concentrations of reactant, expanding the number of actions, or governing the spreading of active bacteria [De Muynck et al.[11]; Harkes et al.[10]; Whiffin et al.[4], Mohammad et al.[12]. Furthermore, it has been stated that the forms and sizes of crystals shaped are influenced by the number and shape (planktonic or

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Numerical modeling of performance of olive seeds as permeable reactive barrier for containment of copper from contaminated groundwater

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ABSTRACT

This study investigates the performance of olive seeds as a reactive medium in the permeable reactive barrier (PRB) for removing of copper from a simulated contaminated groundwater. The effect of different parameters such as contact time, initial pH of the solution, agitation speed, initial copper concentration, and sorbent dosage was studied in batch experiments. The best values of these parameters that achieved the maximum removal percent (99%) of copper were 70 min, 5.5, 250 rpm, 10 mg/l, and 0.8 g/50 ml, respectively. The leaching test indicated that the dissolution of copper-bearing olive seeds is very low. A two-dimensional groundwater numerical model was developed under equilibrium condition to evaluate the performance of two configurations of PRBs namely continuous (C-PRB) and funnel and gate (FG-PRB). The results of batch experiments, leaching test, and 2D numerical model proved that the olive seeds barrier was efficient in the restriction of contaminant plume and both configurations of PRBs can be used successfully to treat copper-contaminated groundwater with operation time equal to 170 and 100 d for C-PRB and FG-PRB, respectively.

Keywords: Olive seeds; Copper; Permeable reactive barrier; Groundwater

1. Introduction

The contamination of groundwater by organic and inorganic compounds has been considered since the industrial revolution. Groundwater(water found beneath the surface of the ground and seeped down from the surface by migrating through the soil matrix and spaces in geologic formations) is generally more reliable for use than surface water [1]. Heavy metals including copper do not undergo biological decomposition and can accumulate in living organisms then interfering with the natural functioning of ecosystems [2]. The most common technology used for remediation of groundwater has been ex-situ pump-and-treat system. This system extract groundwater to the surface then treats it through different approaches such as adsorption and either re-introduce the treated water to the subsurface or discharge it to a storm drain. This technique is difficult, costly, and ineffective most of the time in removing enough contamination to restore the groundwater to drinking water standards in acceptable time frames. Accordingly, permeable reactive barriers (PRBs) technology was the alternative method used to remediate groundwater contaminated with different types of contaminants. It is found to be more cost-effective than a pump and treat and has been a demonstrated potential to diminish the spread of contaminants [3]. PRB technology may be installed as a continuous reactive barrier (C-PRB) or as a funnel-and-gate system (FG-PRB). Due to the fact that one of the most important stages of designing a PRB is choosing appropriate filler for the barrier, many research centers are searching for new reactive materials

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Effect of microbial carbonate precipitation in silty sandy soils

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ABSTRACT

Various chemical soil improvement techniques are currently used in practice, many of which have adverse environmental effects. The goal of the paper is to study the influence of microorganisms in improving the properties of silty sandy soils.

In this study, microbial calcite cementation is achieved using the common soil microorganism Bacillus Pasteurii and cementation reagent containing urea and calcium chloride. While a number of significant factors can affect the success of the microbial treatment, this study focuses on the effects of specimen preparation technique.

Specimens through the test program are prepared in molds, the model consists of aluminum molds (two types; rigid and contact ones), soils are mixed with bacteria then compacted in the molds, and the molds are then placed into a reactor tank which is filled with a cementation medium. Treated specimens are tested in an unconfined compression condition. The results show that the unconfined compression condition in rigid mold samples have increased from 14kPa in untreated samples to 64.8kPa and increased in contact mold samples from 14kPa in untreated ones to 21.1kPa in treated sample.

Keywords: bacteria, soil, biotreatment, cementation, biogrouting, cementing agent, Bacillus Pasteurii.

1 INTRODUCTION

Microbial Geotechnology is a new branch of geotechnical engineering that deals with the applications of microbiological methods to geological materials used in engineering. The aim of these applications is to improve the mechanical properties of soil so that it will be more suitable for construction or environmental purposes. Two notable applications, bioclogging and biocementation, have been explored. Bioclogging is the production of pore-filling materials through microbial to reduce the porosity and hydraulic conductivity of soil. Biocementation is the generation of particle-binding materials through microbial processes in situ so that the shear strength of soil can be increased. Microbiologically Induced Calcite Precipitation (MICP) technique has also shown encouraging uses in other construction application, i.e. enhance the strength of concrete, increase concrete durability (De Muynck et al. 2008 and Achal et al., 2011) and brick durability (Sarda et al. 2009). The chief suitable microorganisms for soil bioclogging or biocementation are facultative anaerobic and microaerophilic bacteria, although anaerobic fermenting bacteria, anaerobic respiring bacteria, and obligate aerobic bacteria may also be suitable to be used in geotechnical engineering.

2 MICROBIAL CALCITE CEMENTATION

Cementation and bioclogging in soil induced by the highly urease enzyme active gram-positive bacteria Bacillus Pasteurii endospore forming is studied. The main nutrient solution which is necessary for reproduction and growth of bacteria provided as a solution in the bacteria culture, as well as the chemical composites that are required for soil cementation and bioclogging, contains $NaHCO_3$, NH_4Cl, $CaCl_2$, urea, and a nutrient broth. Bacillus Pasteurii consumes urea as an energy basis under favorable environmental conditions producing carbon dioxide (CO_2) and ammonia (NH_3). These reactions will tend to increase the pH in the proximal environment. The reaction that stimulates the enzyme of the bacteria from urea hydrogenation occur inside the bacteria cell. This chemical reaction may be described by the following equation (Sarda et al., 2009):

$$NH_2+CO+NH_2 + H_2O \rightarrow 2NH_3 + CO_2 \qquad (1)$$

Concurrently, hydration of urea involves two reactions, the presence of water being necessary to complete these reactions. The first reaction involves converting the ammonia to ammonium (NH_4^+) and the second involves converting carbon dioxide to carbonic acid (HCO_3^-), as described in Equations (2) and (3),

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Simulation of the remediation of groundwater contaminated with ciprofloxacin using grafted concrete demolition wastes by ATPES as reactive material: Batch and modeling study

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Abstract

This work presented a batch and kinetic study on the possibility of using concrete demolition wastes grafted with 3-aminopropyltriethoxysilane (APTES) as a reactive material in a Permeable reactive barrier PRB technology to remediate the ciprofloxacin (CPX) contaminated groundwater followed by evaluating the performance of this barrier by simulating the remediation process using two-dimensional aquifer model by COMSOL Multiphysics 3.5a program. To make this work more realistic, real groundwater was used in addition to distilled water in preparing the CPX contaminated groundwater. Several parameters that influence the sorption process were studied to achieve the highest removal percent such as contact time, pH, and sorbent dosage. Langmuir and Freundlich isotherm models were used to depict sorption data, moreover, the pseudo-first-order and pseudo-second-order models were applied in the kinetic study. The best values of the parameters that achieved the highest removal percent (93%), as confirmed by the batch experiments, were time=120min, pH=7, and dosage=1.5g/50mL. In addition, the two-dimensional aquifer model shows that the CPX propagation was restricted by a reactive barrier.

Keword:concrete demolition wastes; ciprofloxacin; Reactive barrier; Contaminant transport; Modeling.

1. Introduction

Within a few decades of their discovery, antibiotics had become environmental contaminants of concern [1]. Many studies confirmed that these contaminants are permanent and mobile in a sufficient amount that they can move from wastewater and liquid agricultural waste to uncontaminated water, and their potential to endanger the human, animal, and environment for risk, so it considered as one of the most dangerous threats of our modern age [2,3]. Quinolones are considered one of the most important synthetic antibacterial agents used in human and veterinary medicines that the CPX belongs to which. These agents are effective against pathogenic bacterial species, which selectively prohibit the fabrication of bacterial DNA. The spread of manure and its slurry on agricultural lands, or direct sedimentation by grazing livestock, led to the possibility of secreting quantities of these medicines as origin compounds or metabolites and entering the environment and reaching the groundwater [4]. One of the techniques that may be used to eliminate CPX from aqueous solutions is the adsorption process. It proved to be an engaging and efficient process because of its cost-effective nature and easiness of operation [5]. Due to the characteristics of CPX such as difficulty to remove or biodegrade from the aqueous solutions, there is limited reported information on the adsorption behaviours of ciprofloxacin. Therefore, the treatment of contaminated water and groundwater with this antibiotic has become an urgent process [6,7]. There are many methods used for remediation of contaminated groundwater, the most common one in terms of low cost and effectiveness is permeable reactive barrier (PRB) technology. It may be installed in two configurations called continuous (C-PRB) and funnel-and-gate (FG-PRB) permeable reactive barrier [8]. Design of PRB includes many steps, the selecting of the filler or reactive medium is considered one of the important steps, that should be cost-effective, efficient in the containment of contaminants, and convenient with the underground environment so that no adverse chemical reactions occur, nor should it represent as a potential source of pollutants through itself [9]. In most cities of the world, there are a lot of construction and demolition processes as a result of population growth and urban development that produce large quantities of construction and

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Numerical analysis of nonhomogeneous and nonprismatic members under generalised loadings

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Abstract. This research studied the problem of varying depth and varying elastic properties along flexural member lengths subjected to generalised loading, with such members considered to be nonhomogeneous and non-prismatic. The differential equation for classical thin beams was thus derived and the finite differences used in solving this equation. Fortran programs were written to solve the problem in finite differences, and three-dimensional elements were used to simulate or model the beams in finite element ABAQUS software. A parametric study of the influence of beam width, depth, load nature, and boundary conditions on deformations and internal forces was thus accomplished. The maximum variation in deformations seen between this study and previous studies was 8%. The deflection of the non-prismatic beam was reduced by 31% when the ratio of the beam moment of inertia at different sections increased by up to three times, while, the moment capacity and the right end support shear capacity were increased by 78% and 50%, respectively.

1. Introduction

Non-prismatic members are used in cases that require reduced weight and additional section efficiency. Non-prismatic beams are thus used in various building structures and bridges, with applications increasing depending on structural engineering technique improvement. Such members may include hybrid materials along their lengths, and in such cases the members are assumed to be nonhomogeneous.

Eisenberger [1] derived the exact stiffness matrix for the non-prismatic beam in 1985 and solved various examples for beams with different loading and end conditions. In 1995 Al-Gahthi and Khan [2] derived the exact solution for non-prismatic flexural members with cross sections with linear and parabolic profiles. The obtained solution was derived in terms of the beam section variables and properties with different end conditions. Further research was then done to obtain the stiffness matrix for the non-prismatic beam element, based on direct integration of the governing differential equations by researchers such as Tena-Colunga [3] in 1996.

The issue of obtaining a closed form solution for members such as beams with variable sections along their span was investigated by Yavari et al. [4,5] and Yavari and Sarkani [6]. The Maculay theory has been used by Yavari et al. [5] in 2001 to simulate the singularities in the obtained solutions for both deep and thin beams, for example.

Biondi and Caddemi, [7] investigated the integration problem of the constant or uniform cross section Euler-Bernoulli beam governed by equations with discontinuities in 2005. The discontinuities in beams were simulated as bending stiffness singularities by using superimposition of compatible formulas onto a constant one-dimensional domain.

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Management of a typical experiment in engineering and science

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Technical managing of a typical experiment in engineering or science could be a hard and daunting task. Often, experimentalists are not certain what is first and final steps be included and how the outcomes should be obtained. Fortunately, engineering and science experiments follow a routine procedure. They contain essentially main four process groups. The planning process group includes a statement of a problem, determining the input variables and output responses, and performing the design of the experiment. The run of experiment with quality and safety precautions fall within the execution process group. While the analysis process group detailed the statistical analysis achievement and interpretation. Finally, the experiment results are reported in the reporting process group. The use of the cause-and-effect tool to scan all variables or factors and responses and organize them in the flowchart or map for the overall processes and also define the problem statement in detail was found to be the major factors in the planning of an experiment.

Topics
Experiment design, **Engineering science**, **Careers and professions**

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A state-of-the-art review on reinforced concrete slabs strengthened by frp sheets under monotonic,impact and repeated loading

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Abstract. Composites made of fiber-reinforced polymer (FRP) have gained popularity as new high-performance material for concrete buildings in now days. The advantages of FRP composites include high strength, lightweight, and corrosion resistance. This paper's primary objective is to assess the affect of FRP strips on the strengthening and repair of plain and reinforced concrete slabs. under the monotonic, impact, and repeated loading. According to studies' observations, applying FRP strips to RC slabs significantly affects the final load and deflection. The number and positioning of FRP sheets improve the performance of slabs. The failure load magnitude of strengthened slabs would increase as slab thickness, concrete compressive strength, and sheet thickness increase.The ultimate load capacity was increased by (27-52%), depending on the FRP strengthening strategy used. GFRP sheets could be employed for improving or enhancing the impact strength of concrete structures. Externally attached GFRP sheets gave good resistance for reinforced concrete slabs against typical explosive blast.

Keywords: FRP sheet, RC slab, repeated loading, monotonic loading, impact loading.

1. Introduction

Buildings with cracked concrete have become one of the most urgent needs that need to be treated before they become a problem. Some concrete structures developed in recent years are unsuitable for carrying service loads. Poor maintenance, an increase within the allowable load limit, inadequate reinforcing, excessive deflections, structural damages, or steel corrosion, which causes cracks, have all contributed to this inadequate load-carrying capability. In recent years, the amount of money spent on retrofitting existing structures has overtaken the amount spent on building new structures, owing to the use of traditional construction techniques [1]. Using FRP for reinforcement and retrofitting in the worst-case loading conditions such as cyclic loads, concrete can be strengthened and retrofitted by rehabilitation/treatment changes to structural parts (such as foundations, columns, beams, and slabs) [2]. FRP is more interesting to the civil engineering sector because of its various benefits. They come in a

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Behavior of two-way reinforced concrete voided slabs enhanced by steel fibers and GFRP sheets under repeated loading

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A R T I C L E I N F O

Keywords:
Repeated loading
Two-way voided slab
Flexural behavior
SSC
GFRP
Weight reduction

A B S T R A C T

Moderately thick voided slab systems are used in the construction of long-span slab buildings to incorporate lower weight on foundations and enhance the thermal and sound insulation of the slab. In some cases, these slabs required an enhancement if there is an increase in the applied loads or a defect in their construction properties. This research is focused on giving better enhancement techniques for such cases with keeping the flexural ductile failure of the tested slabs. Eight slab specimens of (1000 × 1000 mm^2) were cast and tested as two-way simply supported slabs. The tested specimens consist of one solid slab and seven voided slabs. The study variables comprised the nature of the slab (solid and voided), the thickness of the slab (100 and 125 mm), the presence of steel fibers (0% and 1%), and the number of GFRP layers. The voids in slabs were made using high-density polystyrene of dimensions (200 × 200 × 50 mm) with a central hole of dimensions (50 × 50 × 50 mm) to give the shape of donat. These voids are made at the ineffective concrete zones to give a reduction in weight by (34%–38%). The slabs were tested as simply supported slabs under partial uniform repeated loading. The results of tested specimens showed that the enhancement with a combination of steel fibers and GFRP sheets gave the least deflection (4.2 mm), higher ultimate loading capacity (150 kN), larger stiffness at cracking, and at ultimate load (52.5, and 35.7 kN/mm) respectively, more ductility index (1.35), and larger energy absorption (1098.7 kN mm)..At the same stage of loading, the effect of adding steel fibers by (1%) for voided slab leads to a decrease in the deflection by (30%) and increase the ultimate loads by (31%). Therefore the strengthening technique adopted in this research enhances the behavior of moderately thick voided slabs effectively and preserves a ductile flexural behavior.

1. Introduction

In practice, the slab is a major structural component of a building and is considered the member that consumes the most concrete quantity. It is obvious that the slab is only designed to withstand the applied vertical load. Moreover, when the span of the building increases, the slab thickness increases and this leads to an increase in the size of the beams and columns. This leads also to an increase in the foundation size or a change in the foundation type for low-bearing capacity soils like in Iraq and therefore increasing the construction cost [1–3]. Various efforts have been made to reduce the weight of concrete slabs while preserving their flexural strength [4]. The suggested technique in previous literature will result in reducing deflection and allows utilizing longer spans. The top concrete part above the neutral axis of the slab is necessary to create the compression block for flexural strength, and the tension zone needs reinforcement to enhance the concrete weak tensile properties or flexural strength. Also, the top and bottom slab faces must be linked to transmit stresses. Bubble, waffle, hollow core, and beam-block slab systems were and are still used in the construction of lighter long-span slab buildings [5–11]. Biaxial voided slabs, also known as hollow biaxial slabs, are reinforced concrete slabs with voids that allow for the reduction of the volume (quantity) of concrete. Due to the technology's focus on sustainability, voided reinforced concrete RC slabs may significantly assist in attaining Building Research Establishment Environment Assessment Methodology goals. In the year 1990, the UK introduced BREEAM as the first commercially accessible environmental evaluation instrument for buildings. The technique of using the voided RC slab is acceptable for the Leadership in Energy and Environmental Design (LEED which was established in North America, in 1993) [12].

During their service life, concrete members may need strengthening and maintenance. This may be due to design or construction problems, functional modifications, design code updates, lack of maintenance,

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Nonlinear Finite Element Analysis of Fiber Reinforced Concrete Pavement under Dynamic Loading

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ABSTRACT

The analysis of rigid pavements is a complex mission for many reasons. First, the loading conditions include the repetition of parts of the applied loads (cyclic loads), which produce fatigue in the pavement materials. Additionally, the climatic conditions reveal an important role in the performance of the pavement since the expansion or contraction induced by temperature differences may significantly change the supporting conditions of the pavement. There is an extra difficulty because the pavement structure is made of completely different materials, such as concrete, steel, and soil, with problems related to their interfaces like contact or friction. Because of the problem's difficulty, the finite element simulation is the best technique incorporated in the analysis of rigid pavements. The ABAQUS software was used to conduct the response of previously tested specimens under different loading conditions. Good agreement between the laboratory and finite element results was observed. The maximum differences between experimental and finite element outcomes in terms of ultimate loads and ultimate deflection for rigid pavements under monotonic loading are 6% and 8%, respectively, and 10% and 18% respectively for the repeated load.

Keywords: rigid pavements, fiber concrete, finite element

تحليل العناصر المحدودة غير الخطية للتبليط الخرساني المسلح المقوى بالألياف تحت التحميل الديناميكي

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باحث
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الخلاصة

يعتبر تحليل الأرصفة الصلبة مهمة معقدة لأسباب عديدة. أولاً ، تشمل ظروف التحميل تكرار أجزاء من الأحمال المطبقة (الأحمال الدورية) ، والتي تؤدي إلى إجهاد مواد الرصف. بالإضافة إلى ذلك ، تكشف الظروف المناخية عن دور مهم في أداء الرصيف حيث أن التمدد أو الانكماش الناجم عن اختلاف درجات الحرارة قد يغير بشكل كبير الظروف الداعمة للرصيف. هناك صعوبة

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Behavior of lightweight aggregate concrete voided slabs

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Abstract. Reducing the self-weight of reinforced concrete structures problem is discussed in this paper by using two types of self-weight reduction, the first is by using lightweight coarse aggregate (crushed brick) and the second is by using styropor block. Experimental and Numerical studies are conducted on (LWAC) lightweight aggregate reinforced concrete slabs, having styropor blocks with various sizes of blocks and the ratio of shear span to the effective depth (a/d). The experimental part included testing eleven lightweight concrete one-way simply supported slabs, comprising three as reference slabs (solid slabs) and eight as styropor block slabs (SBS) with a total reduction in cross-sectional area of (43.3% and 49.7%) were considered. The holes were formed by placing styropor at the ineffective concrete zones in resisting the tensile stresses. The length, width, and thickness of specimen dimensions were 1.1 m, 0.6 m, and 0.12 m respectively, except one specimen had a depth of 85 mm (which has a cross-sectional area equal to styropor block slab with a weight reduction of 49.7%). Two shear spans to effective depth ratios (a/d) of (3.125) for load case (A) and (a/d) of (2) for load case (B), (two-line monotonic loads) are considered. The test results showed under loading cases A and B (using minimum shear reinforcement and the reduction in cross-sectional area of styropor block slab by 29.1%) caused an increase in strength capacity by 60.4% and 54.6 % compared to the lightweight reference slab. Also, the best percentage of reduction in cross-sectional area is found to be 49.7%. Numerically, the computer program named (ANSYS) was used to study the behavior of these reinforced concrete slabs by using the finite element method. The results show acceptable agreement with the experimental test results. The average difference between experimental and numerical results is found to be (11.06%) in ultimate strength and (5.33%) in ultimate deflection.

Keywords: lightweight aggregate concrete; monotonic load; one-way slab; structural behavior; styropor block

1. Introduction

Three major expenses exist in casting concrete slabs which are concrete, reinforcement, and formwork (Gorkem and Husem 2013). These are considered throughout the process of design, especially through the initial planning stages. Formworks consumed about 40% to 60% of the total cost which has the greatest influence on the overall cost of the floor system (Abdul-Wahab and Khalil 2000). Previous experimental studies were conducted to find new types of lightweight slabs by considering these conditions. One type of reduction is done by providing a slab with Hollow Block (Al-Azzawi and Al-Asdi 2017). This type of slab depends on modifying the shape of the solid slab by increasing the moment of inertia therefore the ultimate and cracking moment capacities are increased. Another system for reducing the production cost through reduction in materials weight. In the present study, the two types of reduction in weight for the structure are done through using lightweight aggregate (LWA) and Styorpor Block Slab (SBS). Many researchers around the world focus on studying concrete slabs such as Chung *et al.* (2018), Zhang *et al.* (2020), Wang (2021), Sarkis *et al.* (2022), and Zhang *et al.* (2022). The following are studies focused on voided slabs.

Olawale and Ayodele (2014) tested waffle and solid slab specimens. Allawi (2014) carried out experimental tests on the one-way voided slab to investigate the structural behavior of reinforced concrete slabs containing cavities. Al-Azzawi and Abed (2016) investigated experimentally the behavior of reinforced concrete slabs with hollow cores under varying study parameters. The experimental part included testing 8 slab specimens of solid and hollow-core models with (2.05 m) length, (0.6 m) width, and (25 cm) thickness under two monotonic line loads. Also, Al-Azzawi and Abed (2017) investigated the same problem numerically through finite elements. Al-Azzawi and Al-Asdi (2017) conducted an experimental study to explain the general behavior of hollow block slabs when the reduction in weight range forms (23.3% - 29.1 %). Al-Azzawi and Abdul Al-Aziz (2017) studied the behavior of hollow core lightweight aggregate slabs experimentally and numerically using the finite element method (ANSYS computer program). Al-Gasham *et al.* (2019) carried out an experimental investigation to assess the effect of voids' size on the structural behavior of one-way slabs. Al-Gasham *et al.* (2021) used 3D nonlinear finite element analyses (FEA) through the ABAQUS program to study the effect of openings on voided slabs' structural behaviors.

The flexural performance of a composite slab constructed of precast concrete with steel and CRS reinforcement was explored by Al-Fakher *et al.* (2021). Six precast slabs (solid, hollow without CRS, hollow with 2, 3,

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Finite element analysis of RC beams strengthened with near-surface mounted reinforcement bars under pure torsion

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Abstract. This study's primary objective is to investigate the pure torsional behavior of reinforced concrete beams with inadequate resistance to applied loads. The beam needs to be strengthened with a simple and effective technique, the near-surface mounted. This paper was conducted to check the validity and accuracy of experimental results. This numerical study included testing three specimens; one was control beams, while the remaining were strengthened beams with two configurations with NSM closed and U-stirrups steel stirrups and longitudinal NSM bars. Each beam has three variables: Remove NSM longitudinal bars, use concrete's compressive strength (20,60) MPa, and Strengthen with NSM GFRP and CFRP bars. All beams have a cross-section (300x300 mm), and the length of the beam was constant (2100 mm). The numerical analysis showed close results to those obtained from the experimental work. This convergence was evident in failure and ultimate torque patterns and mechanisms. The ultimate torque increased when strengthening with four faces of NSM closed stirrups and three faces of NSM stirrups (U-shape) at a spacing of 130mm. On the other hand, The increase in compressive strength leads to an increase in the ultimate torque. Lowering compressive strength leads to more ductile behavior with lower ultimate torque. Removing the additional longitudinal reinforcement has a minor effect on behavior. The type of bars, steel, CFRP, and GFRP, have a marginal impact on the behavior with more ductile behavior for the steel reinforcement bar beams.

Keywords: pure torsion, RC beams, Finite Element Analysis, steel bars, ABAQUS, GFRP, CFRP.

1. Introduction

Strengthening structures using external reinforcement attached to the relevant face is not new. Near-surface mounted reinforcement (NSM) was invented for plate bonding with FRPs. According to the approach, rods made mostly of CFRP are glued in the sawed concrete cover grooves. The technique was created in Sweden in the 1940s7, albeit at the time, steel bars were used instead of FRP. Currently, this technique involves using quadratic rods made of CFRP composites, which are subsequently joined together using either an epoxy or a cementitious bonding agent [1]. Many concrete structures are subjected to a primarily applied torque, including bridge components, horizontally curved members, eccentrically loaded beams, spandrel beams, and spiral staircases. Due to the increased applied loading, structural damage or deterioration of

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Response of two-way reinforced concrete voided slabs enhanced by steel fibers and GFRP sheets under monotonic loading

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Abstract. Various efforts have been made to reduce the weight of concrete slabs while preserving their flexural strength. This will result in reducing deflection and allows the utilization of longer spans. The top zone of the slab requires concrete to create the compression block for flexural strength, and the tension zone needs concrete to join with reinforcing for flexural strength. Also, the top and bottom slab faces must be linked to transmit stresses. Voided slab systems were and are still used to make long-span slab buildings lighter. Eight slab specimens of (1000*1000 mm^2) were cast and tested as two-way simply supported slabs in this research. The tested specimens consist of one solid slab and seven voided slabs with the following variables (type of slab solid and voided), thickness of slab (100 and 125 mm), presence of steel fibers (0% and 1%), and the number of GFRP layers). The voids in slabs were made using high-density polystyrene of dimensions (200*200*50 mm) with a central hole of dimensions (50*50*50 mm) at the ineffective concrete zones to give a reduction in weight by (34% to 38%). The slabs were tested as simply supported slabs under partial uniform loading. The results of specimens subjected to monotonic loading show that the combined strengthening by steel fibers and GFRP sheets of the concrete specimen (V-125-2GF-1%) shows the least deflection, deflection (4.6 mm), good ultimate loading capacity (192 MPa), large stiffness at cracking and at ultimate (57 and 41.74) respectively, more ductility (1.44), and high energy absorption (1344.83 kN.mm); so it's the best specimen that can be used as a voided slab under this type of loading.

Keywords: flexural behavior; monotonic loading; SSC; two-way voided slab; weight reduction

1. Introduction

The member used in the construction of floors, roofs, and bridge decks is known as a reinforced concrete slab. A building's floor system may consist of precast components, ribbed slabs, or in-situ solid slabs. Slabs may span in one or two directions and be supported by concrete or steel beams, walls, or the structure's columns directly (Alfeehan *et al.* 2017, Al-Azzawi and Abed 2017, Al- Al-Gasham *et al.* 2019, Yaagoob and Harba 2020, Al-Fakher *et al.* 2021, Al- Al-Gasham *et al.* 2021, Al-Azzawi and Shallal 2021, Pawar *et al.* 2022).

The slab, which consumes the most concrete quantity generally, is a major structural

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Original article

Punching shear behavior of LWA bubble deck slab with different types of shear reinforcement

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ABSTRACT

Punching shear is the most important problem in flat slabs, which usually requires strengthening for safety reasons. One of the most popular strengthening methods is the employment of shear reinforcement. Also, in order to reduce the self-weight of slabs, lightweight aggregate concrete as well as the bubble deck technology were used in this research. To study the influence of shear reinforcement type on lightweight aggregate voided slab behavior under punching shear, three slabs having the same geometrical and mechanical properties, with different shear reinforcement type (hook, inclined bar and stud) were cast and prepared for testing. As well as a control specimen with no shear reinforcement was used for comparison reason. The results showed that the inclined shear reinforcement has the most positive influence on slab behavior, between the three types of reinforcement that were adopted in the experimental work.

1. Introduction

In a reinforced concrete structure, the span between columns is the main design limitation employed in the building slab systems. To design a larger slab between columns, peripheral beams and/or very thick slabs are required. This will lead to increase the weight of the structure because of requirement for larger amounts of used concrete (Singh and Saini, 2018). The bubble deck technology is the key for solving such construction problems. This technology uses spheres made of recycled industrial plastic to create air voids while providing strength through arch action. It is an attempt for utilizing the positive aspects of concrete slab construction while minimizing the negative attributes of solid slabs by lightening the self-weight of the structure (Chung et al., 2018). Also, lightweight aggregate concrete can be used to produce lighter weight structures.

The most dangerous areas of two-way solid and voided slabs are the slab–column connection area and zones where concentrated loads act (Habibi et al., 2014). The concentrated shear force and the large amount of shear stresses in this area cause punching of the concrete slab (Acciai et al., 2016, Sprince et al., 2014; Caratelli et al., 2016). Voided slabs design procedures are more conservative than solid slabs to punching shear failure because of the presence of voids which lead to insufficient cross section area of concrete that was remaining to withstand the shear stresses that generated within this region. Furthermore, lightweight concrete in general shows properties that are weaker than the normal weight concrete. In such cases, shear reinforcement may be enhance the punching shear capacity for the concrete slab (Vainiunas et al., 2015). The punching area of voided slab also can be reinforced with shear reinforcement. In such techniques the shear reinforcement must be provided in the ribs (Valivonis et al., 2017).

Many experimental investigations were conducted earlier on voided slab. But, there is no available research study on the behavior of lightweight concrete voided slab has been carried out yet.

2. Experimental work

A full scale flat slab system with dimensions of (7.5*7.5) m and supported on columns only, represents the prototype in this research. The zero-moment axes of the selected prototype lies approximately at (0.22 L) from the column axis. The punching shear specimen in this research represent the column strip with scale of 1/3 which exposed to punching shear due to column with square cross section. The column has scaled dimension equals to

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Original article

Tension stiffening evaluation of steel fibre concrete beams with smooth and deformed reinforcement

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ABSTRACT

This study investigated the flexural performance of steel fibre beams reinforced with smooth and deformed reinforcement, both experimentally and numerically. As part of the experimental investigation, five full-scale reinforced concrete beams were constructed with plain and steel fibre concrete and were tested under 4-point flexural monotonic loading. The amount of fibre and the condition of the rebar were the main parameters studied. The test's outcome built up a numerical model to simulate the actual performance of the reinforced concrete beams under tested loading. Afterward, a parametric study was conducted to get a better understanding of the behaviour of the steel fibre concrete beams. The experimental results show that the cracking load was not affected by the steel reinforcement conditions, whether smooth or deformed. Moreover, 9% of the ultimate deflection was caused by tension stiffening and 3% due to the steel fibre content in steel fibre concrete beams. Finally, the concrete compressive strength was found to have less of an effect on the ultimate deflection than the ultimate load.

1. Introduction

Generally, steel fibre (SF) is used to enhance the mechanical performance and crack propagation resistance of the concrete because SF has inherently superior material properties. The steel fibre concrete matrix had a good performance, in terms of tensile strength, flexural strength and relaxation (Al-Ghamdy et al., 1993; Gao et al., 1997, Thomas and Ramaswamy, 2007). However, it was observed that steel fibre addition had only a minor influence on the compressive strength (Fanella and Naaman, 1985; Sivakumar and Santhanam, 2007; Zarrin and Khoshnoud, 2016a, Zarrin and Khoshnoud, 2016b; Najigivi et al., 2017). The workability and stiffness of the steel fibre concrete matrix decreases with the amount of steel fibre increases (Altun et al., 2007; Özcan et al., 2009). An extensive amount of studies have been conducted on fibre-reinforced concrete members to gain a fundamental understanding and characterization of the overall behaviour. There are still more studies needed to investigate, in particular, nonlinear tension stiffening behaviour of steel fibre concrete members, which is necessary for the design considerations. Romualdi and Mandel (1964) conducted an experimental investigation into the wire spacing affect on the concrete aspects, particularly in terms of tensile stress, and they determined the wire spacing-tensile cracking strength relationship of the steel fibre concrete members. The steel fibre addition shows significant enhancement of the reinforced concrete members, with relation to carrying the moment capacity, resisting fatigue loads, crack widths and creep compared to other types of fibre (Kormeling and Shah, 1980). Additionally, it was noted that the composite matrix restored the load and crack resistance capacity of the damaged members (Tan et al., 1994; Ashour et al., 2000), and led to significant influences on the crack number and crack width (Vandewalle, 2000). Behbahani et al. (2012) tested experimentally eight full-scale RC beams to study the effect of the different amounts of steel fibre on flexural behaviour. This study focused on beams with four point loads and simply supported boundary conditions. Based on the tests conducted, it was determined that the effect of steel fibre on flexural behaviour for beams with high compressive strength C50 is more obvious than beams with low concrete compressive strength, C30. This was confirmed by the excellent embedding of the constraints between the steel fibre and the concrete.

The stress transfer mechanisms in the tension side of the concrete through the cracks show that a notable stress sharing mechanism in normal concrete can transfer directly over main steel bars

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Civil Engineering

Behavior of reinforced concrete solid and hollow beams that have additional reinforcement in the constant moment zone

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ABSTRACT

This paper presents the effect of non-uniform reinforcement ratio along the beam length on the flexural behaviour experimentally and numerically. Within the experiment, four reinforced concrete beams each had a different reinforcement ratio. However, three of four beams had a similar reinforcement ratio in the constant moment zone (0.012). Cracking load, load carrying and deflection were monitored through the test. A nonlinear finite element software was implemented to simulate the experimental behaviour. Followed up by a parametric study. It was found that, in reinforced concrete beams, the tension stiffening depends on the concrete area in the tension zone not the reinforcement ratio. FEA predicts the reinforced concrete beams behaviour within a good agreement. Finally, the findings show that, determining variable amount of reinforcement ratio along the beam length will not sacrifice the flexural behaviour, but it will reduce the quantity of the steel reinforcement and the overall cost.

1. Introduction

Nowadays, a huge number of structures are exposed to degradation due to overloading, environmental conditions (hot in summer and cold in winter), natural hazards and loss of tension stiffening with time. Therefore, retrofitting these structures has become a very important issue. Previously, the techniques utilized included section enlargement, bonded steel plate strengthening, ferro-cement, external post-tensioning techniques and fibre reinforced polymer (FRP) wrapping [1–4]. Some of these techniques had limitations, however, such as the cost of materials and maintenance, reduction in headroom, and hindrances in implementation. Thus, FRP is considered the most commonly used and relatively easy installation material developed for strengthening reinforced concrete members. It was believed that the FRP strengthening acts as an additional tensile reinforcement, which leads to increase in the load carrying capacity and ductility [5–9].

According to Vlassis et al. 2008 [10], there should be an upper limit for the additional reinforcement that should be used to prevent the brittle failure of beams.

Ductility is an important issue that engineers consider in design. Reinforcement ratio, concrete compressive strength, shear links spacing are the main parameters that affect the ductility [11–14].

Both the ACI Committee 318-19 [15] Code and Eurocode 2 (2011) [16] have a limitation to the maximum reinforcement ratio that should be used in order to avoid a sudden collapse. The effect of tensile reinforcement ratio on the behaviour of high strength concrete beams was investigated experimentally by Hadi and Elbasha (2007) [17]. They found that beams' ductility increased with the increase in both compressive strength and reinforcement ratio. Moreover, Qi et al. (2017) [18] studied experimentally the effect of reinforcement ratio and steel fibre on the flexural behaviour of reinforced concrete beams and found that the effect of the reinforcement ratio on the stiffness and carrying capacity was more than that of the steel fibre. In general, the word lap-splice is suggested to identify the overlapping two lengths of equal bar diameters, then connecting them by welding or steel wires to form one segment. For the structural engineer, the most important factor in bars lap-splicing is the length of overlapping. However, the limitations on this length may change depending on steel bar diameter and the location of splicing in structural members. The overlapping length and the permitted locations of splicing are subject to different building code requirements. Most local building

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THE BEHAVIOR OF STRIP FOOTING RESTING ON SOIL STRENGTHENED WITH GEOGRID

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Abstract

The soil in Iraq has a low load carrying or bearing capacity and high deflections or settlement because of the applied loads. The use of strip footing as a foundation to support different kinds of heavy structures has become necessary nowadays through solving such problems by using geogrid. This soil improvement technique is widely used all over the world. In this paper, the bearing capacity and settlements were calculated using finite elements and analytical models for strip footing resting on different kinds of soil. The study parameters are footing rigidity, the number of layers in a geogrid, the dimension of geogrid, and spacing of geogrid layers. According to the findings, the geogrid improved the bearing ability of the footing and reduced settlement. The optimum geogrid dimension was three times the footing width, and three geogrid layers were optimum. The changing in footing rigidity also affects the stress and settlement behavior.

Keywords:

Finite element;
Strip footing;
Geogrid;
Response;
Soil.

1 Introduction

In recent years, the concept of reinforcing soil underneath foundations has become more interesting [1-6]. As the number of appropriate construction sites becomes scarcer, and the demand for poor soil as a base material grows, the use of geogrid reinforcement has become broadly acknowledged [7-9]. The word “reinforced soil” refers to any soil mass whose shear strength has been increased by the addition of resisting parts, such as bars, strips, tubes, grids, or sheets [10]. Different geotechnical engineering applications required reinforcement to increase the performance of the soils. Some scientists have investigated the advantages of soil strengthening in both experimental and theoretical studies [1-6, 11, 12]. During the last decades, several studies have used laboratory model experiments to assess the geogrid-reinforced soil behavior beneath the load of footing [5, 8, 13-17], numerical simulation [16-18], and field experiments [19].

To enhance bearing capacity and minimize expected shallow foundations settlement, both horizontal and vertical reinforcements are included [20]. Geogrids can be an appropriate and low-cost method of increasing bearing or load carrying capacity and decreasing settlements in soils. The increase in soil shear strength which is usually observed with reinforced soil represents a result of displacement of the corresponding soil- strengthening.

Yahia et al. (2016) assess the bearing or load carrying capacity and the deflection of a strip footing lying on sand has poorly graded particles with geogrid reinforcement [20]. This study found that the geogrids improved the curve of the load-settlement for the footing by up to three times the strains at the failure of un-reinforcement sand; in this manner the footing may undergo more elastic settlements before failing with geogrids. In experiments on geogrid strengthened foundations, Abu-Farsakh et al. (2008) and Gill et al. (2013) found that to enhance the bearing capacity ratio, the optimum number of strengthened strata was 3 or 4, and the actual strengthening depth was 1.25 – 2.5 times the width of the foundation [19, 21].

Several scientists have investigated the load carrying or bearing capacity of foundations on strengthened sandy soils in the laboratory [14]. Many aspects, like soil geogrid interface interaction, the number of strengthened strata, strengthening spacing, and the depth of the first strengthening stratum, may impact the behavior of geo-synthetic-reinforced foundations [22].

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Thermal Behavior of Hollow and Solid Steel Beams with Different Boundary Conditions

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The thermal behavior of hollow steel structural members due to the temperature increase has not been investigated and discussed in many design codes. This work presents a study of the hollow and solid steel beams' carrying capacity under elevated temperatures. The material properties of such beams decline under the temperature expected to increase the moments on the beams. The finite difference technique is selected first to analyze the problem. The solved problems cover beams under concentrated point load levels with different end conditions such as cantilever, pin roller, and both ends fixed. The beam response (deflection, bending moment, and normal force) is examined. The finite element analysis was conducted using the DIANA FEA software to study the same problem incorporating material and geometric nonlinearities. It was found that both finite difference and finite element analysis solved the problem accurately when the temperature was under 500°C. It was also found that when the temperature was applied to the beam bottom face the deflection was smaller than when the temperature was applied to the side faces only and the whole section.

Keywords: hollow beams, finite difference analysis, finite element analysis, thermal loading, boundary conditions.

1. Introduction

Steel is a very strong construction material widely used in the construction of major structural elements. The use of steel as one of the most prevalant construction materials is due to its excellent mechanical properties such as higher ductility, higher modulus of elasticity, and higher tensile and compressive strength.

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Behavior of reinforced sustainable concrete hollow-core slabs

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Abstract. This study aims to trace the response of twelve one-way sustainable concrete hollow-core slabs made by reducing cement content and using replacement of coarse aggregate by plastic aggregate. The trial mixes comprise the 25, 50, 75, and 100% replacement of natural coarse aggregate. The compressive strength of the resulting lightweight concrete with full replacement of coarse aggregate by plastic aggregate was 28 MPa. These slabs are considered to have a reduced dead weight due to using lightweight aggregate and due to reducing cross-section through using voids. The samples are tested under two verticals line loads. Several parameters are varied in this study such as; nature of coarse aggregate (natural or recycled), slab line load location, the shape of the core, core diameter, flexural reinforcement ratio, and thickness of the slab. Strain gauges are used in the present study to measure the strain of steel in each slab. The test samples were fourteen one-way reinforced concrete slabs. The slab's dimensions are (1000 mm), (600 mm), (200 mm), (length, width, and thickness). The change in the shape of the core from circular to square and the use of (100 mm) side length led to reducing the weight by about (46%). The cracking and ultimate strength is reduced by about (5%-6%) respectively. With similar values of deflection. The mode of failure will remain flexural. It is recognized that when the thickness of the slab changed from (200 mm to 175 mm) the result shows a reduction in cracking and ultimate strength by about (6% and 7%) respectively.

Keywords: hollow core slabs; recycled aggregate; PVC plastic aggregate; reinforced concrete; experimental tests; steel reinforcement

1. Introduction

Natural aggregate concrete is widely used in cast structural members (Daud 2015, Daud 2018). Nowadays, recycled aggregate incorporation in concrete is a recent development in the use of various types of waste materials in concrete production (de Brito and Saikia 2013, Al-Azzawi and Al-Azzawi 2020, Al-Azzawi *et al*. 2020). The rigid Polyvinyl chloride (PVC) has been used effectively in different applications and generates huge waste material. It is important to dispose of this waste material by reusing it in the concrete composition. This application may save energy and reduce the demand for primary mineral resources. Therefore the reuse of plastic waste material in concrete is considered the best environmental alternative method to reduce environmental pollution and safeguarding natural resources (Alamgir and Ahsan 2007). Hollow-core slab HCS is defined as slab-made precast, pre-stressed one with longitudinal voids developed in the length of the slab to decrease weight and cost. The voids may be used to insert electrical or mechanical runs.

A longer span length of HCS is used and reaches up to (18 m) without inserting supporting members. Precast pre-stressed HCS is used in bridges and longer span slabs under heavy loads. Precast pre-stressed HCS are members with maximum structural efficiency when high-strength concrete is used. The HCS slab requires lesser material consumption (Stephen 2013).

Abramski *et al*. (2010) analyzed and studied the shear capacity of two-way hollow core slabs (HCS). Thirteen full-scale specimens and identical nonlinear finite element (FE) computations were made to show that the strength of shear of a two-way HCS is at fifty percent of the strength of shear of the solid slab. The stiffness of a two-way HCS should be determined like they are specified for a solid slab. The specimen and the nonlinear FE computations for this study have demonstrated that it is correct to calculate the internal forces of a two-way HCS in the same way like they are determined for a solid slab.

Rahman *et al*. (2012) prestressed precast hollow core slabs (PPHCS) were used. The design of those construction units is founded on the ultimate load-carrying capacity of those members. Full-scale load tests were demonstrated on PPHCS with varying (*a/d*) ratio, which was loaded to achieve the ultimate capacity of those slabs. A total of fifteen samples have 500 and 250 cm in span and 3 varying depths, 20, 25, and 30 cm were tested using a 4-point load test. The slabs were reinforced with conventional prestressing strands. And the number of prestressing strands was increased with the depth of the slab. It was noted that the failure mode of the slabs was changed from pure flexure to flexure-shear mode for slabs with a depth bigger than 20 cm. If the slab thickness is enlarged, the web shear cracking strength of PPHCS is decreased. A transition from flexure-shear to shear failure as a function of a/d was observed. The analysis of the experimental outcomes displayed that the existing ACI code equations underestimated the flexure-

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A review on hybrid fiber reinforced concrete pavements technology

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Abstract

The problems of soil-structure interaction involve different members or different materials behave together under applied loading. In the case of concrete pavement resting on soil under traffic loading, both concrete and soil will deform. Rigid Pavements are made of Portland Cement Concrete (PCC). It serves out two aims, to maintain a durable surface with comfortable driving for vehicles. The second purpose is to decrease the stresses on the layers of pavement beneath the surface such as subbase and subgrade. Concrete is considered a weak material in resisting tensile stresses. Therefore, when low tensile stresses are applied, rigid pavement begins to crack effortlessly. In concrete pavement, the usage of different kinds of fiber reinforcement could be an effective technique to improve these properties. Numerous kinds of fibers are utilized in the concrete pavement to behave as an alternative to ordinary reinforcement. They may differ in material like steel or plastic and could be in many shapes, and dimensions. The addition of fibers is during the mixing when the concrete is still fresh. The incorporation of different sorts of fibers could be a significant step in diminishing the cracks and achieving a higher performance of concrete. Two kinds of fibers or even more than two can be combined to achieve a mixture that produces profits for each type of fiber in this composite. In this paper, an intensive review was made to demonstrate the forms of distresses that could happen in concrete (rigid) pavement and the impact of incorporating different kinds of fibers into the concrete to enhance the concrete ability to eliminate or even delay the process of failure.

1. Introduction

The pavement may be defined as a relatively stable layer constructed above the natural soil for suitable distribution of wheel load and provides support to the wearing surface [1]. In history, the pavements have been divided into two types; flexible and rigid pavements depending on the way of transferring loads to the foundation soil. For flexible pavements, there is a gradual stiffness that increases from the foundation soil to the wearing way, which leads to high stress on the soil because the load is decadent over a relatively small area. On the contrary, in rigid pavements, the stresses on the soil are smaller because the stiffness of the road base is bigger than that of the soil. The main advantages of using Portland Cement

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Behavior of tension lap spliced sustainable concrete flexural members

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Abstract. The use of spliced reinforcing bars in sustainable concrete members to manage inadequate bars length is a common practical issue which is may be due to some limitations. The lap splicing means two bars overlapped in parallel with specified length called the splice length in order to provide the required bond between the two bars. The bond between sustainable concrete and spliced steel bars is another important issue. The normal strength sustainable concrete specimens of sizes 1700×150×150 mm with tension reinforcement lap spliced were selected according to testing device length limitations. These members were designed to fail in flexure in order to investigate the lap spliced tension bars effect. The selected lap spliced tension bars were of 10 mm size with smooth and deformed surfaces in order to investigate the surface nature accompanied with the splice nature. The sustainable concrete mechanical properties and mix workability were also studied. This study reveals that the effect of number of spliced bars on the response of beams reinforced with smooth bars is found to be more obvious than deformed one. Finite element modeling in three dimensions was carried out for the tested beams using ABAQUS software. A parametric study is carried out using finite elements on considering the following parameters, concrete compressive strength, load type and opening in cross section (hollow section) for weight reduction purposes.The laboratory and numerical results show good agreements in terms of ultimate load and deflection with an average difference of 10% and 15% in ultimate load and deflection respectively.

Keywords: sustainable concrete; beams; experimental test; finite element analysis; lap-spliced

1. Introduction

Concrete is a building material widely used in construction projects all over the world. The production of raw materials such as cement and aggregates which used to produce concrete is considered as a major concern environmental problems. The emission of CO_2 during the production of cement and the waste results from construction process and demolition are examples of such problems. Concrete that used lower cement content through using pozzolanic materials such as silica fume or metakaolin to replace cement with or without recycled aggregate is considered as a sustainable concrete. The problem of lap splicing of steel bars is a common construction issue which is used in concrete structures to overcome the continuous reinforcement bars requirements for long concrete elements. Other reasons for using lap splicing are sometimes referred to transportation limitation or designer reinforcement detailing. Lap spliced length and number of permissible lap spliced bars limitations recognized in codes must be discussed and studied.

The bars surface nature mentioned in codes focused on using deformed bars only in order to achieve the required bond between lap spliced bars and concrete which is an impotent issue. For flexural members, their strength depends on different physical parameters such as concrete strength in compression, steel reinforcement yield strength, beam dimensions and amount of reinforcement ratio. The result of these parameters will be the member stiffness. If the members are supported on spans larger than (12 m), the lap spliced technique is selected to reinforce the longer span members, however this technique should be carried out in accordance to the international design codes. The American Concrete Institute 318 (2014) has recommended the overlap splice with the minimum length of 40 multiplied by nominal diameter of bar (d_b). Knowing that, the reinforcing steel bars splice length must be longer than the development length in compression reinforcement in case of compression member (l_{dc}). While it should be longer than the development length in tension reinforcement in case of tension member. The Canadian Standard CSAA23.3 (2004) suggests an equation for the bond strength prediction which is similar to the ACI one. In 2000, Esfahani suggested an equation for the ductility criteria of spliced high strength concrete members subjected to monotonic loading as previous equations are applicable to normal concrete. Esfahani and Kianoush (2005) investigated the effect of web reinforcement quantity or ratio continuously provided along the spliced bars on the flexural member ductility. They concluded that the bond strength and ductility are increased with increasing web reinforcement quantity. But the increase in the splice length (l_d), does not affect the bond of spliced bars for high strength members.

Allam (2013) investigated the external strengthening of flexural members having short lap splice length for flexural tensile bars. Six members with identical dimensions and steel ratio were used in the laboratory specimens. Two reference members were tested. The first member was

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Numerical analysis of nonhomogeneous and nonprismatic members under generalised loadings

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Abstract. This research studied the problem of varying depth and varying elastic properties along flexural member lengths subjected to generalised loading, with such members considered to be nonhomogeneous and non-prismatic. The differential equation for classical thin beams was thus derived and the finite differences used in solving this equation. Fortran programs were written to solve the problem in finite differences, and three-dimensional elements were used to simulate or model the beams in finite element ABAQUS software. A parametric study of the influence of beam width, depth, load nature, and boundary conditions on deformations and internal forces was thus accomplished. The maximum variation in deformations seen between this study and previous studies was 8%. The deflection of the non-prismatic beam was reduced by 31% when the ratio of the beam moment of inertia at different sections increased by up to three times, while, the moment capacity and the right end support shear capacity were increased by 78% and 50%, respectively.

1. Introduction

Non-prismatic members are used in cases that require reduced weight and additional section efficiency. Non-prismatic beams are thus used in various building structures and bridges, with applications increasing depending on structural engineering technique improvement. Such members may include hybrid materials along their lengths, and in such cases the members are assumed to be nonhomogeneous.

Eisenberger [1] derived the exact stiffness matrix for the non-prismatic beam in 1985 and solved various examples for beams with different loading and end conditions. In 1995 Al-Gahthi and Khan [2] derived the exact solution for non-prismatic flexural members with cross sections with linear and parabolic profiles. The obtained solution was derived in terms of the beam section variables and properties with different end conditions. Further research was then done to obtain the stiffness matrix for the non-prismatic beam element, based on direct integration of the governing differential equations by researchers such as Tena-Colunga [3] in 1996.

The issue of obtaining a closed form solution for members such as beams with variable sections along their span was investigated by Yavari et al. [4,5] and Yavari and Sarkani [6]. The Maculay theory has been used by Yavari et al. [5] in 2001 to simulate the singularities in the obtained solutions for both deep and thin beams, for example.

Biondi and Caddemi, [7] investigated the integration problem of the constant or uniform cross section Euler-Bernoulli beam governed by equations with discontinuities in 2005. The discontinuities in beams were simulated as bending stiffness singularities by using superimposition of compatible formulas onto a constant one-dimensional domain.

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Free vibration of non-prismatic beam on variable Winkler elastic foundations

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Abstract. In this paper, the finite difference and the finite element methods are applied to evaluate natural frequencies of non-prismatic and non-homogeneous beams, with different boundary conditions and resting on variable Winkler foundation. The finite difference method is used for solving differential equation of motion, especially with variable coefficients. This technique requires a lesser computing effort and is used in situation where the exact solution is very difficult to obtain. The main idea of this method is replacing derivatives present in the free vibration equation and boundary condition equations with finite difference expressions. The natural frequencies are determined by solving the eigenvalue problem of the obtained algebraic system resulting from finite difference method. In order to illustrate the correctness and performance of the method, a comprehensive numerical example of non-prismatic beams is presented. The results are compared with the finite element results using ABAQUS software and other available numerical and analytical solutions.

1. Introduction

Special members resting on elastic sub-grade or foundations is considered as important issue facing the designer in civil engineering constructions from a general perspective. Closed form solutions, which are limited to very simplified cases are restricted. While numerical solutions has become the most preferred one for solving complicated soil-structure interaction problems. On the other hands, free vibration analysis, which is an eigenvalue analysis has become the major factor in the buildings structural. In the analysis and design, the building free vibration behavior will affect their response to dynamic loadings such as seismic and wind. Several researches and studies are made during the past and nowadays for tracing the free vibration response in different civil engineering constructions.

In 2007, Ece et al. [1] derived exact solution for free vibration of flexural members with constant height and variable width (exponential curve) with different end conditions such as free, hinged and fixed ends. In the same year, Firouz-Abadi et al. [2] used equation of motion of variable cross-section beam to obtain a particular or singular differential expression with the vibration natural frequency term and applied Wentzel, Kramers, Brillouin (WKB) method, which is based on series solution to find the analysis curve. In 2011, Nikkhah Bahrami et al. [3] developed another approach to estimate the system mode shapes and natural frequencies for the non-uniform flexural members. Two methods were selected to obtain the solution for the free vibration of non-uniform flexural member on elastic sub-grades. The first one is the Variational Iteration Method and and the second one is the Homotopy Pperturbation Method [4–6].

In 2011, Motaghian et al. [7] performed free vibration response analysis for flexural member on discontinuous sub-grade. The differential equation for the problem was solved in closed form using

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Mechanical properties of green concrete

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Abstract. The engineering properties inspection of green concrete resulted from using Metakaolin to replace cement and crushed tiles as waste coarse aggregates is the main aim in this work study. Different concrete mixtures were prepared in order to obtain 30 MPa target strength for concrete in compression. The crushed tile as waste aggregates is used to substitute crushed gravel as natural aggregate with ratios of 0 to 100% in the concrete mixtures and the mixture properties were inspected. It is revealed that employing Metakaolin in the replacement of cement and crushed tile to substitute a ratio of crushed gravel affects all concrete properties such as; elastic modulus, tensile strength, and compressive strength. The difference relies on the percentages of Metakaolin and aggregate substituted. The optimum percentages for both Metakaolin and waste aggregate were found to be 20% and 25% respectively which can be used to produce green concrete with acceptable properties and solve a very important environmental problem. The ACI 318 code equations for estimating the spilt cylinder and modulus of elasticity are used and it is revealed that these equations give overestimated values for green concrete having waste aggregate with percentage exceeding 25%.

1. Introduction

Concrete is a structural material utilized in the construction of many buildings and infrastructure [1]. The used waste material in the production of concrete may be engaged through cement or aggregate replacement, filler material or strengthening fibres. Cement as a construction material is considered to be a pollutant to our environment because of its production cycle. The waste material can have environmental advantages though using it to replace coarse or fine aggregate or to replace cement [2, 3]. Due to the large consumption of cement in construction projects in Iraq, the reduction in cement quantities used in concrete mixes is very important case. From the standpoint of lowering cement, there are many benefits attached to utilize waste or recycled materials as pozzolans. Concrete made from waste materials that are environmentally friendly and having lower cement content is called as “Green concrete”. Green concrete is a sustainable concrete used in the construction of many structures due to lower required maintenance, higher energy saving and lower CO2 emissions. In the year 1998, this concrete was made first in Denmark by Dr.WG [2,4].Old concrete building wastes, glass wastes, recycled materials, crushed brick, and tiles can be used in concrete as waste aggregate. The purpose of green concrete is to lower the atmosphere pollution as a result of cement production which is used in concrete. And also, to remove environmental wastes through the reuse of waste materials.

The literature on green concrete focused on the investigations of aggregate replacement and cement replacement. Meyer and Baxter (1997, 1998), investigated the concrete production containing glass aggregate and Metakaolin. The studies revealed that the weight and compressive strength are reduced with mounting the amount of waste aggregate in the mix due to reduced adhesion with it which is maybe

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Finite Element Analysis of Steel Fiber Tapered Deep Beams Under Monotonic load

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Abstract. This study illustrates the numerical investigations of the performance of steel fiber reinforced concrete tapered deep beams under static loading nature. Three simply supported specimens (two tapered members and the last is prismatic one) were selected from the experimental work of previous study carried by the authors. The selected specimens included a member having steel fiber and without vertical and horizontal reinforcement and another member having steel fibers without horizontal reinforcement. The third selected specimen having vertical and horizontal reinforcement and excluding steel fibers. On the other hand three other parametric studies were adopted using the FEA. Finite element analysis software (ABAQUS) investigate the effect of steel fiber ratio, a/d ratio and type of loading. On the other hand, three other parametric studies are adopted using finite element analysis (FEA). ABAQUS software was used to investigate the effect of steel fiber ratio, a/d ratio and type of loading.

1. Introduction

Tapered beams has been arisen in the first half of the 20th century, these type of beams are often used in continuous and simply supported bridges in midrise Buildings, continuous bridges and metro train pier cap. The American Concrete Institute AC1318M-11 [1] does not include specifications for tapered deep beams. Three simply supported steel fiber reinforced concrete tapered deep beams tested earlier by the authors of this study [2] were modelled using nonlinear finite elements. A model considering the plastic damage in concrete developed earlier by BS EN 1992-1-1:2004 ((BS) 2004) was considered [3]. The stress -strain relationship for concrete in (tension) was assumed to consist of a linear ascending section with slope equal to the modulus of elasticity of concrete (E) and exponential descending part [4].To ensure the simulation compatibility against experimental data, additional components is to be adopted to simulate reinforced concrete. For example, the steel reinforcement bar response represented by the Bauschinger effect which is used in the modelling, the reinforcing bars exhibit an elastic-plastic bilinear kinematic hardening model. The selected model adequately accounts for the Bauschinger effect. The Menegotto-Pinto [5] model was used to simulate the steel response. Validation of the simulation models will be made and a comparison of results against the experimental results is carried out. Numerical parametric studies will be adopted to investigate the effect of variations in compressive strength, steel fiber content and a/d ratio.

2. Description of the Previous Experimental Study

The dimensions, loads and boundary conditions of the specimens that were tested in the experimental program carried by the authors [2] were also used for the finite element models [Figure (1)]. All the specimens have a total length L = 1100 mm. The effective span for all specimens was L = 900 mm and the

A Comparative Study of Soil Stabilization Effect and Concrete Strength Development on Rigid Pavement Thickness

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Abstract

The subgrade soil is the supporting part of the concrete road for transferring the different traffic loads from the road surface. The strength of this soil increases its ability to receive loads, increases the durability of the concrete road, and does not cause structural failure problems. If the soil is weak, it will decrease pavement service life and cause multiple types of failure on the road such as damage to joints, an increase in stresses and deflection, and cracking.

In addition, the soil stabilization process increases the soil's strength and its tolerance to high loads, so the laboratory results showed that the use of 4% of the asphalt emulsion led to improving the gypsum soil properties and increasing the California bearing ratio to 52%.

In the process of designing rigid pavement using the AASHTO design method and depending on concrete properties and subgrade properties before and after stabilization, it was found that alterations in the CBR value within the range of 27-52% and a compressive strength of 30 MPa resulted in a reduction of 7.5% in slab thickness during the design calculations. A reduction of 7.8% in slab thickness was observed upon alteration of the CBR value from a range of 27-52% and a compressive strength of 35 MPa. A reduction of 4.5% in slab thickness was observed with a variation in compressive strength from 30-35 MPa and a CBR value of 27%. A reduction of 4.8% in slab thickness was found with a variation in compressive strength from 30-35 MPa and a CBR value of 52%. Therefore, it was found that the effect of increasing the soil strength on reducing the thickness of the concrete road is greater than the effect of changing the compressive strength of concrete.

Keyword: Subgrade soil, soil strength, concrete, rigid pavement

1. Introduction

Rigid pavement is a layer of Portland cement concrete positioned on the prepared subgrade or a layer of granular material known as a sub-base. Concrete pavement is typically

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ANALYZING THE EFFECT OF TANDEM AND TRIDEM AXLE LOAD APPLIED ON DOUBLE RIGID PAVEMENT SLAB

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Abstract

Rigid pavement is a type of pavement structure that is made of cement concrete. It is designed to provide a strong surface for transportation infrastructure, including roads, highways, airports, and industrial facilities. Rigid pavements are known for their ability to distribute loads from vehicles and other sources of weight evenly across the surface, which helps to prevent cracking and deformation.

Rigid pavements are commonly used in areas with heavy traffic, where the surface must be able to withstand heavy loads and frequent use. They also require minimal maintenance over their lifespan, making them a cost-effective option for transportation infrastructure.

This paper looks at how tandem axle (160 KN) and tridem axle (240 KN) are affected on a double rigid pavement tied together with dowel bars. This is done after the slab thickness has been determined based on the properties of the concrete mixture and the subgrade.

As a result of the study, it can be concluded that when the compressive strength of the pavement slab increases from 30 to 35 MPa, the thickness of the rigid pavement slab decreases by (15 mm) when all other design factors remain constant. Also, there was an increase of 35 % in the rigid pavement slab deflection when the axle load went from tandem to tridem. The stress increased by 36% and 37% for 30 MPa and 35 MPa concrete slab strengths when the axle load was changed from tandem to tridem axles, respectively. Also, if the compressive strength is increased from 30 to 35 MPa, the stress rises by 10% and 11% for tandem and tridem axles, respectively.

Keywords: Subgrade soil, Soil Properties, Concrete properties, Concrete, Rigid Pavements.

A Review of Unveiling the Promise of Natural Zeolites: Enhancing Concrete Properties (with experimental study)

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Abstract. The building industry relies heavily on concrete as a building material. Because of its valuable qualities, it is considered an essential raw material. Cement is the most crucial ingredient in making concrete, but it also produces a lot of greenhouse gases throughout the manufacturing process. Mineral additive materials like Zeolite can replace some virgin cement to reduce carbon dioxide emissions. By filling the pores and decreasing the concrete's porosity and permeability, these materials increase the concrete's durability and strength without negatively impacting the concrete's other desirable properties. This article aimed to provide a comprehensive overview of natural Zeolite's construction applications. The structural, types, chemical, and physical properties of natural zeolites were investigated, as well as their use in concrete production as pozzolans, durability enhancement materials, and energy applications materials. By critically analyzing previous researchers, this study aims to understand better how adding zeolites affects concrete's strength and durability. The research presents an experimental study utilizing Jordanian natural Zeolite with cement replacement percentages of 5%, 10%, and 15%, with the outcomes compared against reference concrete. The study findings demonstrate significant enhancements in compressive strength due to the inclusion of Jordanian natural Zeolite. Specifically, it manifested notable increases of 100.7%, 117%, and 56% for replacement percentages of 5%, 10%, and 15% over a 7-day curing period, and 14%, 20%, and 5% over a 28-day duration, when contrasted with conventional concrete formulations. Moreover, the inclusion of Zeolite engendered a notable reduction in water absorption, exhibiting decreases of 50%, 55%, and 60% compared to the reference concrete mix.

Keywords. mechanistic features, durable qualities, Pure Zeolite from Jordan, the concrete.

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Review of some Geotechnical Aspects on Structural Response of Rigid Pavements

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Abstract
A highway pavement consists of stacked layers of processed materials over a natural soil subgrade to distribute traffic loads. The pavement should have a suitable riding surface, skid resistance, light reflectivity, and little noise pollution. The purpose is to reduce wheel-load transmitted stresses, so they don't exceed subgrade bearing capacity. Flexible and rigid pavements are employed. This paper identifies and summarizes papers by studies on rigid pavement response and performance. It will also explain subgrade soil and its improvement, rigid pavement analysis and design by various approaches, and the appropriate plan and response reduction (stresses, strains, and deflection) to avoid early pavement failure due to

Article History

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Review on the Expert Systems for Airport Pavements Maintenance Management

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Abstract

Airport networks are one of a country's most valuable assets, especially as air travel has become more prevalent as a form of transportation. To maintain the maintenance and rehabilitation program, the aviation agency must make significant time and financial commitments. For the proper functioning of airports and to keep the pavements in good shape, airport pavements need to be continuously improved, repaired, and maintained.

Expert systems, sometimes referred to as knowledge-based systems, are computerized advising programs that replicate the thinking and judgment processes of human experts when resolving specific problems in a limited field. These systems, among the areas of artificial intelligence (AI),those are being researched the most actively and offer a number of benefits over traditional computer programs or human

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Developing a Frame Design for Airport Pavements Maintenance Management System

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Abstract

Software that depends on available information provides answers, solutions, or diagnoses by following techniques that aim to imitate the mental processes and apply the knowledge of an expert in any particular subject. Using an expert system has a number of advantages over typical computerized models. Expert systems are successful at issue solving because they include a large number of experts. Human knowledge and thought are just too complicated to capture and use in an analytical technique. For the past 20 years, that expert system has been used in paving applications, mostly for highway networks. The number of expert systems created for airport pavement is still minimal.

This Paper describes the initial development and methodological method of developing and validating the motion test method using video and photography, which increases the degree of automatic detection of road stress; to develop a descriptive strategy for airport road maintenance strategies, adapted to the Baghdad international airport system, using modeling strategies to predict road performance and service definition and implementation standards; and to develop a software, then evaluated it by applying to an existing computer programs that can be used as a decision support tool.

Keywords: Airport, Airport networks, Artificial Intelligence (AI), Expert Systems, Maintenance, and Airport Pavement Maintenance.

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Geotechnique, Construction Materials and Environment

BEHAVIOR OF GEOGRID-PILE FOUNDATION SYSTEM IN LOOSE SANDY SOILS UNDER HALABJAH EARTHQUAKE

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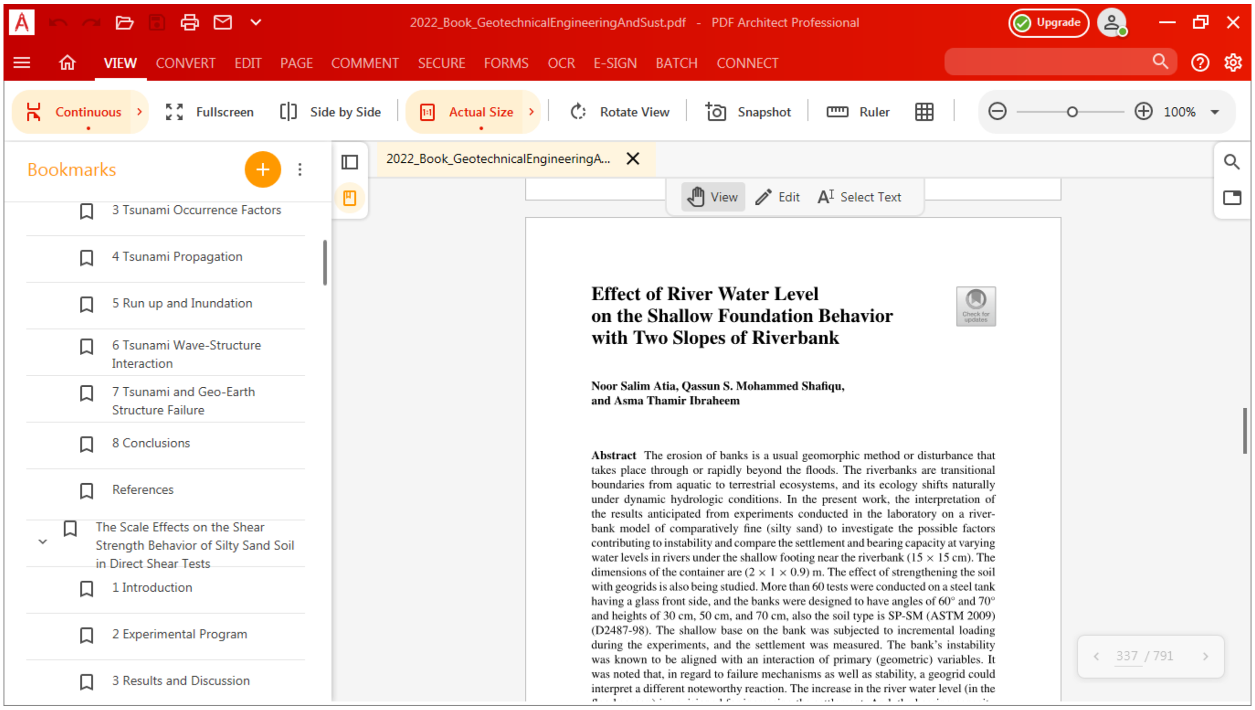
*Corresponding Author, Received: 18 July 2019, Revised: 04 Sept. 2019, Accepted: 26 Oct. 2019

ABSTRACT: Due to the increase in seismic activity in Iraq recently and the need to reduce the damage to the foundations, this research has been carried out in order to study the response of the pile foundation reinforced by geogrid in loose sandy soils. Because of the paucity of information linking the pile foundations with geogrid, the geogrid used in this research to reinforce the loose sandy soil under earthquake loading. Three types of geogrid are used in loose sand under the influence of the largest wave of earthquakes hit the regions of Iraq zones known Halabjah earthquake. Results predict the impact of treatment on the piles, and to study the settlement, horizontal displacements and bending moment of the piles, as well as the accelerations and pore water pressure of the soil. It was concluded that adding geogrid to the pile foundation would be reduced settlement, horizontal displacement, tip load and bending moment of the pile.

Keywords: Acceleration, Bending moment, Earthquake, Geogrid, Loose sand, Pile, Shaking table, Strain gauge.

1. INTRODUCTION

There was a need to find solutions to eliminate the damage of earthquakes on the deep foundations under dynamic effects Taha [1] and Zanzinger et al. [2], which has used the geogrid mesh with the pile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Effect of River Water Level on the Shallow Foundation Behavior with Two Slopes of Riverbank
Noor Salim Atia, Qassun S. Mohammed Shafiqu, and Asma Thamir Ibraheem
Abstract The erosion of banks is a usual geomorphic method or disturbance that takes place through or rapidly beyond the floods. The riverbanks are transitional boundaries from aquatic to terrestrial ecosystems, and its ecology shifts naturally under dynamic hydrologic conditions. In the present work, the interpretation of the results anticipated from experiments conducted in the laboratory on a river-bank model of comparatively fine (silty sand) to investigate the possible factors contributing to instability and compare the settlement and bearing capacity at varying water levels in rivers under the shallow footing near the riverbank (15 × 15 cm). The dimensions of the container are (2 × 1 × 0.9) m. The effect of strengthening the soil with geogrids is also being studied. More than 60 tests were conducted on a steel tank having a glass front side, and the banks were designed to have angles of 60° and 70° and heights of 30 cm, 50 cm, and 70 cm, also the soil type is SP-SM (ASTM 2009) (D2487-98). The shallow base on the bank was subjected to incremental loading during the experiments, and the settlement was measured. The bank's instability was known to be aligned with an interaction of primary (geometric) variables. It was noted that, in regard to failure mechanisms as well as stability, a geogrid could interpret a different noteworthy reaction. The increase in the river water level (in the
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Effect of Earthquakes over Time on the Geogrid-Pile Foundation System in Loose Sand

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Finite Element Analysis of the Geogrid-Pile Foundation System under Earthquake Loading

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Abstract

The finite element method is one of the important methods in analyzing geotechnical engineering problems; its main advantage is the ability to apply for the materials exhibiting non-linear stress-strain behavior. In this study the finite element program **PLAXIS 3D 2013** is used to study the behavior of the piles under the influence of seismic waves in saturated sandy soil and the effect of adding geogrid with the pile foundation. The program has been used to facilitate the representation of the real model, input the required soil parameters and implementation of seismic data. Seismic wave, the soil geometry and the pile dimensions were fixed in all models, while dimension and depth of the geogrid used were varied to study the influence of different depth and dimension in reducing the pile displacements and the pore water pressure of soil. The results show that The reduction in settlement ratio (the difference between settlement of pile without and with using geogrid to the settlement without using geogrid) for (L/2 ×L/2), (L×L) and (2L×2L) are 10.6%, 17% and 21.3% respectively. And the settlement ratio for geogrid at depths 8.33% and 12.5% of pile length are 9.6% and 17% respectively

Keywords: Finite Element Analysis, Pile, Geogrid, Loose Sand, Earthquake, Mohr-Columb Model

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Comparison Between The Use of Modern and Old Surveying Equipment Through The Updating of Digital Maps

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Abstract
Considering the fast technological evolution many instruments are available to the user to achieve various goals and pick the right instruments for the right purpose depending on many factors such as (time, cost, accuracy) and this what is this research is dealing with by the use and the comparison among these three instruments (Differential Global Positioning System (DGPS), total station, theodolite)in the Middle Technical University (MTU), and as a result it was found that the in the case of time consumption DGPS was least consuming, as for the relative error DGPS produced the least error followed by total station and theodolite.

Keywords
DGPS,TotalStation, Theodolite, Accuracy,Digital Maps.

Introduction

1. General

Digital mapping is known as the process of producing maps throughout the use of computerized data and approaches, the increase use of digital maps is to keep up with the rapid growth of the world and because of the many advantages provided by it such as: saving time and the gain of productivity, cost saving, more credibility and authority of map production, better service, high accuracy and high consistency. These advantages can overcome

horizontal and vertical angles. The used theodolite was (Leica builder 109).**Kennie** and **Petrie** (1990),**Anderson** (1989),**Bossler** (1984).

There are two main kinds of theodolite out there which are: digital and non-digital theodolite which is rarely used right now, the digital kind involves a base mounted telescope and the reading are displayed on a digital screen.**Zeiske** (2004).

3-Differential Global Positioning System (DGPS): -

The general concept of DGPS is that any two receivers relatively

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Using some of Microsoft Office Excel Functions to Compute Soil Engineering Parameters Based on Raw Results of Laboratory Tests

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Keywords: Microsoft office, soil engineering properties, Excel formulas, soil laboratory, field tests.

Abstract. The main aim of this research can be represented as a trail to computerize the most soil engineering properties to compute them automatically using many simple Microsoft Excel functions based on raw soil test experimental data. This work will be shortening the time and effort of the geotechnical engineers calculating different soil parameters with acceptable accurate values. Nine different Microsoft Excel formulas, some of the techniques by certain Excel expressions and normal designed algebraic equations were used to present the final spreadsheet. The main computed soil parameters were (ω, LL, PL, PI, $\rho_{d,max}$, ω_{opt}, k) soil classification AASHTO, (q_u and c_u) for unconfined compression test, (ø and c') for the direct shear test finally (Cc and Cs) for consolidation tests. To get a better understanding on how most of the programmed tools and to Microsoft Excel sheets work, the user should have knowledge about basic concepts of the certain soil parameter test and experimental steps and also the guidelines of the theory that depends to compute the parameter. Also, the user should have enough background about engineering soil properties laboratory experiments computation.

Introduction

Microsoft Excel program is one of the most common programs that engineers used to solve problems and presents solutions step by step. Brkic (2017) employed Microsoft Excel in a classroom to solve Colebrook Implicit Equation. The stream friction factor (λ) in Colebrook mathematical expression was found to be an accepted principle for computations of hydraulic resistance in both hydraulically smooth and rough, pipes. In this paper, problems facing fluid dynamics were discussed. Author here proposed a necessary tool to solve these problems and other problems similar to that. Also the author recommended to solve that task using other software's such as MATLAB [1].

Su-nan (2012), explored the application of the Microsoft Excel in prediction the horizontal bearing capacity of foundation, this study designed manual calculated the horizontal bearing pressure for pile foundation by Microsoft Excel formula. It was found that, the Microsoft Excel technique can be used as a template to be used repeatedly if one the main input parameters changed [2]. Gidam and Beaudet (2000), studied the Monte Carlo simulation using Excel (R) spreadsheet to predict the reliability of a complex system. This study represented in developing of the above simulation. Logical expressions were used to determine system success or failure, Excel's macro feature enables repetitions of the scenario thousands of times while automatically recording the failure data [3].

Niazkar and Afzali [4] published an article on how Microsoft Excel spreadsheet develops engineering education. They found that, four engineering departments are widely using Microsoft spreadsheet i.e. mechanical, chemical, electronics and civil engineering. They finally concluded that, the necessity of using Microsoft Excel in any education stages engineering [4]. In this research, the Microsoft Excel program expressions were employed for civil engineers to calculate some of the soil parameters easily for deferent soil types.

Determination some of Soils Parameters

According to many soil laboratories books and testing standards, Table 1 summarized the methods of determination for some of the required soil parameters and soil classifications. This table also

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Original article

Tension stiffening evaluation of steel fibre concrete beams with smooth and deformed reinforcement

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ABSTRACT

This study investigated the flexural performance of steel fibre beams reinforced with smooth and deformed reinforcement, both experimentally and numerically. As part of the experimental investigation, five full-scale reinforced concrete beams were constructed with plain and steel fibre concrete and were tested under 4-point flexural monotonic loading. The amount of fibre and the condition of the rebar were the main parameters studied. The test's outcome built up a numerical model to simulate the actual performance of the reinforced concrete beams under tested loading. Afterward, a parametric study was conducted to get a better understanding of the behaviour of the steel fibre concrete beams. The experimental results show that the cracking load was not affected by the steel reinforcement conditions, whether smooth or deformed. Moreover, 9% of the ultimate deflection was caused by tension stiffening and 3% due to the steel fibre content in steel fibre concrete beams. Finally, the concrete compressive strength was found to have less of an effect on the ultimate deflection than the ultimate load.

1. Introduction

Generally, steel fibre (SF) is used to enhance the mechanical performance and crack propagation resistance of the concrete because SF has inherently superior material properties. The steel fibre concrete matrix had a good performance, in terms of tensile strength, flexural strength and relaxation (Al-Ghamdy et al., 1993; Gao et al., 1997, Thomas and Ramaswamy, 2007). However, it was observed that steel fibre addition had only a minor influence on the compressive strength (Fanella and Naaman, 1985; Sivakumar and Santhanam, 2007; Zarrin and Khoshnoud, 2016a, Zarrin and Khoshnoud, 2016b; Najigivi et al., 2017). The workability and stiffness of the steel fibre concrete matrix decreases with the amount of steel fibre increases (Altun et al., 2007; Özcan et al., 2009). An extensive amount of studies have been conducted on fibre-reinforced concrete members to gain a fundamental understanding and characterization of the overall behaviour. There are still more studies needed to investigate, in particular, nonlinear tension stiffening behaviour of steel fibre concrete members, which is necessary for the design considerations. Romualdi and Mandel (1964) conducted an experimental investigation into the wire spacing affect on the concrete aspects, particularly in terms of tensile stress, and they determined the wire spacing-tensile cracking strength relationship of the steel fibre concrete members. The steel fibre addition shows significant enhancement of the reinforced concrete members, with relation to carrying the moment capacity, resisting fatigue loads, crack widths and creep compared to other types of fibre (Kormeling and Shah, 1980). Additionally, it was noted that the composite matrix restored the load and crack resistance capacity of the damaged members (Tan et al., 1994; Ashour et al., 2000), and led to significant influences on the crack number and crack width (Vandewalle, 2000). Behbahani et al. (2012) tested experimentally eight full-scale RC beams to study the effect of the different amounts of steel fibre on flexural behaviour. This study focused on beams with four point loads and simply supported boundary conditions. Based on the tests conducted, it was determined that the effect of steel fibre on flexural behaviour for beams with high compressive strength C50 is more obvious than beams with low concrete compressive strength, C30. This was confirmed by the excellent embedding of the constraints between the steel fibre and the concrete.

The stress transfer mechanisms in the tension side of the concrete through the cracks show that a notable stress sharing mechanism in normal concrete can transfer directly over main steel bars

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Behavior of tension lap spliced sustainable concrete flexural members

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Abstract. The use of spliced reinforcing bars in sustainable concrete members to manage inadequate bars length is a common practical issue which is may be due to some limitations. The lap splicing means two bars overlapped in parallel with specified length called the splice length in order to provide the required bond between the two bars. The bond between sustainable concrete and spliced steel bars is another important issue. The normal strength sustainable concrete specimens of sizes 1700×150×150 mm with tension reinforcement lap spliced were selected according to testing device length limitations. These members were designed to fail in flexure in order to investigate the lap spliced tension bars effect. The selected lap spliced tension bars were of 10 mm size with smooth and deformed surfaces in order to investigate the surface nature accompanied with the splice nature. The sustainable concrete mechanical properties and mix workability were also studied. This study reveals that the effect of number of spliced bars on the response of beams reinforced with smooth bars is found to be more obvious than deformed one. Finite element modeling in three dimensions was carried out for the tested beams using ABAQUS software. A parametric study is carried out using finite elements on considering the following parameters, concrete compressive strength, load type and opening in cross section (hollow section) for weight reduction purposes.The laboratory and numerical results show good agreements in terms of ultimate load and deflection with an average difference of 10% and 15% in ultimate load and deflection respectively.

Keywords: sustainable concrete; beams; experimental test; finite element analysis; lap-spliced

1. Introduction

Concrete is a building material widely used in construction projects all over the world. The production of raw materials such as cement and aggregates which used to produce concrete is considered as a major concern environmental problems. The emission of CO_2 during the production of cement and the waste results from construction process and demolition are examples of such problems. Concrete that used lower cement content through using pozzolanic materials such as silica fume or metakaolin to replace cement with or without recycled aggregate is considered as a sustainable concrete. The problem of lap splicing of steel bars is a common construction issue which is used in concrete structures to overcome the continuous reinforcement bars requirements for long concrete elements. Other reasons for using lap splicing are sometimes referred to transportation limitation or designer reinforcement detailing. Lap spliced length and number of permissible lap spliced bars limitations recognized in codes must be discussed and studied.

The bars surface nature mentioned in codes focused on using deformed bars only in order to achieve the required bond between lap spliced bars and concrete which is an impotent issue. For flexural members, their strength depends on different physical parameters such as concrete strength in compression, steel reinforcement yield strength, beam dimensions and amount of reinforcement ratio. The result of these parameters will be the member stiffness. If the members are supported on spans larger than (12 m), the lap spliced technique is selected to reinforce the longer span members, however this technique should be carried out in accordance to the international design codes. The American Concrete Institute 318 (2014) has recommended the overlap splice with the minimum length of 40 multiplied by nominal diameter of bar (d_b). Knowing that, the reinforcing steel bars splice length must be longer than the development length in compression reinforcement in case of compression member (l_{dc}). While it should be longer than the development length in tension reinforcement in case of tension member. The Canadian Standard CSAA23.3 (2004) suggests an equation for the bond strength prediction which is similar to the ACI one. In 2000, Esfahani suggested an equation for the ductility criteria of spliced high strength concrete members subjected to monotonic loading as previous equations are applicable to normal concrete. Esfahani and Kianoush (2005) investigated the effect of web reinforcement quantity or ratio continuously provided along the spliced bars on the flexural member ductility. They concluded that the bond strength and ductility are increased with increasing web reinforcement quantity. But the increase in the splice length (l_d), does not affect the bond of spliced bars for high strength members.

Allam (2013) investigated the external strengthening of flexural members having short lap splice length for flexural tensile bars. Six members with identical dimensions and steel ratio were used in the laboratory specimens. Two reference members were tested. The first member was

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Bond Stress Assessment of Corroded and Un-Corroded Reinforcement Inside the Concrete

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Abstract—Corrosion of steel bars is considered to be one of the major factors affecting durability of the concrete structures. In this paper, the bond stress response of corroded and un-corroded embedded bars inside the concrete was assessment experimentally. Twelve cubes were tested experimentally for that purpose. The main parameter of this work was the reinforcement condition, corroded, un-corroded and epoxy coted reinforcement. The corrosion process was executed for 90 days duration. It was found that bond stress for samples subjected to long-term corrosion (for a period of 90 days corrosion) was reduced by approximately 54.4% and the slip was reduced also by a bout 30%. Moreover, the bond stress was reduced by 26% for samples where the reinforcement coated with epoxy. Finally, bond stiffness between the concrete and the reinforcement was deteriorated in the corroded samples more than that in the samples which treated by the epoxy.

Keywords---*Bond Stress; Bond stiffness; Corrosion; Epoxy; Slip*

I. Introduction

The bond response between the reinforcing steel bar and the concrete around is fundamental in reinforced concrete (RC) elements, particularly for those elements subjected to long-time chloride corrosion and contamination. The deterioration in bond of the corroded steel bar and concrete will influence the stress transmit and the compatibility of the axial and shear deformation through the steel-concrete interface which is significantly influence the serviceability and the integrity of RC members.

Corrosion of steel rebar usually develops due to attack by aggressive conditions such as chloride ions. The characteristics of the bond is enhanced at initial stage of corrosion, this is attributed to the higher coarseness developed at the steel bar surface. After that, the coercion development in steel bar causes deterioration in bond and considerably reduces the confinement provided by concrete due to the significant reduction in steel rib's area. Since stresses are developed around the reinforcing bars that causes concrete cover cracking and concrete spallingwhich eventually leads to failure in bond between steel rebar and the concrete around (Lin and Zhao, 2016).

A significant research investigation has been carried out to trace the bond response between steel rebars and concrete in order to test their influence on the mechanical performance of RC structures. The majority of the reviewed studies focus on the maximum bond intensity or strength between the deformed and plain bars and concrete around (Lin and Zhao, 2016; Lin et al, 2017), bond anchorage of reinforcing steel bars (Castel et al. 2015), flexural and shear behavior (Visintin et al. 2012 and 2013), and concrete cover cracking (Gupta and Maestrini 1990; Choi and Cheung 1996; Marti et al. 1998; Knight et al. 2013),.

The bond behaviour between epoxy coated deformed and plain reinforcing steel bars are extensively used in civil engineering application to enhance the corrosion resistance, in spite of the lowering in bond strength

NONLINEAR FINITE ELEMENT ANALYSIS OF LIGHTWEIGHT STEEL FIBRE CONCRETE BEAMS

Sultan A. Daud*, Raid A. Daud, Omar K. Faith and Adel A. Al-Azzawi

***Abstract*— The shear behaviour of steel fibre reinforced lightweight concrete beams was investigated numerically. A nonlinear finite element software 'Midas Finite Element Analysis software' was used in this study. Load distribution, shear-span to beams depth ratio, and the longitudinal tensile reinforcement ratio were the main parameters. It was found that 'Midas Finite Element Analysis software' predicts the performance of lightweight concrete accurately. It was also noticed that, the maximum shear stress seems to be a function of tensile reinforcement ratio. Based on this study, it is strongly recommended to use lightweight concrete to produce flexural members resisting shear loads.

***Keywords*-Concrete beams, steel fibre, lightweight, finite elements, MIDAS

INTRODUCTION

Nowadays concrete is assumed to be the most extensively utilized building material across the world. With the increase of high-rise buildings and an overall increase in span lengths, concrete weight has become an issue that many researchers have started to focus on [1]. Lightweight concrete was developed by researchers to replace the normal concrete in some instances. Lightweight concrete has many properties, such as thermal and acoustic insulation, besides low self-weight. The most common way to produce it is obtained by using lightweight aggregate to produce structural lightweight aggregate concrete (SLWAC). The main proprieties of this concrete are the dry density at <2000 kg/m3 compared with that of 2400 kg/m³ for normal weight concrete (NWC) [2]. The downsides of this method are weakness and brittleness of lightweight aggregate [3]. It is well documented that lightweight concrete has drawbacks as compared with normal concrete (less concrete strength, tensile strength, elastic modulus… etc) [4]. Fibre (steel or synthetic) has become a popular material that, used together with lightweight concrete, enhances their proprieties and use as an important material. It was previously shown that 2% steel fibre is enough to enhance concrete ductility [5]. The combination of both fibre and lightweight concrete has not been valued yet in most of the design codes [6]. So steel fibre overcomes the defect of lightweight concrete with ductility [7]. Mo et. al [8] studied experimentally the shear performance of lightweight concrete beams, with and without steel fibres. Authors found that the Eurocode 2 [9]-suggested equation gave a conservative calculation for the section's shear capacity. The development of civil engineering software for tracing the performance of concrete specimens has made two disciplines for researchers to obtain a theoretical solution by: developing a finite element simulation on computers or calculating with analytical methods. The shear behaviour of concrete specimens is generally examined in the laboratory through conducting experiments, but this process requires considerably more time and effort. The experimental laboratory is usually limited because of the difficulties in delivering the materials and the appropriate conditions to conduct the experiments. Additionally, it is hindered by scarcity of usage of materials that are determined by certain number of specimens. Midas Finite Element Analysis program was chosen for this study because the finite element method can solve complex and difficult physical problems with an acceptable approximation. As concrete is a material showing nonlinear behaviour during loading, it is modeled so as to show a nonlinear behaviour with Midas Finite Element Analysis program. Procedure for Paper Submission

I. RESEARCH OBJECTIVE

The main purpose of this work is to study the behaviour of the lightweight fibre reinforced concrete beams using three-dimensional finite element software. The shear strength of fibre lightweight concrete beams was investigated briefly, as a crucial criterion in such material. For this purpose, lightweight specimens with and without fibres were modeled using finite element solutions of Midas Finite Element Analysis program. The previous experimental and the present finite element results are compared numerically and graphically.

II. EXPERIMENTAL OVERVIEW

In this paper, an experimental work presented earlier by Mo et. al [8] was used to build a nonlinear finite element model. They tested two oil palm shell (OPS) lightweight concrete beams under four points load (fixed displacement control 2 mm/ sec). The first beam was without steel fibre (C0) and the other one had 0.5% steel fibre (C0.5). All beams had the same dimensions (125 x 150 x 1300) mm. Both specimens had no strips, thus they fail in shear.

Beam geometry and reinforcement layout are presented in Figure 1. The steel fibre used in their study was hocked ended shape, with 35 mm length and 65 aspect ratio. Table 1 presents the mix proportion and mechanical proprieties. ϕ 12 bar were the tensile reinforcement used in their research. Shear force and mid-span deflection were recorded during.

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Thermal Behavior of Hollow and Solid Steel Beams with Different Boundary Conditions

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The thermal behavior of hollow steel structural members due to the temperature increase has not been investigated and discussed in many design codes. This work presents a study of the hollow and solid steel beams' carrying capacity under elevated temperatures. The material properties of such beams decline under the temperature expected to increase the moments on the beams. The finite difference technique is selected first to analyze the problem. The solved problems cover beams under concentrated point load levels with different end conditions such as cantilever, pin roller, and both ends fixed. The beam response (deflection, bending moment, and normal force) is examined. The finite element analysis was conducted using the DIANA FEA software to study the same problem incorporating material and geometric nonlinearities. It was found that both finite difference and finite element analysis solved the problem accurately when the temperature was under 500°C. It was also found that when the temperature was applied to the beam bottom face the deflection was smaller than when the temperature was applied to the side faces only and the whole section.

Keywords: hollow beams, finite difference analysis, finite element analysis, thermal loading, boundary conditions.

1. Introduction

Steel is a very strong construction material widely used in the construction of major structural elements. The use of steel as one of the most prevalant construction materials is due to its excellent mechanical properties such as higher ductility, higher modulus of elasticity, and higher tensile and compressive strength.

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Cracks Performance of Lightweight Concrete Beams

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Abstract

Creep, shrinkage and loss of tension stiffening are the main factors that effect the long-term behavior of reinforced concrete structures. This study aims to investigate numerically the long-term behavior of lightweight concrete beams under sustained loads. A nonlinear finite element software (Diana FEA) was used to simulate the experimental results and it was found that, Diana FEA predicts the long-term behavior of normal and lightweight concrete beam accurately. Also, the loss of tension stiffening is almost twice in LWC beams than that in NWC beams.

Keywords: Lightweight concrete, Long-term deflection, Loss of tension stiffening Diana FEA.

Introduction

Lightweight Concrete (LWC) is a versatile material that can be used for various application such as panel and block construction, wall and full house casting, sound barrier walls and many other applications. LWC is typically required to reduce construction costs, improve efficiency, or to reduce the dead wight of the structure. The structural LWC density is lower than that on normal concrete (15-40%). Whereas the LWC compressive strength could be equal to that achieved by Normal Weight Concrete (NWC) (Clarke, 2002, Alallaf 2016).

The splitting tensile strength of LWC gradually decreases as the lightweight aggregate content rises from 30% to 60%, according to Gesoglu, et al. Also the tensile strength of LWC is lower than that for NWC as its cohesion between aggregate particles and the paste is less compared to CC with the same compressive power. Al-Khaiat & Haque, founds that, the tensile strength elastic modulus and rupture modulus of LWC to be 80% less than that obtained from NWC for a period of 9 months. In 2011, Alengaram found that, the workability of LWC was higher compared to NWC if the LWC have the same strength but 20% less density than NWC. By replacing 60% of the volume of aggregates with Expanded Polystyrene EPS beads, sandwich panels of lightweight concrete could be made and that suggested only for non-load bearing walls which can provides a good thermal insulation and reducing the self-weight ,also mixing 40% of coarse aggregate with 60% of EPS beads gives a compressive strength and flexural strength of 13.73 N/mm2 and 0.57 N/mm2 respectively ,also they can reduces the self-weight and thermal conductivity in a percent of 25.7% and 25.3%,respectively. (Sivakumar.C. G. & Naga Priya.S, 2021)

The behavior of reinforced concrete members is influenced by creep and shrinkage over time, mainly in cracked members. tension stiffening relationships is linked with creep and shrinkage effects (Eigelaar, 2010).

Liu at al., (2007), Haranki (2009) and Gambhir (2013) found that, creep affected by many factors such as the concrete age, the applied load amplitude, raw material characteristics. Gilbert & Ranzi, in 2010, reported that when the aggregate content or the maximum size of aggregate increase and\or water\cement ratio decreases, the concrete resistance to creep will be decreases.When the creep coefficient and shrinkage increasing or decreasing in a percent of 20%, only 6% of final LWC deflection will be decreased or increased (Birjandi & clarke,1993). In 1999, Kayali et al., studied the drying shrinkage of fiber-reinforced lightweight aggregate concrete containing fly ash as 23% of the total cement paste content, they showed that when the LWC has the same compressive strength of NWC, the drying shrinkage for LWC will be doubled its value for NWC, but the early shrinkage is similar to that of NWC the same. The LWC shrinkage cracking is less than that for CC. Also, higher shrinkage was obtained during the first 50 days when the mixture comprises higher aggregates volume. according to w\c ratio effect, shrinkage increases as w\c ratio increases. (Gesoglu et al., 2004). Tension stiffening is anther factore that effecting the long-term behaviour of concrete structure. Tension stiffening is the concrete ability to withstand stresses even after cracking. It was previously showed that, 50% of the loss of tension stiffening of the normal concrete beams take place in the first 20 to 30 days (Scott and Beeby 2005). Moreover, Higgins et al. (2013) and Daud et al., (2018) mensioned that, for the case of repeated laod, the extra defection take place in the first 10days. Daud et al., (2021-a) found expermently that, 9% to10% of the overall deflection of the noramal concrete beams is due to the loas of tension stiffening. Although the loss of tension stiffening of normal concrete has been investegated (Daud et.al 2021-a), further areas of research have not been conducted yet. In this paper, the long-term behaviour of lightweight concrete beams under long-term loads was investigated numerically using Diana FEA. Followed up by a parametric study to get a general understanding on the environmental conditions that effect the overall behaviour.

Experimental Overview

A previous work was done by Wang, et al., in 2020 which studied the long-term performance of lightweight aggregate reinforced concrete beams (16 large scale LWC beams and 1 control NWC beam) was selected in this paper to be simulated. All 17 beams

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Civil Engineering

Behavior of reinforced concrete solid and hollow beams that have additional reinforcement in the constant moment zone

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ABSTRACT

This paper presents the effect of non-uniform reinforcement ratio along the beam length on the flexural behaviour experimentally and numerically. Within the experiment, four reinforced concrete beams each had a different reinforcement ratio. However, three of four beams had a similar reinforcement ratio in the constant moment zone (0.012). Cracking load, load carrying and deflection were monitored through the test. A nonlinear finite element software was implemented to simulate the experimental behaviour. Followed up by a parametric study. It was found that, in reinforced concrete beams, the tension stiffening depends on the concrete area in the tension zone not the reinforcement ratio. FEA predicts the reinforced concrete beams behaviour within a good agreement. Finally, the findings show that, determining variable amount of reinforcement ratio along the beam length will not sacrifice the flexural behaviour, but it will reduce the quantity of the steel reinforcement and the overall cost.

1. Introduction

Nowadays, a huge number of structures are exposed to degradation due to overloading, environmental conditions (hot in summer and cold in winter), natural hazards and loss of tension stiffening with time. Therefore, retrofitting these structures has become a very important issue. Previously, the techniques utilized included section enlargement, bonded steel plate strengthening, ferro-cement, external post-tensioning techniques and fibre reinforced polymer (FRP) wrapping [1–4]. Some of these techniques had limitations, however, such as the cost of materials and maintenance, reduction in headroom, and hindrances in implementation. Thus, FRP is considered the most commonly used and relatively easy installation material developed for strengthening reinforced concrete members. It was believed that the FRP strengthening acts as an additional tensile reinforcement, which leads to increase in the load carrying capacity and ductility [5–9].

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According to Vlassis et al. 2008 [10], there should be an upper limit for the additional reinforcement that should be used to prevent the brittle failure of beams.

Ductility is an important issue that engineers consider in design. Reinforcement ratio, concrete compressive strength, shear links spacing are the main parameters that affect the ductility [11–14].

Both the ACI Committee 318-19 [15] Code and Eurocode 2 (2011) [16] have a limitation to the maximum reinforcement ratio that should be used in order to avoid a sudden collapse. The effect of tensile reinforcement ratio on the behaviour of high strength concrete beams was investigated experimentally by Hadi and Elbasha (2007) [17]. They found that beams' ductility increased with the increase in both compressive strength and reinforcement ratio. Moreover, Qi et al. (2017) [18] studied experimentally the effect of reinforcement ratio and steel fibre on the flexural behaviour of reinforced concrete beams and found that the effect of the reinforcement ratio on the stiffness and carrying capacity was more than that of the steel fibre. In general, the word lap-splice is suggested to identify the overlapping two lengths of equal bar diameters, then connecting them by welding or steel wires to form one segment. For the structural engineer, the most important factor in bars lap-splicing is the length of overlapping. However, the limitations on this length may change depending on steel bar diameter and the location of splicing in structural members. The overlapping length and the permitted locations of splicing are subject to different building code requirements. Most local building

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Effectiveness of Using Carbon Fiber Grid Systems in Reinforced Two-Way Concrete Slab System

by Zena Aljazaeri, Hayder H. Alghazali, and John J. Myers

Fiber-reinforced polymers (FRPs) were recently used as a replacing reinforcement in concrete structures in view of their excellent resistance to corrosion, light weight, and high specific strength. A state of the art process of using carbon fiber grids as an internal reinforcement with self-consolidating concrete in two-way slab systems is presented herein. The experimental work included studying the flexural performance of the carbon fiber-reinforced polymers' (CFRP) grid in comparison with the conventional welded steel wire mesh. This study is expected to find its application in parking garages or flooring panels to enhance the durability performance and extend the service life of concrete slab members. The load-deflection relationship, ultimate load, energy absorption, and failure mode of simply supported slabs with different aspect ratios were discussed. The experimental results of this study showed that the fiber-reinforced polymer (FRP) grid is appropriate as a structural reinforcement. In addition, the FRP grid tended to fall within the criteria of minimum load requirements per ASCE 7 as the steel wire reinforcement did and satisfied the service limit state of deflection per ACI 318 at approximately 50% of their ultimate loads.

Keywords: fiber-reinforced polymer (FRP) grid; flexural strength; self-consolidating concrete; steel wire; two-way slab.

INTRODUCTION

The extensive corrosion of steel reinforcing bars stands out as a significant factor that limits the life expectancy of reinforced concrete structures. In the United States, the freezing-and-thawing cycles, wet and dry cycles, and heavy salt exposure interfere with the structural elements.[1-3] The severe environmental exposure often results in corrosion of the steel reinforcement and, consequently, deterioration of concrete elements. To solve this problem, professionals have turned to alternative protective methods such as increasing the concrete cover, improving the permeability of concrete, employing cathodic protection, and coating the reinforcing bars with epoxy. However, none of these methods have been totally successful in eliminating the risk of corrosion.[4,5] Therefore, the innovation of fiber-reinforced polymer (FRP) composites led the researchers and engineers to explore the applicability of using FRP composites as an alternative reinforcement to extend the service life of the structural members and reduce the cost.[2,3] The FRP reinforcements have been used successfully in many industrial applications and, more recently, have been used as a concrete reinforcement in bridge decks and other structural members.[1] Several experimental studies have been conducted to determine the behavior of concrete structures reinforced with FRP composites that included the FRP reinforcing bar as an internal reinforcement. A team led by Ombres et al.[6] investigated the flexural behavior of the glass-FRP (GFRP) reinforced concrete one-way slab systems. Cracking and deflection of GFRP reinforced slabs were analyzed both theoretically and experimentally. Also, a comparison between the flexural behaviors of the GFRP-reinforced slabs with the steel-reinforced slabs was carried out. The slabs' test results determined that the GFRP-reinforced slabs had a lower flexural stiffness than the flexural stiffness provided by the steel-reinforced slabs. Therefore, the GFRP-reinforced slabs experienced wider cracks and significant deflection. However, the ultimate capacity of the GFRP-reinforced slabs increased with the provided amount of GFRP bars. Aiello and Ombres[7] used a hybrid reinforcing combination composed of FRP bars and steel reinforcing bars in concrete beams that were studied. The structural behavior of the beams was focused on the deflection, curvature, ductility, crack width, and spacing between reinforcing bar. The researchers found that the use of the FRP and steel reinforcement have a great influence on reducing the deformability under service conditions as the FRP beams designed as over-reinforced beams. Benmokrane et al.[1] used glass-FRP reinforcing bar as an internal reinforcement for a slab deck of the Morristown Bridge in the United States. The bridge was tested for service performance using standard truck loads. Field test results revealed that the GFRP reinforcing bar provides a very good and promising structural performance under service conditions. The recorded maximum tensile strain in concrete was well below the cracking strain and the strain reading in FRP bar was only 0.19% from its ultimate strain. The measured deflections were very small in comparison with the allowable limits of deflection by AASHTO specification. Bellakehal et al.[8] conducted an experimental investigation of the effect of high temperature and sustained loads on the structural behavior of FRP reinforced concrete slabs. Several findings were determined based on the applied temperature and sustained loads. Specifically, the longitudinal thermal strains at the GFRP bar/concrete interface were reduced under applied mechanical loads for exposure to more than 104°F (40°C). Loading the slabs to 20% of their expected ultimate capacity showed no influence under exposure to temperatures between 86°F and 140°F (−30 and +60°C). Ghatefar et al.[9] used the noncorrodible glass-FRP reinforcing bar in reinforcing concrete deck slabs that exposed to early shrinkage. Test results determined that an increase in the GFRP reinforcement ratio led to a decrease of the average crack width at midspan and strain in the GFRP reinforcing

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Effect of accelerated curing regimes on high volume Fly ash mixtures in precast manufacturing plants

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ABSTRACT

Fly ash is becoming a common replacement for cement in concrete. Not only does it reduce CO_2 emissions, but it is cost effective and often times improves various fresh and hardened properties of concrete. Currently, Fly ash isn't replaced in percentages greater than 25–35% in structural applications because of the delayed concrete setting time. This study presents an experimental investigation to evaluate the performance of mortar mixtures incorporating up to 70% cement replacement with Fly ash under the effect of accelerated curing. Different accelerated curing regimes were investigated in terms of the preset time, curing temperature, and curing time. Fresh and hardened properties of HVFA mortar mixtures were obtained for three replacement level and their results were compared at different ages. The accelerated curing regimes successfully developed high early-age strength mixtures that can be used in the precast industry. Some curing regimes revealed the ability to reduce energy as well as curing time.

1. Introduction

Concrete is a structural material that has proven itself among all construction materials to be used widely and cost effectively around the world in structural engineering applications. Advanced structural materials incorporating supplementary cementitious materials and chemical admixtures have fulfilled the requirement for economic and sustainable concrete production. These materials are highly impactful on improving the mechanical and durability properties of concrete, Alghazali and Myers [1]. The particular interest of this study is the use of high volume Fly ash (HVFA) concrete for use in the precast industry. HVFA concrete represents a replacement of 50% or more of the cement content by weight, ACI 232 [2]. According to ASTM C125 [3], Fly ash is considered as a pozzolan material that does not react with water individually. However, it chemically reacts with calcium hydrate at ordinary temperatures and produces a calcium-hydrate-gel. It is effectively used in high-strength concrete (HSC) in order to reduce the early heat generation, improve concrete workability at the plastic stage, and lower drying shrinkage [4]. In addition, high calcium ASTM Class C Fly ash also contributes on improving compressive strength at later concrete ages and produces a durable concrete. Fly ash is a high fineness spherical particle that interacts with the remaining calcium hydrate at later-ages. The later Fly ash reaction decreases the concrete porosity and improves its impermeability, Poon et al. [5], Sánchez [6]. In spite of these advantages of Fly ash, the high content of Fly ash in concrete has some drawbacks such as delay in the setting time, reduction in very early-age strength, and potential flash set, Myers and Carrasquillo [7]. These drawbacks have limited the use of HVFA concrete in the precast industry since the concrete should have a sufficient strength developed at one or two days before the release of the pre-tensioned strands, Cassagnabere et al. [8]. Consequently, the use of HVFA concrete would often require an accelerated curing technique to reduce the setting time of concrete and develop sufficient early-age strength. However, implementing accelerated curing regime on concretes containing high amount of Fly ash may also increase the proportion of large pores which can significantly reduce the mechanical and durability behavior, especially over the long-term, Ba et al. [9]. Different standards such as CSA [10], PCI [11], and AASHTO LRFD [12] provided standard curing approaches for ordinary concrete mixtures to be used in precast plants. The accelerated curing regimes were based on three parameters, preset time, curing temperature, and curing time. The selection of these parameters is very imperative to accelerate the hydration reaction and achieve early-age strength development without compromising the HVFA mixtures' properties at later-age. Most standards recommended that accelerated curing be applied after the initial setting or at least 3 h after concrete placement. The selected curing temperatures were based

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A state of the art review of fiberless and steel fiber reinforced high strength concrete columns behavior under various loadings

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Abstract. Efficient supplementary materials flourish the structural performance and sustainability of reinforced concrete structures. Steel fiber is one of these materials that have significant influence on enhancing tensile and flexural strengths and ductility of high strength reinforced concrete columns. This paper presents a review study on the structural performance of steel fiber reinforced concrete columns. The studied case was related to the columns that subjected to concentric or eccentric compression loads or combined compression loads and cyclic lateral loads. The current survey is divided into two branches; the first is related to fibreless HSC columns, while the other is specialized by SFRHSC ones. In addition to the prime actuator (steel fiber content), the investigated parameters were included concrete strength, transverse reinforcement properties, and axial load ratio. The results of this investigation showed that the positive influence of adding steel fiber on improving the flexural strength, fatigue life and resistance, delaying spalling failure of the exterior concrete shell and outward buckling of the longitudinal steel reinforcing bars. The optimum volume fraction of steel fiber used is 0.5% to 2% (by weight) and when 2% of steel fibers are introduced into the concrete mix, the columns' cover didn't spall away.
Keywords: Steel-fiber reinforced concrete, fibreless concrete columns, high strength concrete columns, columns' transvers reinforcement, moment resisting columns, cyclic loading on columns, concrete columns ductility, concrete compressive strength.

1. Introduction

Till nowadays normal strength concrete is frequently used in columns of low-rise buildings. Nevertheless, high strength concrete has proved to be indispensable for high rise buildings. Besides, the high strength concrete has become the optimum choice for columns in bridges and the piled deep foundation [1].

In general, high strength concrete surpasses its conventional predecessor; the normal strength concrete, in terms of the principal strength respect after hardening (i.e., compression, tension, shear, splitting and rupture), in addition to the elasticity modules. The main purpose behind using high

Structural Modeling of High strength Reinforced Concrete Columns with Steel Fiber under Different Loading Conditions

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ABSTRACT

This study presents the results of anumerical simulation of 21 high-strength concrete (HSC) columns to study the effect of steel fiber content on the behavior and strength of HSC columns. A finite element simulation was done by ABAQUS/CAE program. The columns' specimens were subjected to concentric and eccentric loads. The selected eccentric load was applied at a distance 80 mm and 250 mm away from the centroid of the circular columns. Different steel fiber content was considered as 0%, 0.75%, 1.5%, and 2%. The columns are divided into three groups: the first group of the columns was without any steel fiber neither in their cover nor their core (non-fibered columns), the second group consisted of columns with the concrete core without steel fiber and the concrete cover with steel fiber (partially-fibered columns), and the last group of the columns was with steel fiber in whole section (fully-fibered columns). The test study showed that adding steel fibers in different proportions to the concrete columns leads to a significant increase in the bearing capacity of the columns compared to columns without steel fibers. It was also found that concrete columns with 2% steel fibers content showed minimal cover spalling and higher final strength than the rest of the columns.The addition of steel fibers had a significant effect on the maximum load that the specimens could withstand under eccentricity loads.

Keywords: columns, high-strength concrete; ABAQUS; steel fiber; ductility; eccentric.
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Research Article

Efficient use of steel fiber in high-strength reinforced concrete columns

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Abstract
The inclusion of steel fibers has been widely used in column members due to its effectiveness in enhancing strength, ductility, and delaying concrete cover spalling failure. Reinforced concrete columns are recently included steel fibers to enhance their structural performance and control the strain in concrete. In this study, partially-fibered and fully-fibered high-strength concrete (HSC) columns were investigated and compared to non-fibered HSC columns. The partially-fibered columns were examined here to eliminate the extra use of steel fibers through the confined core of the columns. The experimental work included different study parameters: percentage of steel fiber content, columns' length, and internal reinforcement details. The columns were tested under concentric axial loads. The results were analyzed in terms of improvement in the ultimate load, displacement ductility, and energy absorption. The test results determined the impact of using steel fibers in enhancing the axial ultimate load capacities of HSC columns between 14% to 80% of that in non-fibered columns and controlling the concrete cover spalling failure. As well, the test results showed that the increase in steel fiber content improved both the ductility displacement index by 29% to 66% of that in the non-fibered column and the energy absorption index by 1.5 to 3.2 of that in the non-fibered column.

Keywords
Steel fiber, High-strength concrete, Columns, Axial compression, Ultimate load, Failure.

1.Introduction
Reinforced concrete (RC) columns are the main structural elements in most infrastructural systems. High-strength concrete (HSC) columns have recently been used to improve the mechanical and durability performances of RC columns. However, a low confinement effect was detected [1] and a brittle failure of concrete columns was observed [2]. To overcome these problems, steel fibers were included in a mixture of HSC columns. Much experimental research has investigated the influence of the addition of steel fiber to HSC columns. Some research works have inspected the performance of steel-fiber HSC columns under concentric and eccentric compression loads [1−6].

The experimental results concluded the effect of the addition of steel fiber on arresting concrete cover spalling and increasing the ultimate load and ductility of the corresponding columns.

The test results showed that the inclusion of steel fiber improved the ductility of HSC columns by altering the descending portion of the stress-strain curves.

As well, the deformability of HSC columns was developed by increasing both the strain at peak stress and the ultimate compressive strain at failure. The positive effect of steel fibers was observed through the experimental tests by bridging action across microcracks in the concrete mixture which was eliminated the cracks and reduced the crack opening [7]. Based on that, this study is to examine the structural behavior of non-fibered and fiber-reinforced HSC columns. This paper presents an experimental testing of circular medium-scale HSC columns under concentric compressive loading.

As the concrete cover spalling is observed for the outer columns' shell where the inside columns' core is confined by internal transverse reinforcement, the idea of this work is to include the steel fibers on the outer shell of HSC columns. Therefore, the experimental work included some columns with steel fibers provided on the outer shell of RC columns

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Numerical Study on Flexural Behavior of Concrete Beams Strengthened with Fiber Reinforced Cementitious Matrix Considering Different Concrete Compressive Strength and Steel Reinforcement Ratio

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ABSTRACT

Concrete structures retrofitted with fiber reinforced cementitious matrix (FRCM) have become widespread due to their mechanical and durability performances. However, the behavior of FRCM - strengthened RC members under service loads is still a concern, and more efforts need to be done. In this study, a nonlinear three-dimensional finite element (FE) model has been developed to study the performance of reinforced concrete (RC) beams strengthened by (FRCM). The model was validated against the experimental results gathered from six beams tested under three-points bending. Consequently, the primary numerically studied parameters were longitudinal steel reinforcement ratio and concrete compressive strength. A cohesive damage parameters were investigated to represent the experimental results. Also, the theoretical flexural capacity of strengthened beams based on ACI-549.4R code was evaluated based on the numerical method results. As a conclusion, the numerical results are in a very good agreement with the experimental ones regarding yielding load, ultimate load, and failure mode. In addition, the developed models from parametric studies concluded the insignificant effect of concrete compressive strength on increasing the ultimate capacity of strengthened beam. However, the steel reinforcement ratio has a major impact on enhancing the ultimate capacity of strengthened beams.

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NOMENCLATURE

E_c	Concrete modulu of elasticity	M_n	Nominal flexural strength at section
f_c'	Specified compressive strength of concret	M_s	Steel flexural strength at section
f_{ct}	Conceret tensile strength	σ_c	Extreme fiber concret compressive stress
M_f	Fiber flexural strength at section	ε_c	Extreme fiber concret compressive strain

1. INTRODUCTION

During the last decade, FRCM composite material was developed with almost the same advantages of FRP strengthening technique such as high strength to weight ratio, corrosion resistant, and ease of implementation in addition to that to overcome some of the FRP drawbacks specially those related to fire resistance or installing on wet surfaces issue [1-2]. The other physical benefits of FRCM strengthening system are good reversibility and good vapor permeability in addition to consider the matrices not toxic material like the epoxy that utlized in FRPs technique [3-5].

On behalf of that, many experimental studies have been investigated the structural and durability performances of FRCM material as a strengthening or a repairing system for infrastructural members and compared with structures strengthened with FRP. The experimental works concluded the effectiveness of the FRCM material in increasing the ultimate flexural or shear loads of reinforced concrete (RC) beams/slabs and masonry walls (references of different aspects)[6-10]. Also, the FRCM material was used to improve the

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Utilizing Underwater FRP System for Hydraulic Structures Application

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Abstract. The development of the use of advance composites is remarkable, especially in applications that require the materials used to be corrosion resistant. One of the most important of these applications is the structures built inside or under water, especially hydraulic structures. Constant exposure to wet makes materials such as concrete and steel threatened to the high level of corrosion and deterioration. The traditional methods for repairing proved insufficient over time, in addition to being expensive in some cases. Therefore, it became necessary to search for alternatives that achieve engineering efficiency and lower costs. One of these alternatives is the use of fiber reinforced polymer (FRP) system. Until recent years, it was not possible to use FRP system under water as a repair system for hydraulic structures without cofferdam. However, during this period, types of underwater cured resins were produced and underwater FRP system is the best choice for this type of structures. There are no many practical applications for the use of FRP in repairing of hydraulic structures, so it is possible to study its application in marine structure to show the possibility of use it in hydraulic structure. This research highlight the advantages and disadvantages of traditional method in repairing underwater structures. Also present project that considered the underwater FRP as a construction material used in the rehabilitation of deteriorated concrete pile. As a conclusion, using fibers with water activated resin can provide an economical solution for future repair and rehabilitation projects. Also the pre-preg system is efficient for repairing dry zones, while the wet layup system is very effective in repairing splash zones of damaged structural elements.

Keywords: FRP, Hydraulic structures, Per-preg , Underwater repairing, Wet layup,

1. Introduction

Steel and concrete are traditionally used in construction of hydraulic structures. These construction materials are subjected to deterioration when exposed to harsh environmental conditions. The steel that used in substructures of bridges or in hydraulic structures in contact with water is subjected to corrosion when it is directly exposed to the natural environmental conditions. On the other hand, the concrete is subjected to cracks as a results of different loads (creep, fatigue, etc.) and these cracks lead to the corrosion of reinforcement bars [1-4]. As a result of the corrosion phenomena, the capacity of the structural element will decrease to the level that lead to the failure if the required engineering treatment are not taken. Accordingly, there is a great need to repair, rehabilitation or replacement of corroded structural element using anti-corroded material. One of the most important materials that used for corrosion resistance is FRP. This material is characterized by its high strength to weight ratio, good durability and the quality of its resistance to the corrosion or chemicals [5-8]. Until recent years, it was not possible to use FRP system to implement the maintenance and repair operations for hydraulic structures without cofferdam [9-11], due to the impossibility of bonding between the wet part and the repairing system. However, during this period, types of underwater cured resins were produced, so it is possible to use these resins in the repairing work of hydraulic structures without the need to make cofferdams [11-12]. This research aims to review and evaluate the feasibility of implementation the underwater FRP system for repairing hydraulic and substructures.

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Flexural performance of extremely damaged reinforced concrete beams after SRP repair

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ABSTRACT: This paper presents the effectiveness of steel reinforced polymer (SRP) in restoring the flexural capacity compromised by damage in the main steel reinforcement. In this study, six full-scale reinforced concrete (RC) beams were designed to simulate the impact damage from overheight vehicles collision. The simulation was represented by concrete beams reinforced with un-continuous reinforcement (splice in maximum moment region) and tested until failed due to splice. The damaged concrete was repaired, and the SRP system (longitudinal soffit laminates and transverse U-wraps) was applied to restore the original moment capacity. All beams were 10 ft (3.0 m) in length, 18 in. (457 mm) in depth, and 12 in. (305 mm) in width. Different repairing configurations were investigated. The studied variables were the provided laminate area and the amount and distribution of U-wraps. The ultimate load capacity, deflection, and mode of failure were recorded during testing. The test results were compared to beam results with continuous reinforcement. It was concluded that the repairing beams with the SRP system can restore the damaged beams to a capacity similar to that of reinforced concrete (RC) beam with continuous reinforcement.

1 INRODUCTION

Infrastructure elements including buildings, highways structures, ports, and dams play an important role in a county's development and productivity if they disrupted or destroyed, they will cause a serious impact on the operation of economy and society. Many infrastructures have been exposed to sever damages due to human sources or natural sources. The fire, explosion, overweight, overheight vehicles collision, else are caused by human sources while the natural sources are represented by corrosion, an earthquake, tornedo, else. The developed technologies have been facilitated the way to repair such damaged structures and restore their ability to resist loading. Several types of new advance repair materials, as well as techniques, have been successfully developed to improve the function and performance of damaged reinforced concrete structures. Many researches have been studied the influence of using fiber reinforced polymers (FRP) in repairing existed infrastructures. Soudki et al. (2000) presented a study on the flexural performance of corroded RC beams that repaired using a patch mortar and FRP composites. The RC beams were subjected to 5%, 10%, and 15% mass losses of their steel reinforcements. The beams were repaired with carbon-FRP at the tension zone and the U-wrapped glass-FRP. The repaired beams showed an increase in the yield and ultimate strength of about 25% to 50% with a reduction in the crack opening up to 88% [1]. Russo et al. (2000) studied the influence of using fiber reinforced plates for flexural repairing and carbon-FRP for shear enhancement of damaged prestressed (PS) girder due to overheight vehicles. The test results showed a 12% increase in the moment capacity of the PS girder [2]. Klaiber et al. (2003) conducted a field demonstration project on repairing damaged PS girders due to overheight vehicles. The field experimental testing revealed that the damaged girder restored its load carrying capacity [3]. Haddad et al. (2008) used a steel and polypropylene fibers with high strength concrete to repair the concrete damages at the compression face and a glass fiber reinforced sheets or ferrocement meshes to repair the tension face of the damaged beams. The enhancement in the ultimate load capacities for the repaired beams were ranged between 99% and 126% of the control beam. In addition, the observed cracks were very fine through the flexural region [4]. El-Maaddawy et al. (2012) used a carbon-FRP with different end anchorages for retrofitting T-girders that were subjected to sever shear damages from overweight vehicles. It was found that

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RESEARCH

Shear strength prediction of steel fiber reinforced concrete beams without transverse reinforcements

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Abstract

The objective of this study is to predict the shear strength (SS) of SFRC beams using the artificial neural network (ANN) and nonlinear regression analysis (NRA) based on a comprehensive database consisting of the test results of 398 SFRC beams from past experimental investigations that experienced shear failure. The ANN model is related to the effect of the concrete strength, the longitudinal reinforcement ratio, the shear span–depth ratio, the fiber factor, and the size effect. The developed ANN model correlated well with the available test results and was employed to conduct a parametric study to examine the influence of the main parameters on the SS. In addition, a simple design model is derived based on NRA that consistently predicts the SS.

Keywords Steel fibers · Reinforced concrete beams · Shear · Artificial neural network · Regression analysis

Introduction

The additive of steel fibers (SFs) to plain concrete is an attractive approach to developing its mechanical strength. The presence of randomly distributed SFs in reinforced concrete (RC) beams enhances the ductility and boosts the flexural and the shear strength (SS) (Bencardino et al., 2010; Biolzi & Cattaneo, 2017; Biolzi et al., 1997; Jain & Negi, 2021; Kwak et al., 2002; Swamy & Bahia, 1985). The SFs resist a part of tension stress in the pre-cracking stage, and they bridge the cracks and help to reduce their propagation afterward (Abbood & Al-Bayati, 2021; Abd & Jassam, 2018; Bencardino et al., 2010, 2019; Biolzi et al., 1997; Jain & Negi, 2021; Jumaa, 2023; Kaufmann et al., 2019, Sakthivel & Vijay Aravind, 2020). Accordingly, adding a satisfactory amount improves the SS by increasing the shear stresses transferred across the diagonal cracks through the aggregate-interlock mechanism, which consequently changes the form of failure from brittle shear to ductile flexure (Kaufmann et al., 2019; Mansur et al., 1986; Narayan & Darwish, 1988; Tan et al., 1993).

SFs have remarkable features in comparison with conventional transverse reinforcement. They provide uniform strength in all directions since they are randomly placed all over the concrete volume with a spacing closer than regular, and they are helpful for structures in seismic regions. They are also cost-effective compared to stirrups that require cutting, bending, and placement. In addition, stirrups could be a poor decision in heavily reinforced members or uneconomical in shallow members with insufficient depth for stirrups to develop their strength (Ashour et al., 1992; Kaufmann et al., 2019; Parra-Montesinos et al., 2010).

Based on many studies, design codes, such as the American code and ACI-318-19 (2014), the Australian standard, AS 5100.5 (2014), and the Fib Model Code (2010), have acknowledged the strength enhancement provided by steel fibers and allow the designers to assign part of the applied shear force to resist by them.

Several investigations have established that the SS of steel fibers reinforced concrete (SFRC) beams without transverse reinforcement is influenced by the same geometrical and material parameters affecting those classic RC beams, like the concrete strength, the amount of longitudinal reinforcement, the shear span–effective depth ratio, and the total depth a beam. The SS of SFRC beams increases with the concrete strength and the longitudinal reinforcement ratio (Kaufmann et al.,

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Artificial neural network modeling of the modified hot mix asphalt stiffness using Bending Beam Rheometer

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ABSTRACT

Tensile related cracking for asphalt mixtures is one of the major distresses for asphaltic pavements. Many of the pavements distortions were a straight and non-straight wards results for heterogeneity of values of the stiffness in the local produced hot asphalt mixes. This research concentrates on constructing an artificial neural network (ANN) to define the influence of natures and dosages of the additives, temperature, and time of loading on the stiffness. This study provides an (ANN) model to estimate the stiffness of hot mix asphalt (HMA). The analysis was showed that a good relationship there is a good representation between the actual and predicted values with a coefficient of determination of 88.6%.

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1. Introduction

Finding tensile strength is the most prominent obstacle facing the design process for asphalt roads [1]. Estimation of the characteristics of the materials used in the production of local asphalt mixtures is important for predicting the future behavior of the asphalt pavement. Therefore, there is an urgent need to find a testing method that gives a comprehensive impression of the total studied samples, and since the aseptic samples are large and difficult to deal with in terms of treatment and configuration, as well as the variation that may occur in the data results, it became very important to consider that a careful testing methodology is chosen that takes into account all the considerations that mentioned. Therefore, this study and previous studies that accomplished were used by many researchers to choose the Bending Beam Rheometer (BBR) test that used to test the samples asphalt binder as a reliable alternative for testing asphalt mixtures according to AASHTO T313/ ASTM D6648 [2–5].

This study aims to present a specific analysis technique that needed to construct a statically model that may describe an engineering phenomenon with its random variables like flexural stiffness. Artificial neural network (ANN) approaches used to assess the stiffness of HMA, and present the asphalt stiffness in correlation with various considerations. ANN considered one of the most important branched in artificial inelegance with higher accuracy than traditional modelling methods [6,7].

Recently, numerous researches have been used the effective approach by utilizing the ANN techniques to comprehended complications that may be facing pavement engineering [8,9]. ANN techniques widely been the most usually used artificial intelligence (AI) methods in transportation fields since the latter's inception in the last four decades [10]. ANN has been broadly utilized to expect compound parameters in various topics in different engineering applications. Moreover it broadly professionally utilized in the pavements field for data prediction which is challenging for records acquirement without extensive investigates otherwise models development [11,12]. The deflections data assembled from the falling-weight shaft for the BBR have usefulness to evaluation the mixtures modulus (i.e. the creep stiffness) by training a simple NN as has previous research done. This work is considered a novelwork because of its use of a testing method could be adopted by such transportation agency and the correlation of the expermental results obtained from the BBR with artificial intelligence.

2. The adopted materials and testing procedure

In this research, and corresponding to the Iraq specification (SCRB), two aggregate gradation were taking on to fabricate a Superpave gyratory compactor (SGC) specimens as revealed in Fig. 1, denoted as coarse mixtures and fine mixtures. The asphalt cement used was brought from Al-Dowrah refinery with penetra-

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Research Article

Evaluating Iraqi Modified Asphalt Concrete Moisture Resistance Based on Strength Ratio and Fracture Energy Parameters

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Two types of polymers (plastomer (functionalized polyethylene (PE)) and elastomer (styrene-butadiene-styrene (SBS))) were used for shifting up asphalt binder performance grade (PG) and tensile strength resistance (moisture damage) of the asphalt concrete mixture. It is found that adding 3.5% functionalized polyethylene (PE) polymer to the binder is more effective than adding 4% styrene-butadiene-styrene (SBS) to shift up asphalt PG by two grades to PG 76-16. Furthermore, the viscosity of the binder increased about 200% when using 4% SBS, while there is no significant effect on viscosity when 3.5% PE is used. Therefore, there is no need to increase the temperature of mixing and compaction which may affect polymers. The indirect tensile test was used for measuring tensile strength ratio of dry and wet samples (conditioned according to ASTM D4867) and found that this ratio increased by 10 to 18% when using 4% SBS and 3.5% PE, respectively. Fracture energy (area under the strength-strain curve) and elasticity were estimated for neat and modified mixture samples.

1. Introduction

Due to the increase in traffic volume and temperature, better performance of the asphalt pavement is required; therefore, less susceptible asphalt mixture to a high temperature to resist rutting, temperature cracking, and moisture damage should be produced. Asphalt properties can be improved by polymers in order to get the best performance of road pavements. Modification of asphalt is mainly dependent upon the polymer concentration, the chemical composition, the molecular weight, the raw source, the reference of asphalt grade, and the process of refining [1]. Polymers are usually mixed with asphalt to increase the stiffness and elasticity and decrease stripping or moisture sensitivity of the HMA, and sometimes for aging resistance. When polymers are used as a modifier to the asphalt binder, some properties should be considered, such as the compatibility with the binder, the feasibility of mixing and laying with the conventional methods and tools in the field, and the workability of the mixture during the mixing process [2]. In general, there are two types of polymers: elastomers such as styrene-butadiene-styrene (SBS) and plastomers such as functionalized polyethylene. The SBS elastomer modifier is mostly utilized as an asphalt binder modifier in the bitumen industries [3]. The addition of SBS to the asphalt binder would result in an improvement in the permanent deformation resistance of the asphalt binder (which is expressed by $G^*/\sin\delta$) due to the absorption of bitumen oil portion by the elastomer phase of the modifier [4, 5]. Asphalt mixtures suffer from different types of distresses. One of the major distresses is moisture damage, which is defined as the reduction in the mixture strength due to the effective existence of the moisture in voids. The moisture damage appears in two mechanisms when the load is applied: stripping (adhesion loss) and softening (cohesion loss) [6, 7].

2. Aims and Objectives

The aim of this paper is to improve the rheological properties of the Iraqi asphalt binder by modifying it with two types of polymers, plastomer and elastomer (SBS and PE), and increasing moisture resistance of modified local asphalt

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Development of a loading protocol for long links in eccentrically braced frames

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Seismic design

ABSTRACT

Loading protocols are generally used for qualification testing of structural members. In eccentrically braced frames (EBFs), the connections of short links attached to columns are evaluated based on the loading protocol given in the AISC Seismic Provisions for Structural Steel Buildings (AISC 341–16). Behavior of many short links without column attachments was also investigated by making use of this loading protocol. The AISC341 loading protocol is suitable for only short links and does not take into account the one-sided nature of link rotation angle (LRA) demands due to mean effects. Long link behavior differs from short link behavior in a sense that long links are subjected to strength and stiffness degradation due to local buckling effects. A nonsymmetrical loading protocol for long links was developed as a part of this study. Twenty-four long link EBF archetypes with variable floor plans, bay widths, number of stories and link length to bay width (e/L) ratios were designed according to the US standards. The responses of EBFs under maximum considered earthquake (MCE) and collapse level earthquake (CLE) were obtained by making use of numerical analysis employing degrading link models. The link rotation angle time histories were reduced and converted into a series of cycles and the peaks of the LRA response were identified by using the rainflow counting algorithm. The nonsymmetrical loading protocol was represented as a function of maximum rotation range, which depends on the seismic hazard and e/L ratio.

1. Introduction

A typical eccentrically braced frame (EBF), shown in Fig. 1, consists of columns, link beams, beam segments outside the link, and braces. Capacity design principles are adopted for all members except the link beams, which ensure that the links are the primary source of energy dissipation. The yielding behavior of a link can be altered by changing the link length (e). In general, the normalized link length ($\rho = e/(M_p/V_p)$) is considered to define the link behavior where, M_p and V_p are the plastic moment and plastic shear capacities of the link respectively. The limits for the normalized link length depend on the design specification being adopted. According to the AISC Seismic Provisions for Structural Steel Buildings (AISC 341–16) [1], short links ($\rho \leq 1.6$) predominantly yield in shear, long links ($\rho \geq 2.6$) predominantly yield in flexure and intermediate links ($1.6 < \rho < 2.6$) yield in combined shear and flexure. A typical deformation pattern of an EBF is shown in Fig. 1. The inelastic deformation of the link is represented using the inelastic link rotation angle (γ_p), which is defined as the plastic rotation angle between the link and the beam segment outside the link. The inelastic rotation capacity of a link depends on its normalized link length (ρ). According to AISC341, the inelastic rotation limits are defined as $\gamma_p = 0.08$ rad for short links and $\gamma_p = 0.02$ rad for long links. Linear interpolation between 0.08 rad and 0.02 is used for intermediate links. Although short links perform considerably better than long links when subjected to cyclic loadings, long links provide more freedom for architectural design [2]. Few experimental studies were conducted to investigate the behavior of long links and their connections to the columns [3–12].

Loading protocols are required to examine the response of structural systems or members under a seismic event. The fundamental responses of a structural component are strength and deformation capacities, ductility, energy dissipation capacity and failure modes. Under cyclic loads, these capacities depend on cumulative deformation and are functions of damaging cycles. The loading protocols should be developed for different structural systems separately with a wide range of earthquake data because of the highly uncertain natures of earthquakes and structural response. Fang et al. [13] highlighted the necessity of developing separate loading protocols for different structural systems and earthquakes with different fault distances (near-fault or far-field).

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TECHNICAL PAPER

Investigation of the Scale Effect on the Static and Seismic Response of an Opened Ended Pipe Pile

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Abstract
The effect of scale factor on the static and seismic response of an open-ended pipe pile is examined in this study with a focus on the pile plugging phenomenon using finite element analysis. The scenarios of open-ended pipe piles embedded in dry and saturated cohesionless soils were analyzed. The effects of different scaling factors (1 (small physical model), 10, 20, 35 (full-scale)) were considered. The results revealed that the maximum frictional resistance is observed at the tip of the soil plug and the maximum liquefaction ratio is observed around the pile shaft and near the soil surface. In addition, the liquefaction ratio is observed to increase with increasing ground motion intensity, with the maximum value occurring at the peak ground acceleration, followed by a significant pile settlement. Overall, the main outputs of the scaled models were normalized to illustrate the differences in the results and provide insight into the scaling effects. Importantly, scaling factors were proposed for open-ended pipe piles embedded in dry and cohesionless soils. These factors could be used to extrapolate the results of small-scale models or to scale down full-scale problems to enable their modeling in 1-g small-scale models.

Keywords Scaling factors · Plugging · Static-seismic loading · Arching · Liquefaction

Abbreviations

SPT	Standard penetration test
FEMs	Finite-element Methods
R	Strength correction factor
D_{inner}	Inside diameter of the pile
D_{outer}	External diameter of the pile
D_r	Relative density
λ	Scaling factor

Extended author information available on the last page of the article

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Seismic performance evaluation of eccentrically braced frames with long links using FEMA P695 methodology

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Eccentrically braced frame
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ABSTRACT

Short links that primarily yield under shear are usually preferred in eccentrically braced frames (EBFs) due to their high rotation and energy dissipation capacities. Long links that yield under flexure can be used in cases where large openings are required for architectural reasons. Research conducted in the past showed that the seismic response factors recommended in ASCE7 result in designs with higher collapse probabilities than expected for EBFs with shear links. Long link behavior differs from the behavior of short links because the former is governed by flexure and subjected to significant amounts of strength and stiffness degradation. A numerical study was undertaken to evaluate the seismic response factors for EBFs with long links using FEMA P695 methodology. Twenty-four EBF archetypes were designed by considering the bay width, number of stories, the link length to bay width (e/L) ratio and column base condition as the variables. Performances of these archetypes were evaluated under maximum considered earthquake (MCE), and collapse level earthquake (CLE). The effects of degradation were studied by considering degrading and non-degrading responses separately. The results showed that strength and stiffness degradation increases the link rotation angle as much as 46 percent when compared with the non-degrading models. The recommended response factors were found to provide acceptable performance for $e/L = 0.5$, when 20% probability of collapse is considered under MCE level events. Remedial measures were investigated to achieve acceptable performance for collapse probability of 10% under MCE level events.

1. Introduction

Steel eccentrically braced frames (EBFs) integrate the benefits of concentrically braced frames (CBFs) having high initial stiffness and moment resisting frames (MRFs) having high energy dissipation capacity. A typical EBF is composed of link beams, beam segments outside the link, braces and columns. The stiffness, strength, ductility and performance of an EBF system can be modified by modifying the length (e) of the link beam. EBF links are classified into three categories as: short, intermediate and long links in terms of the normalized link length $\rho = e/(M_p/V_p)$ where, M_p and V_p are the plastic moment and plastic shear capacities of the link respectively. According to the AISC Seismic Provisions for Structural Steel Buildings (AISC 341-16) [1], the plastic moment and shear capacities of I-shaped links are calculated as follows:.

$$M_p = ZF_y \tag{1}$$

$$V_p = 0.6F_y(d - 2t_f)\ t_w \tag{2}$$

where Z = plastic section modulus, d = depth of the section, t_f = flange thickness, t_w = web thickness, F_y = nominal yield strength. The limits that distinguish link behavior depend on the specification being used. According to AISC341, short links ($\rho \leq 1.6$) predominantly yield in shear whereas long links ($\rho \geq 2.6$) predominantly yield in flexure. Intermediate links ($1.6 < \rho < 2.6$) yield in shear and flexure.

Short shear yielding links are usually preferred due to their superior energy dissipation capacity [2]. Long flexural yielding links can be preferred in cases where large openings are required. Engelhardt and Popov [3] conducted the first experimental studies on long links in late 1980 s. However, there have been a few experimental investigations on long links since then. A group of researchers [4-9] has tested the seismic performance of long links in EBFs giving particular attention to link-to-column connections. Duscika and Lewis [10] investigated stiffening alternatives for short and long links with experimentally verified

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Quantification of energy dissipation demand for buckling-restrained braces

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BRB
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ABSTRACT

Buckling-Restrained Braces (BRBs) have been frequently used as stable energy dissipation devices for seismic applications. Currently, the performance of the BRBs is validated using displacement-based loading protocol, which does not account for the energy dissipated by the BRBs. In this paper, a novel procedure is proposed to quantify the energy demand for BRBs at different stories and sites. Hence, the BRB can be tested in the laboratory to ensure that sufficient energy can be dissipated. The proposed method uses the site-specific target spectrum to quantify the earthquake energy for the structures equipped with BRBs. In addition, new quantification factors, including the rise time for the energy dissipation and story-wise modification factor are proposed. The proposed quantification factors are obtained from a large array of time history analyses for a range of structures. The proposed method was verified on a 5-story prototype model equipped with BRBs. The results show that the proposed procedure can estimate the energy demand of BRBs with a reasonable accuracy, and can be used as a reliable method to predict and quantify the energy dissipation demand for BRBs.

1. Introduction

Buckling restrained brace (BRB) is a commonly used energy dissipation device, which was first proposed in 1988 by Wada and initially applied to two steel frame structures in Japan [1]. The performance of the BRBs was first tested on a 0.4 scaled model of a single-story, one-bay moment frame with pinned base and inverted-V BRBs. The result of the cyclic testing showed that BRBs can dissipate the earthquake energy efficiently and effectively [2,3]. BRBs started to gain popularity after the 1994 Northridge and the 1995 Kobe earthquakes [4]. The growing application of BRBs demanded more rigorous tests. In Japan, Iwata [5] proposed a strain-based testing protocol for BRBs. The strain-based loading protocol started with one cycle of loading with amplitude equal to 1/3 of yield strain, followed by another cycle of loading with an amplitude equal to 2/3rd of the yield strain. Subsequently, the loading protocol consists of incrementally increasing amplitudes, i.e., 0.25%, 0.50%, 0.75%, 1.00%, 1.50%, 2.00%–2.50% of the maximum strain obtained from the dynamic analysis. In general, each amplitude was repeated 2 times, except for the 0.25% amplitude was applied only in 1 cycle, while the 1.00% amplitude which was repeated 5 times. Finally, the amplitude was increased to 3% of the maximum strain and the testing was terminated when either a significant strength degradation was observed or the BRB fractured. Takeuchi [6–8] applied similar strain-based cyclic loading protocol to examine the local buckling and out-of-plane stability of BRBs. The loading sequences consists of multiple cycles of axial strain with amplitudes of 0.10%, 0.50%, 1.00% and 2.00%. Each amplitude was repeated 3 times. The axial strain was calculated using the axial displacement of the BRB divided by the length of restrained yielding segment of the BRB, as shown in Fig. 1. After a loading cycle was completed, the loading was repeated with 3% strain amplitude until either BRB fractured or instability in the BRB and connections was observed. The Building Center of Japan (BCJ) adopted loading protocol proposed by Takeuchi [8], with additional 3 cycles of yield strains added at the beginning of the loading protocol [1].

Qu et al. [9] developed BRBs with replaceable steel angle fuses. The proposed BRB was tested considering fuse design and material, debonding material, and loading protocol as variables. The test results show that the proposed BRB has a stable hysteresis response. It was demonstrated that the BRBs repaired by replacing the fuses performed in a satisfactory manner in the subsequent tests. Hu et al. [10] proposed a new lateral force-resisting, self-centering system called SCENARIO in which BRBs were provided based on a design procedure. The nonlinear response history analysis confirmed that the proposed system, when designed considering a response modification factor (R) of 6 or 8

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Seismic performance assessment of novel self-centering friction-based eccentrically braced frames

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ARTICLE INFO

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Residual drift
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ABSTRACT

Eccentrically braced frame (EBF) is a robust seismic force resisting system. EBF provides strong stiffness and clear energy dissipation to resist the earthquake shaking. However, after strong earthquake shaking EBF may be difficult or too expensive to repair. This could result in prolong down time and significant repair costs. In this paper, a novel energy dissipation device named self-centering conical friction damper (SCFD) is implemented within EBFs to dissipate the earthquake energy and to reduce the residual drift of EBF. The new system is named self-centering friction-based EBF (SCFB-EBF). The performance of the SCFB-EBF is compared with conventional EBF. Three prototype buildings with 3-, 6-, and 9-stories were designed using conventional EBF according to the AISC341-16/ASCE7-16 specifications and SCFB-EBF by replaced the links of the EBF with SCFD. The prototypes were subjected to a suit of 44 ground motions at both the design based earthquake (DBE) and maximum considered earthquake (MCE) shaking intensities according to the FEMAP695 procedure. Detailed nonlinear time history analyses were carried out using OpenSees. The results of the nonlinear time history show that SCFB-EBF has superior performance compared to the conventional EBF. In addition, the residual drifts of the SCFB-EBF were reduced significantly compared to the conventional EBF. Performance-based earthquake engineering (PBEE) assessment was also conducted to examine the performance of the prototype buildings. The results show that SCFB-EBF has lower repair cost at both DBE and MCE levels. Hence, the study shows that the SCFB-EBF can be used as an efficient alternative compared to seismic force resisting system.

1. Introduction

Conventional eccentrically braced frames (EBFs) are widely used as efficient lateral load resisting and energy dissipation systems. EBFs are designed to dissipate earthquake energy through the inelastic yielding of the link beams while all other members should be designed to remain elastic. Significant amount of research has been conducted during the past decades on the design, behavior, and performance assessment of EBFs. Kazemzadeh and Topkaya [1] conducted a comprehensive review on research works on EBFs. They identified the research needs necessary to improve the seismic design and response of conventional EBF systems. Yang et al. [2] developed the equivalent energy design procedure (EEDP) to design of EBFs. It was found that EBFs designed by EEDP show a better seismic performance and lower repair cost in comparison to traditionally designed counterparts. Research works have also been conducted on the design and seismic response evaluation of dual eccentrically braced frames [3–5] in which moment resisting frames were combined with traditional EBF systems to enhance the collapse safety margin of traditional systems, increase the lateral stiffness, and provide a secondary source of energy dissipation. Although the dual EBF systems show the beneficial effect of the moment resisting frames, the main deficiency of conventional EBF systems represented by large residual deformation after major earthquakes is still exist. Current seismic design codes such as AISC341-16 [6] and EC8 [7] focus on achieving a minimum life safety performance after strong earthquake shaking, where structure is designed to have sufficient strength and ductility without the need to consider the usability of the structure after strong earthquake shaking. Recent research [8–12] shown that the post-earthquake performance of steel buildings can be well characterized by the residual drifts. McCormick et al. [13] conducted a review for the permissible residual drift for structures after earthquake. Their study revealed that a 0.5% residual inter-story drift ratio is a suitable index to limit the loss of functionality after earthquake. It was also found that a residual drift greater than 0.5% can cause dizziness to the occupants. In

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Seismic performance of controlled-rocking concentrically braced frames designed by the equivalent energy procedure

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ABSTRACT

Recent earthquakes in New Zealand and Japan showed that structures designed according to modern building codes might suffer significant damages with hefty financial and social losses. The primary reason lies in the seismic design approach, where most seismic force resisting systems (SFRS) were designed to prevent structures from collapse during strong earthquake shaking, without considering the damage and the usability of the structure after an earthquake. In this paper, a controlled rocking-concentrically braced frame (CR-CBF) is proposed. CR-CBF is a fused structural system that uses a combination of post-tensioned tendons (PTs) and energy dissipation devices (EDs) to create a controlled-rocking mechanism to minimize structural repair costs and down time after a strong earthquake. PTs are placed in the structure to provide the restoring forces and to minimize any residual deformation in the structure, while EDs are placed at the base of a structure to dissipate the earthquake energy. To ensure the CR-CBF can achieve high performance, two (CR-CBF) prototypes with different heights are designed using the novel equivalent energy design procedure (EEDP). The EEDP procedure allows designers to select different performance objectives at different shaking intensities. The results of nonlinear dynamic analyses of the CR-CBFs show that CR-CBFs have superior seismic performances as intended and can be efficiently designed using EEDP. Finally, the seismic performance of CR-CBF against collapse is assessed using incremental dynamic analysis (IDA) outlined in the FEMA-P695 methodology. The results show that the CR-CBFs designed by EEDP have sufficient safety against collapse, hence it can be used as an efficient seismic force resisting system.

1. Introduction

Conventional seismic force resisting systems (SFRSs) rely on the use of ductile design philosophy, where structural components are designed to undergo large inelastic deformations to dissipate the sudden surge of the earthquake energy. This design philosophy has shown to be very effective in preventing structural collapse. However, the extensive inelastic deformation usually leads to significant damage to the structural and non-structural components. Many earthquake reconnaissance reports show that this design philosophy typically leads to hefty financial losses. In recent years, novel structural systems, which are targeted to achieve higher performance, have been developed. One of such series of high-performance structural system is the controlled rocking system. The concept of structural rocking was first studied by Housner [1], where he conducted one of the earliest investigation on the dynamic response of rocking block. To further validate the rocking mechanism for seismic application, Clough and Huckelbridge [2] performed experimental and numerical studies on a three-storey rocking steel moment resisting frame (MRF) prototype. Their study compared the seismic responses of rocking MRFs with fixed-base MRFs. They confirmed that rocking MRFs has less accelerations and internal forces. However, they concluded that rocking wall can experience higher displacement. In an attempt to control the peak displacement, Kelly and Tsztoo [3] improved the three-storey steel MRF prototype by adding mild steel bars which were capable of dissipate the seismic energy when the footing of the MRF uplifted. The shake table tests confirmed that the peak displacement of the rocking frame with the new energy-absorbing device was comparable to the fixed-base MRF, while the internal forces in the structure are reduced. To further improve the controlled rocking mechanism, Aslam et al. [4], Ricles et al. [5] and Roke et al. [6] investigated on the use of PT tendons to allow the structure to re-centre after earthquake. Hajjar et al. [7] studied a new controlled rocking steel frame with PT tendons and replaceable energy dissipation devices. Their study shows that controlled rocking steel frame with PT tendons and

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Scaling effects on the seismic response of a closed-end pipe pile embedded in dry and saturated coarse grain soils

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Foundations can be subjected to dynamic or seismic loads depending on their applications and the site being constructed in. The researchers concentrated their works on investigating the reasons of the significant damage of piles during seismic excitation. Based on the findings of laboratory experiments and other numerical analyses, such failures were referred to as the kinematic impact of the earthquake on piles since they were associated with discontinuities in the subsoil because of sudden changes in soil stiffness. The current work investigates the seismic response of closed-end (CE) pipe pile using three-dimensional finite element analysis, including the impact of the scaling-up model, acceleration-time history of the ground motion, and ground conditions. The numerical model is developed using a variety of scaling rules and the outputs of the available laboratory tests. The current results showed that the saturated sand models have larger pile deformation factors than dry sand models. Pile frictional resistance was evaluated numerically, and the entire findings were evaluated against the earlier work. Mainly, the frictional resistance around the pile shaft was lower than that at the pile tip, and the frictional resistance factor on the soil surface of dry soil models was larger than that of saturated soil models. Owing to the acceleration amplifications, the pile and soil suffered cycles of compression and tension stresses. A hysteresis loop is broader and flatter on

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Article

Data-Driven Prediction of Maximum Settlement in Pipe Piles under Seismic Loads

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Abstract: The structural stability of pipe pile foundations under seismic loading stands as a critical concern, demanding an accurate assessment of the maximum settlement. Traditionally, this task has been addressed through complex numerical modeling, accounting for the complicated interaction between soil and pile structures. Although significant progress has been made in machine learning, there remains a critical demand for data-driven models that can predict these parameters without depending on numerical simulations. This study aims to bridge the disparity between conventional analytical approaches and modern data-driven methodologies, with the objective of improving the precision and efficiency of settlement predictions. The results carry substantial implications for the marine engineering field, providing valuable perspectives to optimize the design and performance of pipe pile foundations in marine environments. This approach notably reduces the dependence on numerical simulations, enhancing the efficiency and accuracy of the prediction process. Thus, this study integrates Random Forest (RF) models to estimate the maximum pile settlement under seismic loading conditions, significantly supporting the reliability of the previously proposed methodology. The models presented in this research are established using seven key input variables, including the corrected SPT test blow count $(N_1)_{60}$, pile length (L), soil Young's modulus (E), soil relative density (Dr), friction angle (ϕ), soil unit weight (γ), and peak ground acceleration (PGA). The findings of this study confirm the high precision and generalizability of the developed data-driven RF approach for seismic settlement prediction compared to traditional simulation methods, establishing it as an efficient and viable alternative.

Keywords: pipe piles; settlement; data-driven prediction; random forest; seismic loads

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1. Introduction

The phenomenon of seismic-induced pile settlement is a significant concern in structural engineering and foundation design due to its potential impact on the stability and performance of buildings and infrastructure during and after seismic events [1]. Pile foundations are extensively employed in various infrastructure projects, such as ports, offshore bridges, and offshore wind power generation [2]. Among these, pipe piles have gained considerable interest due to their handling, simplification, and quality at low costs. In the extreme marine environment, a foundation not only faces the operational load transmitted by the structure but also the cyclic loading induced by waves and wind. Assessing the stability and deformation of the foundation under such cyclic loading is crucial, and employing the appropriate methods for this evaluation holds significant importance [3]. When subjected to seismic forces, the ground undergoes dynamic movements, which can result in the settlement of the piles [4]. This settlement, in turn, affects the stability of

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Review

Exploring Shear Wave Velocity—N_{SPT} Correlations for Geotechnical Site Characterization: A Review

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Abstract: Shear wave velocity (V_s) is a critical parameter in geophysical investigations, micro-zonation research, and site classification. In instances where conducting direct tests at specific locations is challenging due to equipment unavailability, limited space, or initial instrumentation costs, it becomes essential to estimate V_s directly, using empirical correlations for effective site characterization. The present review paper explores the correlations of V_s with the standard penetration test (SPT) for geotechnical site characterization. V_s, a critical parameter in geotechnical and seismic engineering, is integral to a wide range of projects, including foundation design and seismic hazard assessment. The current paper provides a detailed analysis of the key findings, implications for geotechnical engineering practice, and future research needs in this area. It emphasizes the importance of site-specific calibration, the impact of geological background, depth-dependent behavior, data quality control, and the integration of V_s data with other geophysical methods. The review underlines the continuous monitoring of V_s values due to potential changes over time. Addressing these insights and gaps in research contributes to the accuracy and safety of geotechnical projects, particularly in seismic-prone regions.

Keywords: shear wave velocity (V_s); standard penetration test (SPT); empirical correlations; geophysical investigation; seismic wave; geotechnical applications; challenges and uncertainties

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1. Introduction

The accurate characterization of geotechnical properties at a construction site is a fundamental prerequisite for ensuring the stability and safety of underground geotechnical engineering projects. Several factors influence how destructive an earthquake can be, including its depth, magnitude, fault type, distance from the seismic source to the site, groundwater level, and local site conditions. The type of soil beneath a structure affects the behavior of ground movements during an earthquake between the depth of the bedrock and the surface. This is known as the local site effect [1]. The key characteristics of intense ground shaking, such as amplitude, frequency content, and duration, are significantly impacted by local site conditions. The degree of their influence is closely tied to the material properties of the subsurface [2]. Since earthquakes are difficult to predict, conducting a site-specific seismic hazard analysis is a practical approach in earthquake engineering [3]. One of the most crucial parameters for assessing the earthquake risk at a site is the shear wave velocity (V_S) specific to that location. The V_S value for the upper 30 m of soil is employed to estimate various dynamic properties of the soil [4–6]. Site-specific V_S characteristics provides insights into how the site is expected to respond during seismic shaking. V_S reflects

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TECHNICAL PAPER

Developing Vs-NSPT Prediction Models Using Bayesian Framework

Duaa Al-Jeznawi[1] · **Laith Sadik**[2] · **Musab A. Q. Al-Janabi**[1] · **Saif Alzabeebee**[3] · **Jumanah Hajjat**[4] · **Suraparb Keawsawasvong**[5]

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Abstract

In earthquake engineering, shear wave velocity (Vs) is an effective parameter for quantifying the ground's effects due to shaking. The determination of Vs is usually done by costly and time-consuming geophysical testing; accordingly, previous research endeavors focused on developing empirical relationships between Vs. and other soil geotechnical properties like Standard Penetration Test (SPT) blow count (N_{SPT}), depth, and vertical effective stress. However, previous models might be biased for the data from regions of these models, and most of them do not account for uncertainty. Consequently, this research aims to develop a reliable Vs-N_{SPT} correlation relationship using the Bayesian hierarchical model approach. For that reason, a comprehensive dataset of 321 Vs-N_{SPT} data pairs was compiled from different locations to develop a region-specific correlation model; after that, the models were validated using a different dataset of 174 data pairs from the literature. It was concluded that the developed models are less biased toward outliers in the data across different regions, relatively more accurate, and explicitly quantify uncertainty in the developed relationships, providing a more reliable approach for Vs-N_{SPT} correlation.

Keywords Shear wave velocity · Standard penetration test · Region-specific correlation · Hierarchical Bayesian · Lumped model

1 Introduction

Shear wave velocity (Vs) is a soil parameter that is widely used for geological layer mapping, preliminary construction site identification studies, identifying soil dynamic characteristics, determining the potential for liquefaction, and identifying cavities, tunnels, and sinkholes (Seed et al. 1983; Leparoux et al. 2000; Thitimakorn and Channoo 2012). The determination of the Vs of soils is an essential component in geotechnical and seismic analyses as it is required for identifying rock mass and structure, porosity, and dynamic characteristics. Upom et al. (2019) stated

Extended author information available on the last page of the article

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TECHNICAL PAPER

Response of Pipe Piles Embedded in Sandy Soils Under Seismic Loads

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Accepted: 8 June 2023

Abstract

This paper studies the seismic response of open-ended (OE) pipe piles subjected to static and seismic loads using three-dimensional finite element analysis. The influence of the pipe material, soil saturation, slenderness ratio and earthquake shaking intensity were examined. The finite element model was validated against the findings of the available laboratory experiments. In addition, four different earthquake records (Kobe, El Centro, Halabja, and Ali Algharbi) were considered to simulate different shaking scenarios. In general, a scatter of the relationship between the peak ground acceleration (PGA) and the liquefaction ratio was observed. Furthermore, the results of the numerical study demonstrated that the bending moment of the pile is greater in saturated soil models when compared to the dry soil models for all of the scenarios used in this study. Ultimately, the current study showed that the frictional resistance of the pile increased during seismic excitation under dry soil condition regardless of the selected slenderness ratio, which is due the densification of the soil caused by the shaking. However, the frictional resistance is reduced due to seismic effects for the case of the saturated soil condition due to the decrease of the soil effective stress caused by the onset of liquefaction. Overall, the plug frictional resistance was much higher than the external pile frictional resistance. Thus, the piles in both conditions (dry and saturated) experienced plugged mode. In light of this, preliminary design charts were developed to estimate the liquefaction ratio, lateral displacement, bending moment, and frictional resistance of (OE) piles using only slenderness ratio and earthquake intensity.

Keywords Slenderness ratio · Acceleration history · Liquefaction · Frictional resistance · Bending moment · Open-ended pile

Extended author information available on the last page of the article

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Seismic performance assessment of single pipe piles using three-dimensional finite element modeling considering different parameters

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Abstract. The present study investigates the non-linear soil-pile interaction using three-dimensional (3D) non-linear finite element models. The numerical models were validated by using the results of extensive pile load and shaking table tests. The pile performance in liquefiable and non-liquefiable soil has been studied by analyzing the liquefaction ratio, pile lateral displacement (LD), pile bending moment (BM), and frictional resistance (FR) results. The pile models have been developed for the different ground conditions. The study reveals that the results obtained during the pile load test and shaking cycles have good agreement with the predicted pile and soil response. The soil density, peak ground acceleration (PGA), slenderness ratio (L/D), and soil condition (i.e., dry and saturated) are considered during modeling. Four ground motions are used for the non-linear time history analyses. Consequently, design charts are proposed depended on the analysis results to be used for design practice. Eleven models have been used to validate the capability of these charts to capture the soil-pile response under different seismic intensities. The results of the present study demonstrate that L/D ratio slightly affects the lateral displacement when compared with other parameters. Also, it has been observed that the increasing in PGA and decreasing L/D decreases the excess pore water pressure ratio; i.e., increasing PGA from 0.1 g to 0.82 g of loose sand model, decrease the liquefaction ratio by about 50%, and increasing L/D from 15 to 75 of the similar models (under Kobe earthquake), increase this ratio by about 30%. This study reveals that the lateral displacement increases nonlinearly under both dry and saturated conditions as the PGA increases. Similarly, it is observed that the BM increases under both dry and saturated states as the L/D ratio increases. Regarding the acceleration histories, the pile BM was reduced by reducing the acceleration intensity. Hence, the pile BM decreased to about 31% when the applied ground motion switched from Kobe (PGA=0.82 g) to Ali Algharbi (PGA=0.10 g). This study reveals that the soil conditions affect the relationship pattern between the FR and the PGA. Also, this research could be helpful in understanding the threat of earthquakes in different ground characteristics.

Keywords: finite element models; peak ground acceleration; seismic response; slenderness ratio; soil-pile interaction; soil characteristics

1. Introduction

The foundation is the sub-structural part of any structure, constructed to transfer a superstructure load to the strata/soil. Based on the functional requirements, the foundations are two types, i.e., shallow and deep. The shallow foundations are usually established to transfer the structural load to hard/rocky strata within a small depth. Conversely, the deep foundations are commonly constructed on soft soil or strata with poor bearing capacity. The pile and drilled pier foundations are the types of deep foundations. Both foundations are designed as per the functional and structural requirements. Because of these requirements, several researchers have designed piles with different specifications for different ground conditions (Zhang *et al.* 2020, Khan *et al.* 2021). Ghiasi and Eskandari (2023) have used a variety of analytical, numerical (finite element and finite difference) and field methods to calculate the bearing capacity of piles considering different pile lengths and diameters. The authors could identify the proper behavioral models for soil and piles and the findings that they produced were well matched. It has been stated that it is reasonable and appropriate to a considerable extent that numerical models may minimize costly loading tests on piles. Pipe piles are regularly used because it is widely available, less expensive, and can be installed safely. Also, the pipe piles are excellent sub-structural elements to transfer/ bear the load, and it does not require any additional elements for the support, which decreases the project cost. Al-Jeznawi *et al.* (2023) designed and analyzed the closed-

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ASCE

Simplified Design of Coupled Shear Wall Systems for Typical Building Configuration

Dhiaa Al-Tarafany[1]

Abstract: For many years, coupled shear wall systems have been used as an effective way of controlling lateral stability for high rise buildings. Shear walls have a large lateral stiffness compared to frame systems, and hence, they are often used where control of lateral displacement is imperative. General design objectives for coupled shear walls were summarized from the available literature. Four different configurations of coupling beams with aspect ratios of 2–4 were evaluated using SAP2000 software to obtain an approximate empirical relationship to estimate the degree of coupling of a coupled wall system for a typical four-story hotel-type structure. The proposed equation provides an accurate estimation of the degree of coupling. Using this empirical relationship, a simple procedure to incorporate coupling action into the instantaneous design of shear walls was outlined. **DOI:** 10.1061/(ASCE)SC.1943-5576.0000700.

Author keywords: Diagonally reinforced coupling beam; Seismic behavior; Shear strength; Aspect ratio; Degree of coupling.

Introduction

A coupled shear wall can greatly improve the performance of individual shear walls. Designers have several options to provide coupling between shear walls. Proper design of coupled shear walls is not a simple task and if misused, coupled shear walls can compromise the overall integrity of the structure (deterioration of main wall core and/or foundation uplift).

In the United States and many other locations in the world, common hotel-type structures are built on a regular basis. These buildings are usually 4–6 stories high and have shear walls as a lateral load resisting system. It is not uncommon for these shear walls to be connected by coupling beams spanning across hallways or over elevator entries. The main objective of this research is to provide the reader with a simple design (and design procedure) to be used when incorporating coupling beams into the lateral load resisting system.

Types of Coupling Beams

Conventionally Reinforced Coupling Beams

In conventionally reinforced coupling beams (CCBs), [Fig. 1(a)], flexural reinforcement is placed longitudinally, parallel to the axis of the beam as in conventional beams. This type of reinforcement is mostly used for long, slender beams ($l_n/h > 4$). For long, slender beams, typical beam detailing can be used to satisfy design objectives. For shorter, deeper beams, the assumptions of beam theory are not applicable; longitudinal reinforcement is in tension throughout the length of the beam, and forces are resisted through the action of a diagonal compression strut and two (top and bottom) ties. This force resisting mechanism prevails regardless of the reinforcement configuration used.

Diagonally Reinforced Coupling Beams

Diagonally reinforced coupling beams (DCBs) [Fig. 1(b)] have been shown to be somehow stiffer and stronger than CCBs (Paulay and Santhakumar 1976). It can be said that the efficiency of this reinforcement configuration depends mostly on the angle of inclination of the diagonal reinforcement with respect to the axis of the beam. Smaller angles require greater amounts of reinforcement to resist the same load. Design provisions for DCBs were incorporated into the 1999 version of ACI 318 (ACI 1999).

Rhombic Reinforced Coupling Beams

Rhombic reinforced coupling beams (RCBs) [Fig. 1(c)] are also known as truss reinforced coupling beams. This reinforcement configuration is relatively new but has already been used in tall structures such as the Satrio Tower in Indonesia (Tanuwidjaja 2007). Research (Tegos and Penelis 1988; Galano and Vignoli 2000; Harries and McNeice 2006; Park and Paulay 1975; Afefy 2020) has shown that RCBs exhibit superior behavior over both CCBs and DCBs. Additionally, RCBs are far easier to construct than DCBs as they require no confinement reinforcement (Galano and Vignoli 2000). Unfortunately, there is not enough available research to incorporate the design of RCBs completely in this study.

Others

Coupling beams are also built using wide flange steel sections as beams or smaller steel sections as diagonal elements later embedded in concrete. These hybrid coupling beams are outside the scope of this research.

Degree of Coupling

When a structure is subjected to lateral loads (wind or the equivalent effect of seismic events), an overturning moment (M_o) is produced. This overturning moment in coupled shear walls is resisted by a combination of moments at the base of the walls (M_1 and M_2) and the moment caused by a pair of forces (T) acting across a distance (l) between the centroid of both walls as illustrated in Fig. 2. This can be expressed as

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CRITICAL STRAIN DEMANDS FOR PERFORMANCE EVALUATION OF HIGH-STRENGTH REINFORCING BARS

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ABSTRACT

High-strength reinforcing bars (HSRB) with varying mechanical properties and performance under low-cycle fatigue are being introduced to the U.S. market driven by constructability and economic incentives. Correlations between seismic collapse risk and bar properties are crucial for code bodies to set acceptable properties of HSRB, especially uniform or fracture elongations as well as low-cycle fatigue performance. In order to objectively and reliably evaluate the seismic collapse risk of concrete buildings incorporating HSRB, it is necessary to quantify the effects of the varying mechanical properties of HSRB on the deformation capacity of seismically detailed concrete members. To achieve this goal, a mechanics-based model was developed and calibrated to experimental data to correlate member global deformations with strain demands that govern the fatigue and fracture behavior of longitudinal bars in concrete members. The calibration was based on data gathered from tests on concrete frame members reinforced with grade 60, 80 and 100 steel. The HSRB used in these members were sourced from different manufacturers covering the most common mechanical properties that are either available and under development in the United States. The work presented is part of a larger study that includes quantifying the low-cycle fatigue capacity of steel bars of various grades and origins, correlating member deformation capacities to bar properties, evaluating shifts in the seismic collapse risk of concrete buildings due to changes in bar grades and properties, and recommending specifications for HSRB to achieve acceptable seismic performance.

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Design Methodology of Diagonally Reinforced Concrete Coupling Beams

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***Abstract*—The main lateral force resisting system of buildings is shear walls. Reinforced concrete coupling beams usually connect these shear walls. This research summarizes the design procedures of reinforced concrete coupling beams. Although there are many aspects to the analysis of a coupled wall system, this paper focuses on the ACI 318 design of the reinforced concrete coupling beam as an individual member and uses several simplifying assumptions to illustrate an efficient proposed process for the design. The assumption of the proposed procedure relates the shear force with the plastic moment capacity of the coupling beam. A typical building dimension is considered, and a coupling beam with an aspect ratio of 1.6 is designed as a diagonally reinforced coupling beam (DRCB) in accordance with ACI 318. The results show that the DRCB can be simply designed based on the moment capacity of the coupling beam instead of the current iterative procedure of the ASCE/ASI 7-22, in which horizontal forces are elastically distributed that are related to the stiffness of the structural members. The proposed procedure was evaluated using ETABS software and presented close results.**

Keywords*—*design procedure, diagonally reinforced coupling beam, seismic behavior, shear strength, aspect ratio

I. INTRODUCTION

Coupled wall systems provide a myriad of improvements over uncoupled walls. In the elastic range, coupled walls are significantly more rigid than uncoupled systems, but the most notable improvement in behavior occurs once plastic hinges have formed at the ends of the coupling beams' inconsistent displacements shown in Fig. 1. This is because the primary objective of a coupled wall system is to dissipate energy through the formation of plastic hinges at the ends of the coupling beams. This prevents the yielding of the wall's longitudinal reinforcement and therefore prevents sliding shear failures.

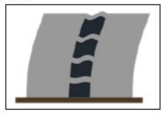

Fig. 1. Deformation of a coupled shear wall system

The deformations of the walls cause opposing shear forces along the length of the coupling beam (shown in Fig. 2). These shear forces cause a reduction in the axial load in the 'windward' wall and an increase in axial load in the 'leeward' wall. This effect can be seen in the free body diagram also shown in Fig. 2 [1], [2].

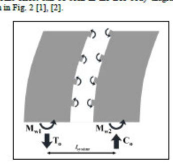

Fig. 2. Coupling action of the shear wall system.

The axial force developed as a result of the shear in the coupling beams causes the coupled wall system to resist lateral load as a composite section in addition to the resistance of the individual walls in the typical flexural manner (shown in Fig. 2) [3]. The coupled system's total static moment is thus shown in (1) [4].

$$M_o = M_{w1} + M_{w2} + T_o * l_{system} \quad (1)$$

It should be noted that the reduction in axial load of the 'windward' wall should be accounted for in sliding shear and web shear calculations.

II. COUPLING BEAM REINFORCEMENT LAYOUT

The reinforcement layout of coupling beams departs dramatically from typical beam design procedures. This is because of the large shear forces which must be carried during seismic events.

In coupling beams with the traditional combination of longitudinal and transverse reinforcement, the shear stresses will soon exceed that which can be provided by the transverse reinforcement. This fact is illustrated in Fig. 3, which shows a diagonal crack forms after several load reversals. This effectively splits the coupling beam into two triangular sections which then must be bridged by the transverse reinforcement. Eventually, either one of two failure methods will occur. Either the transverse reinforcement will fail as the shear load increases (this is the case shown in Fig. 3), or the beam will fail due to through-depth flexural cracking as a result of load reversals.

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Evaluation of Cast-in-Place Splice Regions of Spliced I-Girder Bridges

by C. S. Williams, A. M. Moore, D. Al-Tarafany, J. B. Massey, O. Bayrak, J. O. Jirsa, and W. M. Ghannoum

Modern spliced girder bridges consist of precast, pretensioned concrete girders joined together at cast-in-place (CIP) splice regions and made continuous through post-tensioning. Despite the growing use of spliced girders, relatively little research has focused on the behavior of the discontinuity created at the splice regions. An experimental program was conducted to study the strength and behavior of the CIP splice regions of spliced I-girders. The program focused on the shear behavior and shear failure mechanism of spliced girders containing post-tensioned CIP splice regions located within the span lengths of the girders. Two tests were conducted on large-scale spliced girder specimens. Large flexural demands permitted the flexural behaviors of the specimens to be evaluated as well. The test results revealed that the shear behavior of the spliced girder specimens was comparable to that of monolithically cast post-tensioned I-girders.

Keywords: closure pour; post-tensioned; prestressed; shear; splice region; spliced girder.

INTRODUCTION

Spliced girder technology has emerged in recent years as an economically efficient option for moderate-span bridges due to its versatility and relatively low cost. Spliced girder bridges are composed of multiple precast, pretensioned concrete girder segments joined together through post-tensioning and therefore combine concepts from both conventional segmental bridge construction and typical precast prestressed girder bridges. Precast girder segments of a spliced girder bridge can reach lengths of 160 ft (48.8 m).[1,2] The main span length of a spliced girder bridge can exceed 300 ft (91.4 m) with multi-span continuous construction[3] (Fig. 1(a)) and over 200 ft (61.0 m) for simply supported members[1,3] (Fig. 1(b)). Spliced girder technology is therefore able to overcome limitations that are inherent to precast prestressed concrete girders, which are typically limited to spans of 160 ft (48.8 m) or less due to transportation and/or other restrictions.[3] The precast girder segments of today's spliced girder bridges are generally joined at cast-in-place (CIP) splice regions (refer to Fig. 1(c)). After the segments are placed and the splice regions are cast, each girder line is post-tensioned to provide continuity. Spliced girder bridges can be configured to each unique design scenario by varying the lengths of the precast segments and by adapting the falsework plan and construction sequence to the needs of the project. This versatility has attracted the attention of many state departments of transportation (DOTs) that have implemented spliced girder technology.

Despite the increased interest in the construction of spliced girder bridges,[3-5] limited research has focused on the design and behavior of modern spliced girders in spite of the complexities inherent to this type of construction, especially at CIP splice regions. Unlike the precast, pretensioned segments fabricated under controlled plant conditions, casting the splice regions in the field often presents logistical challenges, and the splice regions, in general, are relatively congested. Moreover, the splice regions present a complex behavior due to the interaction between concrete cast at different times and the discontinuity in the pretensioning force present in the precast segments (refer to Fig. 1(c)). The results of an industry survey distributed to state DOTs[6,7] provided information regarding the details that have been used at CIP splice regions. Experimental validation of the behavior of CIP splice regions with realistic details is viewed to be a research need.

The effect of the presence of post-tensioning ducts on the shear performance of monolithically cast prestressed I-girders was discussed in Moore et al.[8,9] As a continuation to that study, a research program was conducted to evaluate the strength and behavior of CIP splice regions located within the span lengths of spliced girders and designed to include structural details based on practices that have been successfully implemented in existing field structures. To this end, two load tests were conducted on large-scale spliced I-girder specimens containing CIP splice regions. With no previous tests in the literature examining the sectional shear failure mechanism of post-tensioned CIP splice regions located within the span lengths of spliced girders, primary focus was placed on the shear performance of the specimens. The specimens and loading configuration were therefore designed to create a shear-critical test region, and the girders exhibited sectional shear failures. The test setup also resulted in significant flexural demands at the splice region, allowing flexural behavior to be evaluated during the tests as well. The primary variable between the two specimens was the area of the longitudinal reinforcement extending from the precast segments into the splice region. Additional details of the CIP splice region research program, including a summary of the results from the industry survey, are provided in Williams et al.[6]

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Prestressed bridge deck responses to blast loads

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Abstract. Bridges are critical to most transportation systems, especially in times of crisis; however, as highly visible and accessible structures, they are also potential targets for terrorist attacks. An understanding of the performance of bridges subjected to blast loads is of critical importance to prevent progressive collapse of such structures that could lead to a catastrophic loss of life. The current research focuses on investigating the behaviour of bridge decks under blast loads from various explosions. The bridge in this investigation is the Sheikh Saad Bridge in Wassit Province, Iraq, whose deck is made of simply supported spans with two types of prestressed concrete girders. Both spans were accurately modelled using the finite element software Abaqus/Explicit, and both concrete and steel mechanical material properties were modified to match the properties under high strain rate conditions of the blast analysis. The latest element deletion technique of the built-in Concrete Damaged Plasticity (CDP) model (available since Abaqus 2019) was used to provide a realistic simulation of concrete damage and spalling. The model was separately subjected to various explosive charges placed at different locations above or below the bridge deck in order to determine the influence of size and location of blast on the bridge superstructure, detailed results and the relevant conclusions are thus presented. Overall, the modelling managed to successfully simulate the blast load response and the cracking propagation within the damaged deck components.

1. Introduction

It has become evident in recent years that many bridge structures are possible targets for terrorist attacks due to their easy accessibility and the likelihood of their destruction causing the most undesirable impacts on human lives and the economy. This makes it important for researchers and structural engineers to develop a better understanding of bridges' performance when they are exposed to highly intensive blast loads.

A great deal of research has been conducted on blast effects on buildings. However, in many instances, it is not feasible to implement the resulting procedures directly into bridge design. A major issue in the case of bridges subjected to blast loads is that charges can easily be placed near or in contact with structural elements, a procedure that causes local damage that is very different from the global damage caused by the blast when the charge is placed at a considerable distance from the structure.

One of the earliest pieces of research in this field was [1], which evaluated a dynamic damage model to assess the capacity of the reinforced concrete elements of an arch bridge subjected to near field detonation charges. They used Abaqus software to simulate the Tenza Viaduct bridge, south of Naples, Italy. They used the results to make graphs relating the residual capacity and average damage for the most damaged cross section for decks, arches and piers, as a function of the charge amount.

A state of the art review of fiberless and steel fiber reinforced high strength concrete columns behavior under various loadings

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Abstract. Efficient supplementary materials flourish the structural performance and sustainability of reinforced concrete structures. Steel fiber is one of these materials that have significant influence on enhancing tensile and flexural strengths and ductility of high strength reinforced concrete columns. This paper presents a review study on the structural performance of steel fiber reinforced concrete columns. The studied case was related to the columns that subjected to concentric or eccentric compression loads or combined compression loads and cyclic lateral loads. The current survey is divided into two branches; the first is related to fibreless HSC columns, while the other is specialized by SFRHSC ones. In addition to the prime actuator (steel fiber content), the investigated parameters were included concrete strength, transverse reinforcement properties, and axial load ratio. The results of this investigation showed that the positive influence of adding steel fiber on improving the flexural strength, fatigue life and resistance, delaying spalling failure of the exterior concrete shell and outward buckling of the longitudinal steel reinforcing bars. The optimum volume fraction of steel fiber used is 0.5% to 2% (by weight) and when 2% of steel fibers are introduced into the concrete mix, the columns' cover didn't spall away.

Keywords: Steel-fiber reinforced concrete, fibreless concrete columns, high strength concrete columns, columns' transvers reinforcement, moment resisting columns, cyclic loading on columns, concrete columns ductility, concrete compressive strength.

1. Introduction

Till nowadays normal strength concrete is frequently used in columns of low-rise buildings. Nevertheless, high strength concrete has proved to be indispensable for high rise buildings. Besides, the high strength concrete has become the optimum choice for columns in bridges and the piled deep foundation [1].

In general, high strength concrete surpasses its conventional predecessor; the normal strength concrete, in terms of the principal strength respect after hardening (i.e., compression, tension, shear, splitting and rupture), in addition to the elasticity modules. The main purpose behind using high

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Analysis techniques for folded plate roofs and cellular bridges general review and comparisons

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Abstract. Folded plates have attracted profound interest in recent years because of their economic advantages and architectural appearance. In particular, their basic structural response is indeed logical enough, explicit and simple although its required numerical computation procedure is, in a little bit, boring. This type of structures have gained increasing popularity and offers more advantages than more complex structures, such as cylindrical shells, arches and right folded plate frames. Similarly, the thin-walled cellular bridge decks can be treated as a multi-folded plates structure. This study produces an overall review of the historical development of the most popular methods utilized for analysis the folded plate structures which are offered with their applications and how these methods are developed gradually. Four common methods are chosen in this paper to show their highlights of references particularizing in analysis of the above mentioned types of structure; the folded plate elasticity method (FPEM), finite element method (FEM), finite strip method (FSM) and spline finite strip method (SFSM). This investigation covers the elastic behavior, and the experimental researches on the elastic reaction of folded plate structures.

1. Introduction

Folded plates, as a structural shape, first appeared fortuitously in central Europe in about 1929 and the first design method of the folded plate was published in 1930 by G. Ehlers and H. Craemer [1]. Then it was brought to the United States of America immediately after the second world war where it quickly became commonplace and was admitted as a new style of construction due to its capability of erection, confirmed implementation and its structural clearness in both analysis and design. Due to the increase in the use of computer programs in recent years and the great development of those programs and their diversity, which performs structural analysis of various types of buildings and engineering structures, It has become necessary for the engineer to choose the appropriate program for the structure to be analyzed so as to ensure accurate results in a less time and cost in addition to facilitating the input data and the identification of outgoing data so clearly that the designer can sense that data and know to what extent it is logical and true to reality.

2. Definition of Folded Plate Structures

Folded plates are flat plate assemblies connected together rigidly over their edges in a manner that the structural system is able of holding loads without the need for extra supporting beams along ridge edges. Some of them have constant thicknesses and the other ones have variable thicknesses according to the nature of the structure and the applied loads as shown in figure1. The application of folded

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Behavior of Masonry Buildings Under Various Monotonic and Periodic Loadings; State-of-the-Art

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1- Introduction

The development of appropriate assessment, analysis, and retrofit methodologies for masonry buildings in seismic zones has sparked considerable attention due to its vulnerability to collapse during the earthquake. Unreinforced masonry structures represent a considerable percentage of existing structures all around the world, and in order to avoid life safety hazards and property damage, these structures must be assessed and strengthened by structural engineers.

The fracture of mortar joints, as well as the cracking and crushing of masonry units, play a substantial role in the failure of unreinforced masonry buildings subjected to lateral loads by **Kelly 2010**.

Many of these constructions are constructed in seismically active locations. However, in order to design, repair, and retrofit these structures. Which has been an engineering concern for many decades. It is necessary to be able to assess their lateral load-carrying capability and ductility by **Lotfi and Benson ASCE**. The large number and variety of these buildings as well as the nature of masonry and the way in which its assembly was done makes it even harder for researchers to deal with it.

The paper is divided into seven sections according to the collected studies and their objectives.

2- Studying the horizontal bending of unreinforced clay brick masonry:

2.1- C.R. Willis, M.C. Griffith and S.J. Lawrence (2004), studied the behavior of unreinforced brick masonry (URM) sections when subjected to horizontal bending. They developed a mathematical model to predict the first crack as well as ultimate and post-ultimate strengths. Firstly, they establish their models' accuracies by comparing them to the data from the conducted experiments. Their resulting expressions represented a major improvement over the current expressions for being dimensionally correct as well as explicitly accounting for unit strength, mortar and the contribution of shear strength from compressive stress and friction to bed joint. Additionally, they found that the perception gained into the overall behavior of the bed joints when undergo torsion also the flexural mechanisms of perpend joints as well as brick units may as well be used in the analysis of the walls that subjected to two-way bending, in which the same mechanisms, combined with perpend joint torsion and bed joint flexure, contribute to the overall behavior of the wall. With reference to fig. 2-2 they explained that in pure horizontal flexural actions, where the walls undergo a horizontal bending, two main failure scenarios are possible, that depends on the relative strengths of the constituents of the masonry assemblage.

Which is referred to as stepped and line failures as shown in fig.2-1. For those walls where the strength of the mortar bond is relatively stronger than the brick unit strength, vertical crack through the brick units and perpend joints will tend to occur which is referred to as line failure, as compared to stepped failure in which the propagation of a crack starts at perpend joint and then along half a bed joint.

in practice, and because of the material variability (brick units, mortar, and their bond) the mode of failure will be combination where all three mechanisms involved.

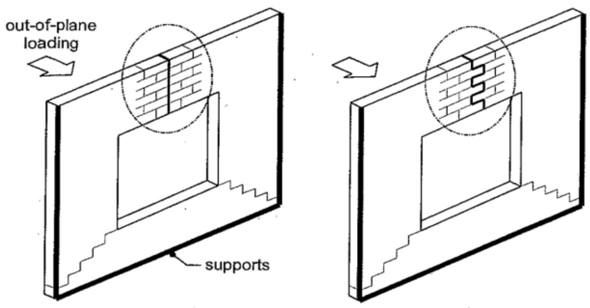

Figure 2-1: Crack patterns (a) Line crack (b) stepped crack [Willis et al., 2004]

Comparative Performances of Modified Push-out Segments with Through-Depth Two-End Welded and Thread-Tightened Stud Shear Connectors

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Abstract. The prime objective of this research is to investigate and evaluate the profound enhancement in performance of modified push-out segments, simulating the steel-concrete-steel sandwich construction, when the two ends each through depth stud are welded as a replacement of threaded-tightened technique. Three push-out segments each comprising a concrete slab sandwiched between two steel tubes and interconnected by stud along the whole thickness of the concrete slab and welded to both steel tubes, were examined to be more compatible than the standard test in representing the double-skin beams. The segments were tested under the effects of changing the shear connectors cross-sectional areas, and the ultimate shear resistance, associated slip, shear stiffness, and the energy absorbability were determined. Afterward, a comparison in the upto failure performance and values of the three specified mechanical properties is made, from which the privilege of the welding technique of the two stud ends, over the competitive threaded-tightened technique has been verified.

INTRODUCTION

General Statement and Review

Double skin composite (DSC) construction or Steel-concrete-steel sandwich (SCSS) construction is a quite new and innovative system of construction, consisting of plain concrete layer sandwiched between two steel plates and interconnected by divers types of shear connectors. The system is used in submerged tube tunnels, nuclear structures, bridge decks, gas and liquid containment structures, offshore and onshore structures, shear walls in buildings, and military shelters. The actual benefits of this system are that the two external steel plates act both as permanent formwork and as primary reinforcement, in addition to being impermeable, blast and impact resistant membranes. The full depth stud connectors transfer normal and shearing forces between the concrete and steel plates and act as transverse shear reinforcement. The major phenomenon of partial interaction between the steel and concrete interfaces is the “relative slip” characterized by the shear load versus slip relationship.

In this study, the behavior of the through-depth two-end welded studs connector will be studied taking into consideration the effects of varying the shear connectors cross sectional area. Afterward, a comparison will be made between the behavior of the trough-depth two-end welded stud shear connectors (adopted in this study) and the through-depth threaded studs shear connectors connected to the steel by nuts (conducted by Al-Sa’ady [7],[8]) in modified push-out test (POT).

The early improvements on SCSS constructions were begun in 1999 by Bowerman et al. [1] who perceived that the buildability of the system would be mutated if the connectors are welded to the both steel plate (Bi-steel plate). Eventually, they published design recommendations. Clubley and Xiao [2] in 1999 also, discussed the shear strength and deformation capacity of the Bi-Steel unit subjected to push out loading. They conducted a numerical modelling of the Bi-steel panels, proposed a preliminary design formula for Bi-steel plate shear strength, and concluded that Bi-

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Effects of Internal Embedded Composite Steel Frame on Reinforced Concrete Walls Behavior Seismically Excited out-of-Plane, Experimental Study

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Abstract— In the modern era, especially after middle of 19th century, the utility of concrete walls became widespread as a type of structural engineering applications. Various wall types and many construction methods involve building construction. Generally, structural walls can be classified according to load sources and directions. Building behavior can be improved with many engineering advantages that achieved using reinforced concrete walls as structural elements. Reinforced concrete walls increase the building stiffness, strength, ductility, seismic energy dissipation, plastic collapse resistance, and minimize seismic risk by changing the building failure mode. The current investigation deals, experimentally, with the nonlinear dynamic response of reinforced concrete walls including opening effects and role of internal embedded steel frame.

Eight flanged-section framing wall prototypes was experimentally subjected to seismic excitations to prepare a comparative study of composite embedded steel frame influence and opening effects. Experimental results showed that using internal embedded steel frame significantly improved the performance of reinforced concrete walls, for example the displacements of composite walls decreased by an average of 15.85% as compared with non-composite reinforced concrete walls, the velocities decreased by an average of 32.87%, the acceleration dropped by an average of 56.09%, and the concrete strain dwindled by an average of 50.88%. Also, the study introduced the effects of wall openings by percent increasing of the displacement of 52.44% if the wall contains an opening in the first story, while the percent increase of 60.92% if the wall contains an opening in the second story, and the percent increase will be 62.63% if the wall contains an opening in the first and the second story.

Key words— Embedded steel frame, seismic excitation, reinforced concrete walls, out-of-plane excitation, opening effects.

1 Introduction

Every year, building structures around the world are frequently hit by earthquakes causing several damages which may be loaded to collapse. The dynamic load can be defined as a load that its value varies with time. Therefore, the loads, displacements, and many other parameters can be represented mathematically as functions with time. The study of structural responses resulting from these dynamic forces is called structure dynamics. When the loads are applied in a very slow manner, the forces are considered static and independent on time. The loads are considered cyclic when applied with high frequency, whereas they are considered repeated loads when applied with low frequency.

The earthquake releases an energy which is generated by a sudden and random movement of earth segments (plate tectonics). The energy is released because of ground vibration whose amplitude is reduced with rupture distance. In addition, the earth vibration generates large random inertia forces that should be carried by the structural components safely.

Generally, the collapsed seismic force level depends on the nature of the region where the construction is to be built.

Structure geographic location plays a major role in seismic analysis and design of structures since the global seismicity is influenced by the earthquake hypocenter and plate tectonics nature.

An earthquake occurs if earth tectonic plate shifts and the mass of earth materials move with plates undergo interface stresses. The aim of the seismic design is to ensure that the structural elements are adequate to resist the released dynamic forces and to keep the structure to certain damage near the collapse. Depending on such failure criteria, the structure seismic designer can keep the people who occupy the damaged structure in a safe state. The engineering solution to reduce the lateral vibration is by providing viscous dampers installed under the structural elements. Such devices absorb ground vibrations and minimize the earthquake-released energy. Another active way to absorb earthquake energy is to attach tuned mass dampers which disperse the released energy direction away from the structure energy, and the effects of damper mass motion will render structure risk motion a vanity.

The composite walls can be constructed using several methods which can be listed as follows:

1- Composite walls with fully embedded steel sections.
2- Composite walls with partially embedded steel sections.
3- Composite walls with internal encased bracings.
4- Composite walls using external steel plates.
5- Composite walls using FRP sheets.

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Monotonic and Fatigue Performance of Double-skin Push-out and Tensile Segments of Divers Shear Connectors – Review

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Abstract

Double skin composite (DSC) construction or Steel/concrete/steel sandwich construction (SCSS) is an innovative and relatively new form of composite construction that can be used in submerged tube tunnels, bridges deck, nuclear structures, liquid and gas containment structures, offshore and onshore structures, military shelters, and shear walls in buildings. The system consists of a plain concrete core sandwiched between two steel plates interconnected together by various types of mechanical shear connectors. The DSC construction perceives advantages that the external steel plates act as both formwork and primary reinforcement, and also as impermeable, blast and impact resistant membranes. The major duty of the shear connectors is to withstand longitudinal shear force and beam/slab separation, while in the bi-steel type where shear connectors are friction welded at both their two ends to two parallel steel plates, the longitudinal and transverse shear force, as well as plate buckling are resisted. The present paper highlights the previous prime researches concerning the subjects of SCSS composite construction, specifically on the conducted tests (push-out tests, tensile, direct shear tests, and bending tests) in which the components of partial interaction (uplift and slip forces) are resisted by various types of shear connectors.

Keywords: Steel-Concrete-Steel, Push-out Test, Double Shear Connectors, Bi-Steel Plate

ألأداء الراتب وأداء الكَلال لِقطَع الدفع الخارجي وقِطعَ الشد ثنائية القشرة بأنواع متباينة من روابط القص – ورقة عرض

زينب حسام الزهاوي ، ليث خالد الحديثي

الخلاصة:

تعتبر المشيّدات المركّبة ثنائية القشرة DSC أو المشيّدات السندويجيّة فولاذ - خرسانة - فولاذ SCSS أحد الأنواع المبتكرة والتشكيلات المعاصرة للمشيّدات المركبة المرَشَّحة للإستخدام في الأنفاق الأنبوبية، أرضيات الجسور، ألمنشآت النووية، ألمنشآت الحاوية للسوائل أو الغازات، ألمنشآت المائيّة المحاذية للسواحل، ألملاجئ الحربية، والجدران المقاومة للقص في المباني العالية. تتكون تلك المنظومة الإنشائية من لُباب خرسانية صمّاء محشوّة بين صفيحتين فولاذيتين مرتبطتين معاً ارتباطاً داخلياً بوساطة روابط قص ميكانيكية متعددة الانواع. تحقق تلك المنظومة الإنشائية المركبة مزايا إستثنائية اهمها قيام الصفيحتين الفولاذيتين الخارجيتين بوظيفتين اساسيتين احدهما انشائية وهي التسليح الرئيس والاخرى تشييدية وهي قالبٌ دائم، علاوةً على قيامها بدَورالحاجز الأصّم المقاوم للعصف غير المباشر وللصدمات المباشرة. أمّا بخصوص روابط القصّ- في هذه المنظومة ألإنشائية المركبة ثنائية الطبقات الفولاذية - فإنّها تكون ملحومة الطرفين في كلتا الصفيحتين الفولاذيتين القشريتين لذا فإنّها - إضافة الى قيامها بالوضيفتين الرئيستين لروابط القص التقليدية وهما مقاومة قوى القص الطولية ومقاومة الانفصال العمودي على امتداد الاسطح البينيّة بين الفولاذ والخرسانة- فإنّها تقوم أيضاً بمقاومة قوى القصّ المستعرضة عل ألاسطح البينيّة واسناد الصفيحتين الفولاذيتين من الإنبعاج. تقوم المقالة العلمية الحالية بتسليط الاضواء على الابحاث

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Performance of Semi-Rigid Steel Connections under Monotonic and Cyclic Loadings: A Review

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Abstract: Since the turn of the century, numerous articles have been published with analysis of semi-rigid connections in steel structures. This paper offers a comprehensive survey of major recently published research work dealing with the behaviour of semi-rigid beam-column connections under various configurations of fasteners and welding lines under both monotonic and cyclic loads. The review has two main respects: the first is the moment versus curvature behaviours of semi-rigid steel connections, while the second involves finite element analysis of such connections under monotonic and cyclic loads. The main conclusions concerning the dynamic behaviours of semi-rigid steel connections emerge with regard to the vital influence of beam-column connections on the global seismic performance of steel frame structures. Developing semi-rigidity should thus be considered an effective way to achieve the required performance.

1. Introduction

An uncountable number of structures are now made of steel expressing the enormous possibilities that this material offers. Some of justifications for the choice of steel to build a structure or its elements, include its high strength to volume ratio, its reliability, and its ability to adapt to almost any architectural form, offering a wide range of possible applications, these are supported further by the availability of a large number of standardised parts.

Owing to their high ductility and energy dissipation abilities, semi-rigid steel connections have been favoured in recent moment-resisting steel frames exposed to gravitational monotonic loading alongside lateral or vertical cyclic excitations. Adequate design of members' end-to-end connections is thus required to allow these steel structures to perform well in sustaining such loads. Yet the conventional analysis of steel framed structures supposes one of the two well-known idealised extremities: the rigid joint or pinned joint hypotheses. However, currently prevalent steel frame connections are most likely to display semi-rigid responses, contributing significantly to overall member stress distribution. In general, steel structures can be formed from any combinations of simple or composite pieces joined together in a design that adequately resists forces and moments together.

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Performances of Steel-Concrete Composite Construction with Demountable Shear Connectors – Review

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Abstract. Composite steel-concrete constructions with demountable (bolted) have the prime privilege of the capability to be untied and taken to pieces, furthermore, they remain suitable for tying again to assemble efficient composite structures. Long-term behavior and durability issues may need replacement of concrete slabs or their parts through maintenance of composite bridge decks. It is a complicated procedure and requires a lot of time in case of the popular traditional welded head stud. Dismantling and replacement of concrete slabs can be effortless by using bolted shear connectors. It is also so important for the sustainability stand point owing to remove of the structure at its life time end easily. Construction by using demountable shear connectors permits the development of faster erection methods. During casting of the reinforced concrete slab bolts can be embedded in it. Then, on site, they are assembled to the predrilled top flange of the steel section of the composite member. For certain application, composite structures with demountable shear connectors can prove their competition economically for their faster erection and lower life cycle costs. The present paper provides a comprehensive overview of most recent published research on composite steel-concrete systems in which the two partial interaction components (slip and uplift resistances) are furnished by demountable shear connectors. It also describes, in detail, properties of the main types of shear connection demount abilities innovated so far.

1. Introduction

Very limited published work on the behavior of bolted demountable headed stud shear connectors has been met in literature in comparison with traditional welded studs shear connectors. Some types of demountable shear connectors shown in Figure 1, were investigated in only nine research papers [1], [2], [3], [4], [5], [6], [7], [8], [9]. They are classified according to types defined in Figure 1, with their high lights and outcomes being presented in chronological order through the subsections coming later on.

Properties of Conventional Concrete Containing Waste Glass Powder

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Abstract. In an active procedure to reduce waste glass streams and contribute to recycling, it is proposed to be used in the concrete industry. This study presents a method for reusing waste glass as a partial substitute for fine aggregate. A total of 36 glass concrete cubes (constant in their mix proportions for cement, fine and coarse aggregates) were produced by replacing fine aggregate with waste glass in compensating proportions of 0, 5, 10, 15, 20, and 25%. Sizes of the recycled glass particles used as fine aggregate varied within its lower/finer (0.3-1.18 mm) range to attain glass-containing mixes, maintaining the efficient level of workability suitable for structural concrete in practice. Concrete compressive strength and water absorption were obtained by testing the cubes according to British standards. Experimental results showed that the compressive strength of glass concrete gradually decreases, at a slight rate, with an increase in the waste glass content. Meanwhile, the dry density of glass concrete favorably decreased compared to the control specimens by an average of 1-10%. Using waste glass in concrete decreased water absorption by 25 %. Furthermore, the appearance of the glass concrete has been improved. The study concluded that waste glass could be satisfactorily used as fine aggregate to give the concrete acceptable strength characteristics and lowered density without harming its workability, provided that the replacement is kept content to particle sizes below 1.18 mm.

Keywords: Waste glass, construction field, replacement, recycling, compressive strength.

INTRODUCTION

In our lives, glass is widely used through manufactured products, including bottles, glassware, and vacuum tubes. Glass is a typical material for recycling because of its role in energy saving. The behavior of concrete with waste glass was investigated by Gautam et al. [1]. Their experimental results showed that replacing 40% of the fine aggregate with waste glass did not change the concrete strength. In an investigation [2], waste glass was partially used to replace the cement and fine aggregate in concrete. The fraction of glass powder passing through IS 150 μm sieve was used as a partial replacement for cement (5%-25%), while the fraction passing through the size of 4.75 mm sieve was used as a partial substitute for fine aggregate by a ratio ranging between 10 and 70%. The investigation results showed that the waste glass could be successfully used separately as a partial substitute for cement and fine aggregate. It was also concluded [2] that the concrete strength with waste glass was more than that of the conventional reference concrete for all examined mixing ratios. In another study [3], different replacing ratios for waste glass were carried out experimentally. That work consisted of casting and testing thirty specimens with and without waste glass. The study found that the 28-day compressive strength increased to a maximum value at 12% replacement and increased workability and decreased water absorption.

Al-Deen et al. [4] concluded that using waste glass as a partial replacement of sand in different proportions led to reductions in compressive strength, unit weight, and the cost of concrete. Because of the lack of incoherence between concrete mixture components and glass breakage due to the weak bond between the glass and cement particles. Abdul Kadir et al. [5], the cement was replaced by waste glass which reduced the density of concrete ~~and~~ thus produced

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Efficient use of steel fiber in high-strength reinforced concrete columns

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Abstract

The inclusion of steel fibers has been widely used in column members due to its effectiveness in enhancing strength, ductility, and delaying concrete cover spalling failure. Reinforced concrete columns are recently included steel fibers to enhance their structural performance and control the strain in concrete. In this study, partially-fibered and fully-fibered high-strength concrete (HSC) columns were investigated and compared to non-fibered HSC columns. The partially-fibered columns were examined here to eliminate the extra use of steel fibers through the confined core of the columns. The experimental work included different study parameters: percentage of steel fiber content, columns' length, and internal reinforcement details. The columns were tested under concentric axial loads. The results were analyzed in terms of improvement in the ultimate load, displacement ductility, and energy absorption. The test results determined the impact of using steel fibers in enhancing the axial ultimate load capacities of HSC columns between 14% to 80% of that in non-fibered columns and controlling the concrete cover spalling failure. As well, the test results showed that the increase in steel fiber content improved both the ductility displacement index by 29% to 66% of that in the non-fibered column and the energy absorption index by 1.5 to 3.2 of that in the non-fibered column.

Keywords

Steel fiber, High-strength concrete, Columns, Axial compression, Ultimate load, Failure.

1.Introduction

Reinforced concrete (RC) columns are the main structural elements in most infrastructural systems. High-strength concrete (HSC) columns have recently been used to improve the mechanical and durability performances of RC columns. However, a low confinement effect was detected [1] and a brittle failure of concrete columns was observed [2]. To overcome these problems, steel fibers were included in a mixture of HSC columns. Much experimental research has investigated the influence of the addition of steel fiber to HSC columns. Some research works have inspected the performance of steel-fiber HSC columns under concentric and eccentric compression loads [1−6].

The experimental results concluded the effect of the addition of steel fiber on arresting concrete cover spalling and increasing the ultimate load and ductility of the corresponding columns.

The test results showed that the inclusion of steel fiber improved the ductility of HSC columns by altering the descending portion of the stress-strain curves.

As well, the deformability of HSC columns was developed by increasing both the strain at peak stress and the ultimate compressive strain at failure. The positive effect of steel fibers was observed through the experimental tests by bridging action across microcracks in the concrete mixture which was eliminated the cracks and reduced the crack opening [7]. Based on that, this study is to examine the structural behavior of non-fibered and fiber-reinforced HSC columns. This paper presents an experimental testing of circular medium-scale HSC columns under concentric compressive loading.

As the concrete cover spalling is observed for the outer columns' shell where the inside columns' core is confined by internal transverse reinforcement, the idea of this work is to include the steel fibers on the outer shell of HSC columns. Therefore, the experimental work included some columns with steel fibers provided on the outer shell of RC columns

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AMELIORATION OF FLEXURAL PERFORMANCE FOR REINFORCED CONCRETE BEAMS BY SOFFIT BONDED HIGH PERFORMANCE SELF COMPACTING CONCRETE PRISMS

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Abstract

This paper presents a strengthening technique using a high-performance fiber-reinforced cement-based composite (HPFRCC) mixture. To evaluate the performance of this approach, two types of concrete mixtures were used one high performance (HP) and other high strength (HS) in strengthening process and compared to strengthening using CFRP laminate. The results showed that the strengthening was in the proportions (42 %, 58.03 %, 74.32 %) for (Beam strengthened with high strength mixture (Mhs), Beam strengthened with CFRP laminate (Mcfrp), Beam strengthened with HPFRCC mixture (Mhp), respectively, Where the strengthening improved the bending capacity for beam (Mhp) to a greater extent of the other types and it reduced the appearance of cracks in the beam when loading until occur failure. As appeared failure modes in all elements were due to rupture in the flexure region and crush in the compression region. In addition, ductility index of the strengthened beams was acceptable and energy absorption of the strengthened samples high if compared to the reference beam Therefore, it can be said that this technology may provide a safer alternative for flexural strengthening of RC beams.

Keywords:

Flexural behavior;
Reinforced concrete beams;
strengthening of R.C. beams;
high-performance concrete mixture;
high strength mixture;
CFRP laminate;

Notation:

RC: Reinforcement concrete.
CFRP: Carbon fiber-reinforced polymers.
SCC: Self-Compact Concrete.
HPC: High Performance Concrete.
HSC: High strength Concrete.

1 Introduction

Of the most important issues that have been attracting great attention worldwide, are the strengthening, retrofitting, durability, and maintains of structures. Reinforced concrete (RC) structures frequently need to be strengthened or repaired because of various factors such as changing usage, adhering to outdated norms when designing the structure, altering design principles when designing a structure's capacity, aging or deteriorating materials caused by environmental factors, construction errors, or material damage from excessive loading [1]. The trend of extending the service life of existing structures has also been influenced by the decrease in government funding for new construction [2]. The absence of preventative measures like preventive maintenance along with regular inspections actually made the problem worse and created a need for strengthening, restoration, and maybe complete demolition of the damaged building. In the previous decades, strengthening and retrofitting of reinforced concrete construction was almost based on utilizing carbon fiber reinforced polymer owing to two considerable advantages; its simple application and low weight. However, their extremely unfavourite brittle failure has made the benefiting from the polymer tensile properties impracticable [3,4]. Furthermore, the debonding phenomenon (between CFRP laminates and the attaching concrete surfaces) represents a dangerous mode of failure anticipating collapse caused by Sudden breaking down of the force transfer mechanism [5].

Researchers like (Vladimir et. al.) thought about high-performance concrete as an alternative to strengthening because of its typical properties, such as high resistance, tensile strength, and fire resistance, and they were able to obtain good results [6–11]. Where flexural capacity of RC beams can be increased by using externally bonded HPFRCCs. It prompted the researchers to strengthen using an HPFRCC Laminates approach [12]. Bending behavior of HPFRCC influenced by its tensile ductility was performed by many studies [13,14]. Multiple micro-cracks were formed at the end of beam due to

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Prediction of dust storms in construction projects using intelligent artificial neural network technology

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ABSTRACT

Sandstorms (dust storms) are considered the most events which cause destructive and costly damages in lots of desert regions. These sandstorms may be a reason of huge disasters or damages on environmental as well as health aspects. The aim of this paper is to develop a mathematical model for predicting the Dust Storm in Republic of Iraq using Artificial Neural Network (ANN) technique. As a case study, four construction projects in Iraqi cities were selected (Baghdad, Basrah, Samawa, and Nasiriya) in order to identifying and prediction of the sandstorms, which significantly help to reduce the effects of damages. Only one ANN model was built to predict a dust storm. The datas of this model cited from Iraqi Meteorological Organization and Seismology. Four factors were adapted to develop the model (Max. Temperature, Min. Temperature, Rain and Wind). It was found that ANN has the ability to predict the dust storm with a high accuracys off the correlation coefficient (R) which is 90.00%, with a percentage of average accuracy is 89%.

Keywords: ANN, Traning, Testing, Validation, Predicting, Sandstorms, Iraq

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1. Introduction

One of the most natural events that happened frequently in most of the deserts regions in the world is the dust storms. That may be a reason of big disaster of properties and lead to death. Although, the sandstorms always take place at the waterless environments in the world, as in Mongolia, Middle East, Iraq, North China, Australia and Central Asia, the phenomenon of sandstorms has not yet been adequately explored, because of the lacks off observations surfaces, which are especially sparse in hyper-arid low populated desert regions. They are particularly scattered in low-arid, low-density desert areas.

Average temperature in Iraq ranges from 48°C or 118.4°F, inn August and July, in order to belows zero in Januarys, greatest the rains happens between April and December, with means from 100 to180 mm per year. The mountainous area in the north of Iraq has a significantly higher rainfall than the central and southern regions. There are two types of wind, which the months of summer characterized, they are: south-east besides south-east, sandy, dry, winds, in which sometimes occasionally winds for each hour 80 Km., these sandstorms begin with April and continue to the early of June, then, begin with late Septembers to Novembers. That perhaps lasts for one days at the end and the beginning of the current term or for many other days.

These winds are often dusty, which may rise to several thousand meters. From mid-June to mid-September, prevailing winds are north (north and north-west).

The aim of most studies on sandstorms is to understand and characterized the phenomenon frequency, as well as the health and environment impact of it. In Central Asia presented a study about the sandstorms systems,

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Development of Bi-Langmuir model for description initial pH and temperature effects on the sorption of cadmium onto waste foundry sand

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Abstract

The present study develops the sorption model for simulating the effects of pH and temperature on the uptake of cadmium from contaminated water using waste foundry sand (WFS) by allowing the variation of the maximum adsorption capacity and affinity constant. The presence of two acidic functional groups with the same or different affinity is the basis in the derivation of the two models; Model 1 and Model 2 respectively. The developed Bi-Langmuir model with different affinity (Model 2) has a remarkable ability in the description of process under consideration with coefficient of determination > 0.9838 and sum of squared error < 0.08514. This result is proved by FTIR test where the weak acids responsible of cadmium ions removal using WFS sorbent can be represented by surface silanol (O-H) functional groups.

Keywords: Cadmium, Foundry sand, Modified langmuir model, Simulation, Sorption

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Engineering Characterization of Quaternary Sandy Soil in the Mesopotamia Plain

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Abstract – *The Quaternary sandy soil from Mesopotamia Plain and its engineering characteristics are one of the main objects of this paper, where the depositional environment, source material information, and chemical and physical factors have been provided by the characterization of the quaternary sandy soil. The influence of shape, mineral composition, and roundness of the soil grains has been studied with the assistance of sieve analysis, X-ray analysis, and scanning electron microscope. The main engineering properties of the soil (compressibility (no lateral strain), and shear strength) have been included in this paper. These properties have been determined under different compaction efforts, with unsoaked and soaked conditions. It has been found out that quaternary soil grains exhibit all about the same size, which indicates well-sorting sediment. The particles of the soil have been bulky, they have been almost sub-angular to a slightly rounded shape, which has reflected the mechanical weathering of the source minerals that formed quaternary sandy soil, and this may influence the compressibility and shear strength parameters. Mineralogically, the main assemblage of the soil has consisted of two minerals types (quartz, and calcite); such variety is chemically stable. It has been noted that, for the soaking conditions under different pressures, the axial deformation, the compression index, and the swelling index of the soil are low. This has been attributed to grain regularity. Under confined compression, the mechanism of deformation for such grains includes "contact slippage". Finally, increasing the compaction effort has impeded the shearing of the soil particles and the sliding between the grains of soil.*

***Keywords**: Engineering Characterization, Quaternary Soil, Scanning Microscope, Compressibility, Strength, Sphericity, Degree of Roundness, Soil Sorting Indexing*

Nomenclature

ASTM	American Society for Testing Materials
Cc	Compression index
Cr	Rebound index
SEM	Scanning Electron Microscope
SP	Poorly graded sand
QSS	Quaternary Sandy Soil

I. Introduction

From a geological point of view, the Quaternary soil is the commonest material presenting closes or at the surface of the earth. Culshaw et al. [1] have stated that some Quaternary soils might have special characteristics to use as a material for building foundation. The formation's processes of these young deposits control their engineering characteristics, and consequently, the way at which these deposits behave. The deposition or the formation conditions and the parental material type are among the main factors that control the structure, the composition, and the type of minerals present of Quaternary Soils, and as a result, their engineering behavior of them. Minerals' type is strongly influencing the engineering behavior of these soils. For example, soils with a significant quantity of clastic grains are less sensitive to water than soils with clay menials. The formation of grains, their mineral composition, their depositional environments, and the transportation are reflected by grain's shape and size, [2]-[4]. The mechanical controlling of grain's shape occurs for soils with grain size between 0.05 mm and 0.4 mm. With age, the abrasion and the chemical action increase, thus, the younger sand grains, regardless of their particle size, tend to less round and vice versa. Typically, the particles with size greater than 0.4 mm have a higher probability of brittle fracturing in comparison to smaller particles [2].

The particle shape of sand grain has an effect on the maximum void ratio (minimum density) and on the minimum void ratio (maximum density). As grain's sphericity and roundness decrease, the difference between the maximum void ratio and minimum void ratio increases, [4]. As stated by Guimaraes [5], the ability of soil grains to attain minimum void ratio or dense packing is hindered as their irregularity increases.

Large open voids can be created when platy soil particles bridge the gaps over soil grains. Cho et al. [4] have stated that the processes and the level characteristics of the particles can be reflected by macroscale soil behavior. Unfortunately, the shape of

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Behavior of hybrid concrete beams with waste rubber

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Abstract. The studies on the applications of waste materials in concrete have been increased in Iraq since 2003. In this research, rubber wastes that resulting from scrapped tires was added to concrete mix with presence of superplasticizer. The mechanical properties of concrete and workability of concrete mixes were studied. The used rubber were ranging in size from (2-4) mm with addition percentages of (0.1% and 0.2%) by volume of concrete. The results of mechanical properties of concrete show that rubber enhance the ductility, and compressive and tensile strength compared to concrete without it. Also, the flexural behavior of hybrid strength concrete beams (due to using rubber at the bottom or top layer of section) was investigated. The rubber concrete located at bottom layer gives higher values of ultimate loads and deflections compared to the beam with top layer. A similar response to fiber concrete beam (all section contains 0.1% rubber) was recognized. Finite element modeling in three dimensions was carried for the tested beams using ABAQUS software. The ultimate loads and deflection obtained from experimental and finite elements are in good agreements with average difference of 8% in ultimate load and 20% in ultimate deflection.

Keywords: reinforced concrete; waste rubber; experimental test; finite element analysis; hybrid section

1. Introduction

Many kinds of waste materials are considered to be an enhancement in concrete. These materials may contain: plant cellulose, silica fume, rubber from disposed tires and fly ash. Rubber may be considered to be as the latest recycled materials that have been studied and investigated due to its availability and needful use in the building field. Different research works were carried out on hybrid concrete or using rubber as additive or replacing the aggregate in concrete as given in the next paragraph.

Zhang *et al.* (2006) studied analytically and experimentally the flexural response of layered ECC-concrete beams. Flexural tests (under four points) were made on concrete beams with ECC layer. This layer is positioned at beam section tensile side. The purpose of introducing this layer was to increase the bending strength. The thickness of this layer effects the results.

Ganjian *et al.* in 2009 studied the effect of replacing aggregate by tire rubber on concrete mixtures.

The obtained results show that the strength in compression is reduced if the percentage of rubber replacement in concrete is increased without noticeable changes in other concrete properties.

Al-Tayeb *et al.* (2013) prepared rubberized concrete specimens by using 5%, 10 % and 20% alteration of fine aggregate (sand) by waste rubber. The dimensions of the prepared samples were 50×100×500 mm which are subjected to static and impact loads (3 point load). The samples were made with, single layer natural concrete or single layer rubberized concrete or two layers (top layer with rubberized concrete and bottom layer natural concrete). The samples were loaded until failure was recognized. The load deflection curves were plotted and energy gained were calculated for each sample. LUSAS software was used to model the problem numerically. The rubber samples show higher resistance to impact load.

Katzer (2013) made an experimental study on using multiple waste materials to produce cement mortars. Natural Waste sand was used as aggregate. Ceramic waste fume was implemented to alter partially the binder in mortar mixtures. The fresh mixes and hardened mortars properties were obtained. Different mechanical concrete properties such as: mortar density, cube compressive strength and prism flexural strength were investigated. These mortars can be used in members which required lower concrete mechanical characteristics.

Bing and Ning (2014) carried out an experimental study based on using tire rubber particles as an alteration in concrete for coarse aggregate. The replacement reduced the compressive strength and modulus of elasticity. Also, the flexural strength of concrete was reduced with increasing replacement percentage in concrete.

Zarrin an Khoshnoud (2016) carried out a study on the effect of using steel fibers in reinforced self-compacted concrete members. A superplasticizer of 1% and 2% by volume friction were used in the study concrete mixes. The used fibers were of 60/30 (length/diameter) fibers and the used percentages were 0.0%, 1.0%, 1.5% and 2%. The mechanical and flexural properties of members were found to be increased with increasing the steel fiber percentages by volume in the study. This was due to the improvement in

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Research paper

Flexural Behavior of Rubberized Reinforced Concrete Beams

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Abstract

In Iraq, the use of rubber waste material in concrete is an interesting topic due to its availability in large volumes. Researches of applic tions of rubber waste in concrete have been increased since 2003. Many studies carried out to investigate the performance of concre using different ratios of rubber as a replacement to fine or coarse aggregate. In this research, rubber wastes from scrapped tires have be added as fiber to concrete mix with presence of 0.5% superplasticizer. The flexural behavior of concrete beams, mechanical properties concrete and workability of concrete mixes have been studied. Rubber fibers ranging from (2-4) mm were added in percentages of (0.5 and 1%) of the cement weight. The results have demonstrated that the addition of rubber material as fibers in natural aggregate concre enhances its ductility, compressive strength and tensile strength compared to the normal concrete. The effect of rubber fiber content found to be significant on the behavior of tested beams. If the fiber content increased from 0 to 0.5% the cracking load increased by 60 and ultimate load increased by 21%. For rubberized concrete, if the fiber content increased from 0.5 to 1.0%, the cracking load decreas 7% and ultimate load increased by 4%.

Keywords: beams, experimental study, finite elements, flexural, rubberized concrete.

1. Introduction

Many kinds of waste materials are considered to be additives for concrete. Some of these materials contain, cellulose, fly ash, silica fumes and wood particles. Rubber gained or obtained from disposed tires is considered as the latest waste material that has been investigated due to its availability and use in construction activity. Examinations have been revealed that scrapped rubber tires including materials do not molder under environmental conditions and thus causing dangerous problems. One option of disposal is burning. However, burned tires leave a toxic pottage of pollutants. Using rubber in landfill as alternative to burning causes complex environmental problems as it is not biodegradable. It can be used to develop a new type of concrete by incorporating rubber particles in it.

Ganjian et al. in 2009 have been studied the effect of replacing or exchanging aggregate by tire rubber in the concrete mixtures. The obtained results have showed that the strength in compression has reduced if the percentage of rubber replacement in concrete has increased without noticeable or remarkable changes in other hardened concrete mechanical properties.

Certain researches on studying the properties of recycled aggregate (RA) were progressed since 2011 which consider the durability and response of waste concrete structural elements (RAC) (Marinkovic et al. 2012).

Al-Zahraa et al. (2011) have been investigated experimentally the shear tests on recycled concrete coarse aggregate reinforced beams. Twelve beam specimens with varied content of recycled or waste coarse aggregates, stirrups and shear spans were laboratory tested to resist two point loads until failure.

Fathifazl et al. (2011) investigated the shear response of coar recycled aggregate beams. The equivalent mortar volume meth of mixture was used. Several beams without stirrup were design and tested for shear based on this new mix design method.

Al-Tayeb et al. (2013) were prepared rubberized concrete spec mens by partial substitution (5 %, 10 % and 20 % replacements l volume) of sand by waste crumb rubber, and tested under impa three-point bending load, as well as static load. Three types specimens (size 50×100×500 mm) namely, plain concrete, ru berized concrete, and double layer concrete (with rubberized co crete top and plain concrete bottom) were loaded to failure. both tests, the load - displacement and fracture energy of ea specimen were investigated. Finite-element simulations were al performed to study the dynamic behaviors of the samples, by u ing LUSAS V.14 software. It was noticed that, the impact, an inertial and bending loads increased with the increase in the pe centage of sand replacement by crumb rubber.

Arezoumandi et al. (2014) investigated the shear capacity strength response of beams casted with full waste or recycled co crete aggregate (RCA). This experimental program comprise testing 12 beams (six for each mixture of concrete). The parame ric study included steel reinforcement ratio and concrete mixtu or type.

Bing and Ning (2014) carried out an experimental study based using tire rubber particles as a surrogate for natural coarse aggr gate in concrete mix. The replacement reduced the concrete com pressive strength and Young's modulus of elasticity. Also, t flexural strength of concrete was investigated.

Knaack and Kurama (2015) have been studied the behavior waste aggregate normal strength concrete beams in both shear a

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Experimental Measurement of Rice Husk Effectiveness as an Alternative Adsorbent for Turbidity Reduction in Synthetic Water

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Abstract

Providing a clean and high quality drinking water to both rural as well as urban areas is a great challenge by itself, adding to it the large volume requirements of such water at high population areas means a very high cost for such industry because mainly of the cost of expensive commercially available adsorbent used in this process. This led inhabitants of the remote and/or rural areas to use less quality water with all its risks and health challenges. In this study, a locally collected rice husk is tested to be used as an alternative adsorbent to the expensive common commercial ones. Parameters like adsorbent dosage, initial concentration of turbidity, and pH level were tested to investigate their effects on the process. Treatment of synthetic turbid water was done after changing these parameters to measure the effect of each parameter alone and the results showed a set of parameters that can be used to achieve high efficiency of turbidity removal. The study concluded that rice husk can be used as a well cheap alternative adsorbent to reduce the river water turbidity due to its availability and low cost with a decent removal efficiency approaching 95%.

Keywords: Turbidity; Rice husk; Adsorption; Adsorbent Dosage, Turbidity Initial Concentration; pH level.

القياس التجريبي لفعالية قشور الأرز كمادة مازة بديلة لتقليل العكورة في المياه الإصطناعية

نورا سعد فرج، سمارة سعد فرج

الخلاصة:

يعتبر توفير مياه الشرب الصحية و النظيفة و ذات الجودة العالية للمناطق الريفية و المدن تحديا مهما بحد ذاته. يضاف الى ذلك الحاجة المتنامية في حالة المدن المكتظة بالسكان حيث تظهر الصعوبة في ذلك بالكلفة العالية لتوفير هكذا مياه باستخدام المواد المازة المتوفرة في السوق التجارية. هذا يقود بعض سكان الريف أو المناطق البعيدة الى استخدام مياه أقل جودة بالرغم من المخاطر و التحديات الصحية المرافقة لهذا الأمر. في هذا البحث سيتم تجربة قشور الأرز المتوفرة محليا كمادة مازة بديلة عن المواد المعروفة ذات التكلفة العالية. تم فحص أكثر من مؤشر (كمية المادة المازة المضافة، التركيز الأبتدائي للعكورة، و مستوى الحامضية) لغرض الكشف على تأثيرهم على العملية بالكامل. تمت معاملة مياه معكرة محضرة مختبريا بتغيير كل مؤشر على حدة لبيان تأثيره على العملية و أثبتت النتائج المختبرية أنه من الممكن استخدام قشور الرز لتقليل العكورة في المياه المفحوصة بنسبة قدرت بأكثر من 95% عند استخدام مجموعة من المؤشرات.

الكلمات الرئيسية: العكورة ، الامتزاز ، قشور الأرز ، كمية المادة المازة ، التركيز الاولي للعكورة ، الدالة الحامضية

1. Introduction

One of the increasingly limiting resources in the planet nowadays is the fresh water, more reduction and an increase in the limitation is expected in the next century. This increase results due to urbanization, climate change and population inflation, which may lead to water crisis among other environmental serious consequences. The increase in the drinking water need will not be effected by such limitation only but also by the pollution resulted from the factors mentioned earlier on the freshwater ecosystem. (Al Baidhani and Al-Salihy, 2016)

In the developing countries likewise in many other parts in the world, the fresh surface water is considered as the main water supply source. Drinking water in specific is usually extracted from the highly turbid river

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Removal of Meropenem by using *Lemna minor*

Key words: kinetic models, biodegradation, *Lemna minor*, Meropenem

Introduction

Rapeutic drugs are a class of anthropogenic substances that are an emerging issue about pollution of the environment. Antibiotics are therapeutic organic compounds that can be produced by particular microorganisms as secondary metabolites, or can be generated artificially or semi-artificially (Phillips, 2003). Antibiotics exert antibacterial activity by altering the basic metabolic pathways of bacteria (Girardi et al., 2011).

These compounds are commonly used in human medicine for the prevention of bacterial infections, in agriculture for the fight against plant pathogens, in the veterinary industry and in aquaculture for the control of pathogenic agents. Antibiotics, however, are also used as growth promoters (Nunes, Veiga, Frankenbach, Serôdio & Pinto, 2019).

This number contains both human and veterinary antibiotics, most of which are antibiotics for veterinary purposes (Thiele-Bruhn, 2003). For all the reasons previously studied, the increasing concentration of antibiotics in the environment resulted from the increased use of such products.

Although not present in high concentrations, widespread dissemination of such materials has recently been observed, particularly in the aquatic environment. Generally, urine and feces are the primary sources of unchanged types of prescription drugs in nature after the excretion of pharmaceutical materials. This helps, with or without treatment, these chemicals to enter waste water (Nunes et al., 2019).

In certain countries, excrete-containing waste water and drug residues are processed at wastewater treatment

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة

النتاج البحثي للتدريسي

المدرس زاهر نوري محمد تقي

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2	Compression index and compression ratio prediction by artificial neural networks	Abbas Jawad Al-Taie, Ahmed Faleh Al-Bayati, Zahir Noori M Taki	Baghdad University , Journal of engineering	2017
3	Evaluating Iraqi modified asphalt concrete moisture resistance based on strength ratio and fracture energy parameters	Zahir Noori M Taki, Alaa H Abed, Hasan Al-Mosawe	Advances in Civil Engineering	2019
4	Artificial neural network modeling of the modified hot mix asphalt stiffness using Bending Beam Rheometer	Mohammed A Abed, Zahir Noori M Taki, Alaa H Abed	Materials Today: Proceedings	2021
5	Shear strength prediction of steel fiber reinforced concrete beams without transverse reinforcements	Ahmed Faleh Al-Bayati, Zahir Noori M Taki	Asian Journal of Civil Engineering	2014
6	NUMERICAL ANALYSIS OF REINFORCED CONCRETE BEAM STRENGTHENED BY CFRP SUBJECTED TO MONOTONIC LOADING	ABDULKHALIK J. ABDULRIDHA, ZAHIR NOORI M. TAKI, IBRAHIM S. I. HARBA	International Journal of Civil Engineering and Technology (IJCIET)	2018
7	Numerical Analysis of reinforced Concrete Corbel Strengthening by CFRP Under Monotonic Loading	ABDULKHALIK J. ABDULRIDHA, HUSSAM K. RISAN, ZAHIR NOORI M. TAKI	International journal of Civil Engineering and Technology (IJCIET)	2018
8	Punching shear strength of column footings	Zahir Noori M Taki, Ahmed Faleh Al-Bayati	Innovative Infrastructure Solutions	2024
9	Elastic analysis of Large Steel ribbed Domes by using Grillage Analogy	Hussain M. Hussain ZAHIR NOORI M. TAKI	Baghdad University , Journal of engineering	1999

Behavior of reinforced concrete segmental hollow core slabs under monotonic and repeated loadings

Authors Ibrahim N Najm, Raid A Daud, Adel A Al-Azzawi

Publication date 2019

Journal Structural Monitoring and Maintenance

Volume 6

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Pages 269-289

Publisher Techno-Press

Description This study investigated experimentally the response of thick reinforced concrete specimens having hollow cores with critical parameters. The investigation includes testing of twelve specimens that are solid and hollow-core slab models. Each specimen consists of two pieces, the piece dimensions are (1.2 m) length,(0.3 m) width and (20 cm) thickness tested under both monotonic and repeated loading. The test program is carried out to study the effects of load type, core diameters, core shape, number of cores, and steel fiber existence. Load versus deflection at mid span, failure modes, and crack patterns were obtained during the test. The test results showed that core shape and core number has remarkable influenced on cracking pattern, ultimate load, and failure mode. Also, when considering repeated loading protocol, the ultimate load capacity, load at yielding, and ductility is reduced.

Behavior of tension lap spliced sustainable concrete flexural members

Authors Adel A Al-Azzawi, Raid A Daud, Sultan A Daud

Publication date 2020

Journal Advances in concrete construction

Volume 9

Issue 1

Pages 83-92

Publisher Techno-Press

Description The use of spliced reinforcing bars in sustainable concrete members to manage inadequate bars length is a common practical issue which is may be due to some limitations. The lap splicing means two bars overlapped in parallel with specified length called the splice length in order to provide the required bond between the two bars. The bond between sustainable concrete and spliced steel bars is another important issue. The normal strength sustainable concrete specimens of sizes 1700× 150× 150 mm with tension reinforcement lap spliced were selected according to testing device length limitations. These members were designed to fail in flexure in order to investigate the lap spliced tension bars effect. The selected lap spliced tension bars were of 10 mm size with smooth and deformed surfaces in order to investigate the surface nature accompanied with the splice nature. The sustainable concrete mechanical properties and mix workability were also studied. This study reveals that the effect of number of spliced bars on the response of beams reinforced with smooth bars is found to be more obvious than deformed one. Finite element modeling in three dimensions was carried out for the tested beams using ABAQUS software. A parametric study is carried out using finite elements on considering the following parameters, concrete compressive strength, load type and opening in cross section (hollow section) for weight reduction purposes. The laboratory and numerical results show good agreements in terms of ultimate load and deflection with an average difference of 10% and 15% in ultimate load and deflection respectively.

Bond Stress Assessment of Corroded and Un-Corroded Reinforcement Inside the Concrete

Authors Sultan A Daud, Mustafa Hameed Al-Allaf, Omer K Fayadh, Raid A Daud, Adel A Al-Azzawi

Publication date 2020/2/29

Journal Solid State Technology

Pages 912-919

Description Corrosion of steel bars is considered to be one of the major factors affecting durability of the concrete structures. In this paper, the bond stress response of corroded and un-corroded embedded bars inside the concrete was assessment experimentally. Twelve cubes were tested experimentally for that purpose. The main parameter of this work was the reinforcement condition, corroded, un-corroded and epoxy coted reinforcement. The corrosion process was executed for 90 days duration. It was found that bond stress for samples subjected to long-term corrosion (for a period of 90 days corrosion) was reduced by approximately 54.4% and the slip was reduced also by a bout 30%. Moreover, the bond stress was reduced by 26% for samples where the reinforcement coated with epoxy. Finally, bond stiffness between the concrete and the reinforcement was deteriorated in the corroded samples more than that in the ...

Tension stiffening evaluation of steel fibre concrete beams with smooth and deformed reinforcement

[HTML] from sciencedirect.com

Authors Raid A Daud, Sultan A Daud, Adel A Al-Azzawi

Publication date 2021/3/1

Journal Journal of King Saud University-Engineering Sciences

Volume 33

Issue 3

Pages 147-152

Publisher Elsevier

Description This study investigated the flexural performance of steel fibre beams reinforced with smooth and deformed reinforcement, both experimentally and numerically. As part of the experimental investigation, five full-scale reinforced concrete beams were constructed with plain and steel fibre concrete and were tested under 4-point flexural monotonic loading. The amount of fibre and the condition of the rebar were the main parameters studied. The test's outcome built up a numerical model to simulate the actual performance of the reinforced concrete beams under tested loading. Afterward, a parametric study was conducted to get a better understanding of the behaviour of the steel fibre concrete beams. The experimental results show that the cracking load was not affected by the steel reinforcement conditions, whether smooth or deformed. Moreover, 9% of the ultimate deflection was caused by tension stiffening and 3 ...

Behavior of reinforced concrete solid and hollow beams that have additional reinforcement in the constant moment zone

[HT

Authors Sultan A Daud, Raid A Daud, Adel A Al-Azzawi

Publication date 2021/3/1

Journal Ain Shams Engineering Journal

Volume 12

Issue 1

Pages 31-36

Publisher Elsevier

Description This paper presents the effect of non-uniform reinforcement ratio along the beam length on the flexural behaviour experimentally and numerically. Within the experiment, four reinforced concrete beams each had a different reinforcement ratio. However, three of four beams had a similar reinforcement ratio in the constant moment zone (0.012). Cracking load, load carrying and deflection were monitored through the test. A nonlinear finite element software was implemented to simulate the experimental behaviour. Followed up by a parametric study. It was found that, in reinforced concrete beams, the tension stiffening depends on the concrete area in the tension zone not the reinforcement ratio. FEA predicts the reinforced concrete beams behaviour within a good agreement. Finally, the findings show that, determining variable amount of reinforcement ratio along the beam length will not sacrifice the flexural behaviour ...

Finite Element Modeling of One-Way Recycled Aggregate Concrete Slabs Strengthened using Near-Surface Mounted CFRPs under Repeated Loading

[PDI

Authors RAID DAUD

Publication date 2022/11/1

Journal Journal of Engineering

Volume 28

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Pages 32-46

Description This study offers numerical simulation results using the ABAQUS/CAE version 2019 finite element computer application to examine the performance, and residual strength of eight recycle aggregate RC one-way slabs. Six strengthened by NSM CFRP plates were presented to study the impact of several parameters on their structural behavior. The experimental results of four selected slabs under monotonic load, plus one slab under repeated load, were validated numerically. Then the numerical analysis was extended to different parameters investigation, such as the impact of added CFRP length on ultimate load capacity and load-deflection response and the impact of concrete compressive strength value on the structural performance of slabs. This article aims to provide a numerical model for simulating the nonlinear behavior of such slabs, including a trustworthy finite element model approach and constitutive material models. In aspects of loaddeflection and cracking patterns, comparisons between computational and experimental models are provided, and a reasonable fit is demonstrated. The average ratio of numerical model ultimate load and deflections to experimentally tested slabs were 0.992 and 0.913, respectively. As a result, finite element analysis may be regarded as a preferred and trustworthy approach for simulating the non-linear behavior of one-way slabs (strengthened or not) in terms of complexity, difficulty, time savings, human effort, and money.

Experiment Investigation of Behavior of Preloaded Thick One–Way Slabs Repaired by NSM CFRP Plate

Authors Kutaiba A Abbood, Raid A Daud

Publication date 2022/9/26

Journal Mathematical Statistician and Engineering Applications

Volume 71

Issue 4

Pages 3695-3708

Description Five slab specimens, including two reference specimens, without strengthening and three specimens strengthened with CFRP plate were tested to examine the utilizing carbon fiber polymer NSM method in damaged slabs repairing. Examinations were made by comparing the behavior of specimens without damaged to that of preloaded up to 60% from the flexural load capacity of the reference slab. CFRP strips length is the parameter which is studied in this current work.

Preloaded behavior of thick one-way slabs strengthened with NSM–CFRP plates

Authors Kutaiba A Abbood, Raid A Daud

Publication date 2022

Journal NeuroQuantology

Volume 20

Issue 6

Pages 8665

Publisher NeuroQuantology

Description In this research, a nonlinear finite element model utilizing ABAQUS was adapted to obtained structural behavior of damaged one-way slabs and studies the influence of CFRP parameters and preloaded percentages to achieve better response. Three dimensional elements (solid, shell, truss) are used and the detailed model takes into consideration elastic and plastic behavior of the materials.

Reclaimed Concrete Slabs Strengthened using CFRP Plate Strips Under Modified Repeated Loading

Authors Nameer N Salman, Raid A Daud

Publication date 2023/9/3

Journal Al-Mansour Journal

Volume 39

Issue 1

Pages 1-15

Description The primary purpose of this study is to investigate the performance and residual strength of four reclaimed concrete one-way slabs. Three of the slabs were strengthened with near surface mounted carbon fiber reinforced plastic (NSM CFRP), and all of the slabs were presented in order to investigate the influence of various parameters on the structural behavior of each of the slabs. The experimental program consists of casting and evaluating a total of four samples, which are then separated into two primary categories. These groups were classified based on the manner in which they were loaded (monotonic, and modified repeated). Those slabs had a comparable shape and dimensions of 1200 mm by 600 mm by 140 mm. The experimental inquiry was expanded to include the study of many characteristics, such as the influence of increased CFRP strip thickness and the different types of loads on the maximum load capacity and loaddeflection response. The results indicated that increase the added FRP strips area has a small effect on the cracked to ultimate load (**Pcr/P u**) percent, where the percent of (**Pcr/P u**) was 25 and 28 for reference slab without CFRP, and slab with CFRP of 1.2 mm in thickness under monotonic load respectively, also adding CFRP strips has an effect on the ultimate load, the increase of adding CFRP strips area increased the failure load by about 3.1 for specimens slab with CFRP of 1.2 mm in thickness with respect to the specimen reference slab without CFRP for monotonic load tests. The percent of **P**u (slab with CFRP of 1.2 mm in thickness under repeated loads)/**P u** (slab with CFRP of 1.2 mm in thickness under …

Behavior of hollow core slabs strengthened by NSM CFRP plates subjected to repeated loading

Authors Namaa R Jasim, Raid A Daud

Publication date 2024/2/14

Journal AIP Conference Proceedings

Volume 3009

Issue 1

Publisher AIP Publishing

Description This paper presents the findings of an experimental study of four hollow thick slabs. Near-surface mounted carbon fiber reinforced polymers (NSM-FRP) plates have been used to reinforce the slabs under repeated loading. Two series included four specimens; the first series had two control slabs. The second series had two strengthened slabs, where one slab was tested under monotonic loading and three other slabs were tested under repeated loading. The main variables are the different configurations of CFRP employed in tension reign and the effect of repeated loading in the slabs. The experimental results showed that the three thick slabs with hollow core tested under repeated load had turned from flexural failure mode to shear-flexure failure mode, and the slab with two grooves had failed with a higher number of cycles (56 cycles) compared to four grooves. Also, the NSM-CFRP strengthening approach ...

EVALUATION THE WATER QUALITY OF AL-RUSAFA TREATMENT PLANT IN BAGHDAD CITY / AL-RUSAFA SIDE USING SEVERAL WATER QUALITY INDICES

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ABSTRACT

The present study was conducted drinking water treatment plant located in districts which is (Al-Rusafa) in Baghdad city. The study aims to assess the water quality produced from the above plant using various water quality indices. Twelve physical and chemical parameters have been tested which are pH, turbidity, electrical conductivity, calcium, magnesium, chloride, total hardness, alkalinity, sulfate, sodium and total dissolved solids. Five different approaches and methodologies of water quality indices were applied to get the level of pollution during a period of nine months, starting from November 2021 until July 2022.The values WAV WQI for water treatment pant indicate that the water quality was good. Also, the results of the MNE WQI showed that water treatment plant produced clean water, but Al-Rusafa treatment plant in April, the water was very clean. The values of (weighted method) indicated that the water quality for water treatment plant was good. It was found that water treatment plant studied gives excellent quality using based on values of CCME and BCWQI indices. It is found that the values of all chemical and physical parameters are within Iraqi standards. Finally, in the present study, many statistical equation were found for the purpose of calculating the water quality index for water treatment plant studied with a proper coefficient of determinations.

KEYWORDS

Water Quality Indices, WAV WQI, water treatment plants, CCME, BCWQI.

PAPER INDEX

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INTRODUCTION

Water is a valuable natural resource that we utilize for drinking and a variety of other reasons in our daily lives. [1]. Safe drinking water is essential for human health around the world; as a universal solvent, water is a primary source of protection against contamination and illness, according to the World Health Organization (WHO) Water-borne diseases account for 80% of all diseases, and drinking water in many countries does not satisfy WHO criteria [2], with 3.1 percent of deaths attributed to the unclean and poor quality of water. [3]. Water pollution occurs when unwanted contaminants enter water, altering its quality and posing a threat to the environment and human health. [4]. Some drinking water supplies have been contaminated with germs, viruses, heavy metals, and salts as a result of insufficient treatment and management of waste industrial outputs. [5] Diseases such as cholera, dysentery, and typhoid are caused by a lack of safe drinking water and proper sanitation measures, and millions of lives are lost each year in impoverished countries [6]. Water is required not only for metabolic systems in the human body, but also for other activities related with human life, such as distilled water for laboratories, medical factories, minerals in drinking water, industries, agricultural, aquatic cultures, and other similar activities [7]. The WQI can be defined as a mathematical tool transforming large quantities of data obtained from physical and chemical properties of water into a single number representing the level of water quality (Bharti and Katyal, 2011) [14]. Water quality is determined by its physical, chemical, and biological characteristics. Before using water for different intended uses, such as potable, agricultural, recreational, and industrial water utilizations, it is vital to determine the water's quality. It's critical to establish water quality metrics in order to assess the condition, quality, and level of contamination of surface water. Processing related data is necessary, and professionals should be shown the outcomes. Using water quality indicators is one of the simplest ways to evaluate current water quality conditions [10]. A need for all living things as a result, "no water, no life" is correct [9]. As a result, the goal of water treatment is to deliver water that is as close to pure as possible. Depending on the source of water, the degree of contamination, and the desired water quality, this treatment may be traditional or advanced. All water treatment plants in Iraq are conventional, and they strive to remove suspended and pathogenic contaminants. Sedimentation and filtering with coagulant assistance are employed to remove suspended and colloidal particles in these traditional plants, and chlorine is used to kill pathogens. After the water had went through the treatment process, multiple tests were carried out to measure its parameters and compare them to standards in order to assess its quality and determine whether it fulfilled the requisite criteria. Physical, chemical, and biological factors are all tested in this water.

The Tigris river is Baghdad's primary source of drinking water; yet, in recent years, there has been a rise in wastewater and direct Tigris river discharge. Furthermore, the presence of antibiotics in drinking water, in addition to other contaminants, was discovered [8], As a result, one of the most important resources is water.The research on green ecological agriculture management is of great significance to the development of ecological agriculture and the solution of various drawbacks and

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crises brought by modern agriculture. However, in the current e-commerce sales, the safety and quality of agricultural products cannot be presented to customers. Based on this, in our research, we build an information-based digital management platform, which includes developed languages, frameworks and database. In the digital information management platform, we track and monitor the agricultural product information of green ecological agriculture in Northeast China throughout the whole process, so as to ensure the safety and quality of the agricultural products during the sale of the agricultural products on the e-commerce platform. In addition, we also discussed the economic benefits of this digital information platform for green ecological agriculture.

CONSTRUCTION OF INFORMATION DIGITAL MANAGEMENT PLATFORM

In order to better understand the situation of green ecological agriculture in Northeast China, this chapter mainly introduces the development languages, development frameworks and tools used in the electronic platform of agricultural products, and gives a brief introduction to them according to the situation of green ecological agriculture in Northeast China. The advantages and reasons for selection are analyzed one by one. These theories or tools include: languages, frameworks, and databases.

It is necessary to continually studying the water quality, because it is greatly affects human health. For the purpose of evaluating the level of drinking water quality in the city of Baghdad, more than one water quality index has been used and selected plant on the Rusafa side, which is: AL-Rusafa.

STUDY AREA AND METHODS

The present study was conducted to evaluate the treatment efficiency of water treatment plant in the city of Baghdad on the Rusafa side which is :(AL-Rusafa) using five indices of water quality. The source of raw water of these plant is the Tigris river.

Samples of drinking water were collected from plant studied for the period from November 2021 to July 2022. Twelve parameters were used for calculating the water quality index. These parameters are: pH, turbidity, electrical conductivity, calcium, magnesium, chloride, total hardness, alkalinity, sulfate, sodium and total dissolved solids. The Iraqi recommended Guidelines for drinking water specifications are presented in Table 1.

1. MEASUREMENT OF WATER QUALITY INDEX

The most general characteristic of the present study is the use of several water quality indices in order to ascertain the level of pollution in sone water treatment plant in the Baghdad city Al- Rusafa side.The water quality indices used in the present study are as follows:

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1.1. WEIGH AVERAGE METHOD WAV (WQI)

The WQI index can be determined by the following steps [11]:

1) In this method each parameter has been given a relative weight (Wi).
2) Computing the quality rating scale (qi) for each parameter by using the following equation:

$$qi=(Ci/Si)100 \quad (1)$$

Where:

qi= quality rating scale

Ci= concentration of each parameter in each water sample in (mg/L).

Si=Iraqi drinking water standards for each chemical parameter.

3) Computing the sub index of each parameter by using the following equation:

$$SIi=Wi\times qi \quad (2)$$

Where

SIi= is the sub index of each parameter

$$WQI = \sum SIi \quad (3)$$

1.2. THE MINISTRY AND ENVIRONMENT METHOD MNE WQI

The second water quality index is the method which is adopted by Ministry of Nature and Environment (MNE) of Mongolia [12]. In this method the number of parameters has been taken into account and all the parameters have the same weight. The selected parameters included (Ca^{+2}, Mg^{+2}, TH, Cl^-, Na^+, SO_4^{-2}, Alk, Fe^{+3} and TDS).

$$WQI = \sum(Ci/Si)/n \quad (4)$$

Where:

n= is the number of parameters

1.3. WATER QUALITY INDEX

In order to calculate the Water Quality Index, the following steps were used:

Weighting: The word weighting implies relative significance of each of the factor in the overall water quality and it depends on the permissible level in drinking water as suggested by Iraqi standard. Factors which have higher permissible limits are less harmful and have low weightings [13].

$$Wi = K/Sn \quad (1)$$

Wi - Unit weight of chemical factor, K - constant of proportionality and is given as:

$$K=1/(1/Vs1+1/Vs2+ \ldots\ldots\ldots+1/Vsn) \quad (2)$$

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Vsi - standard value of ith parameter

Rating scale: Each chemical factor has been assigned a water quality rating to calculate WQI.

$$Qi = 100\ [(Va-Vi)/\ (Vs-Vi)] \qquad (3)$$

Where,

Qi = Water quality for each parameter (i)

Va - average of measured values in the water sample for three months at one place

Vs - Standard value of ith parameter

Vi - ideal value for pure water (0 for all parameters except pH)

The above equation becomes:

$$Qi=100(Va/Vs) \qquad (4)$$

For pH: The ideal value = 7.0; Max. Permissible value = 8.5,

$$QpH = 100\ [(Va-7.0)/\ (8.5-7.0)]$$

$$WQIi=Qi*Wi \qquad (5)$$

$$\text{Water Quality Index (WQI)} = [\Sigma\ QiWi)/\Sigma Wi\ ] \qquad (6)$$

ΣWi = total unit weight of all chemical factors.

1.4. THE CCME WQI INDEX:

In the present study CCME WQI was used to calculate the water quality. This index can be determined as follows:

The F1 is called Scope which represents the percentage of variables that do not meet their objectives at least once during the interval under consideration ("failed variables"), relative to the total number of variables measured:

F1=[(Number of failed variables)/(Total number of variables)]*100

F2 is called Frequency which represents the percentage of failed tests :

F2=[(Number of failed tests)/(Total number of tests)]*100

F3 is called Amplitude, which represents the deviations of the failed tests from their objectives. It is determined as follows:

The term "Excursion" represents the number of times that certain concentration is different from the objective. When the value of the test is less than the objective, Excursion is given by:

Excursion=[(Failed Test value)/Objective]-1

When test value is greater than the objective, Excursion is given by:

Excursion=[Objective/(Failed Test value)]-1

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The sum of exertions of individual tests divided by the total number of tests is called normalized sum of excursions (*nse*) and is computed as follows:

$$nse = \left[\frac{\sum_{i=1}^{n} \text{Excursion}}{\text{Failed Test value}}\right] - 1$$

F3 is a function of nse and is given by:

$$F3 = \left[\frac{\text{nse}}{0.01 + 0.01\text{nse}}\right] - 1$$

Finally CCME WQI is calculated as follows:

$$CCMEWQI = 100 - \left[\frac{\sqrt{F_1^2 + F_2^2 + F_3^2}}{1.732}\right]$$

The water quality is ranked according to CCME WQI as stated in Table(Bharti and Katyal, 2011)

1.5. BRITISH COLUMBIA WATER QUALITY INDEX (*BCWQI*).

This index was developed by the Canadian Ministry of Environ-ment as an increasing index. For water quality evaluation, where water quality parameters are measured and their violation is determined by comparison with a predefined limit. The *BCWQI* makes possible the classification on the basis of all existing measurement parameters(15). The formula is expressed as:

0.5

$$\text{BCWQI} = \left[\frac{F_1^2 + F_2^2}{1.453}\right]$$

Where: *F*1 (scope) = number of the non-succeeded varia-bles to the total number of the variables; *F*2 (frequency) = number of the unsuccessful tests to the total number of tests.

$$F1 = \frac{NF}{TNV} * 100$$

$$F2 = \frac{NFT}{TNT} * 100$$

Where: *NF* = number of the failed variables, *TNV* = total number of variables, *NFT* = number of the failed test; *TNT* = total number of the tests.

In the *BCWQI* formula 1.453 is the constant used to give confidence to the scale index number from 0 to 100. The degree of the confidence in the *BCWQI* depends on the repeated sampling procedure [POONAM 2013].

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In order to calculate the *WQI*, the Iraqi drinking water standard values corresponding to the measured parameters were used, as shown in Table 1.

Table 1. Iraqi drinking water standards [17],[18],[19],[20],[21],[22],[23]

parameter	unit	Iraqi standard
pH	-	6.5-8.5
Alkalinity	mg/L	125-200
Total Hardness as CaCO3	mg/L	500
Magnesium (Mg^{+2})	mg/L	100
Calcium (Ca^{+2})	mg/L	150
Sodium (Na^{+})	mg/L	200
Chloride (Cl-)	mg/L	350
Sulphate SO_4^{-2}	mg/L	400
Turbidity	NTU	5
Conductivity	µs/cm	2000
TDS	mg/L	1000

Table 2. Water quality classification based on WAV method

WQI value	Water Quality
0-25	Excellent
26-50	Good water
51-75	Poor water
76-100	Very poor water
>100	Water unsuitable for drinking

Table 3. Water quality classification based on MNE method

WQI value	Water Quality
≤0.3	Very clean
0.31-0.89	clean
0.9-2.49	Slightly polluted
2.5-3.99	Moderately polluted
4-5.99	Heavily polluted
≥6.0	Dirty water

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Table 4. Water quality index scale

WQI	Description
0-25	Excellent
26-50	Good
51-75	Moderately polluted
76-100	severely polluted
>100	unfit for human consumption

Table 5. The water quality is ranked according to CCME and BCWQI WQI as stated.

CWQI Categories	Ranks
95-100	Excellent
80-94	Good
65-79	Fair
45-64	Marginal

RESULTS AND ANALYSIS

The values of WAV WQI index of water treatment pant are between (29.91-36.98) for treated water, and those results showed that indicators of treated water of water treatment plant studied were good, while the highest value was (36.98) in January due to the high concentration of Cl- and Mg+2. Also, the results showed that the values of the MNE WQI of water treatment plant studied are between (0.298-0.35) for the treated water and all the values indicated that the treated water is clean, but gives very clean according to MNE method classification in June month, while the highest value was (0.35) in January due to the high concentration of Cl- and Mg+2. The values of index of (weighted method) ranged between (33.19-48.44) for the treated water. The results showed that all index values of treated water of water treatment plant studied were good, according to WQI method classification. The highest value found was(48.44) in July, due to the high concentration of TH,Ph and Na. The obtained value of the Canadian index was (99.99) for the treated water for all months studied, and the such value indicates that the treated water is excellent according to CCME method classification. Also, the value of the British index was (100) for the treated water for all months studied, and such value indicates that the treated water is excellent according to BCWQI method classification. The statistical program which is called STATISTICA,version (25) was used concluding statistical equations of water quality index in terms of time for all plant studied. The coefficient of determination (R^2) is calculated to find the degree of credibility of the equations obtained, which is as follows of Al-Rusafa Water Treatment Plant as show in the figer.

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In which, WAV is,and t is in(month).The cofficent of determination R^2 is equal to 0.855.

$$WAV=42.45-5.18\ t +0.71\ (t)^2 -0.03\ (t)^3 \tag{1}$$

In which, MNE is,and t is in(month).The cofficent of determination R^2 is equal to 0.801.

$$MNE=40.08-4.47\ t +0.67\ (t)^2 -0.03\ (t)^3 \tag{2}$$

In which, WQI is,and t is in(month).The cofficent of determination R^2 is equal to 0.709.

$$WQI=47.8-9.02\ t +2.03\ (t)\ 2 -0.11\ (t)3 \tag{3}$$

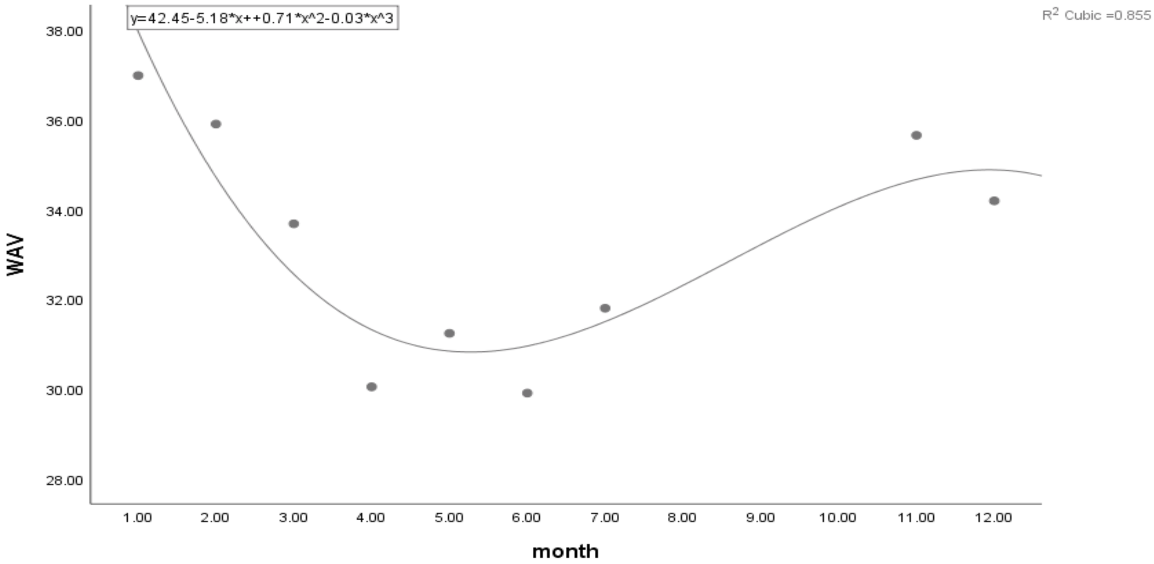

Figure. 1. Statistical Relationship of WAV Index and Time for Al-Rusafa Water Treatment Plant.

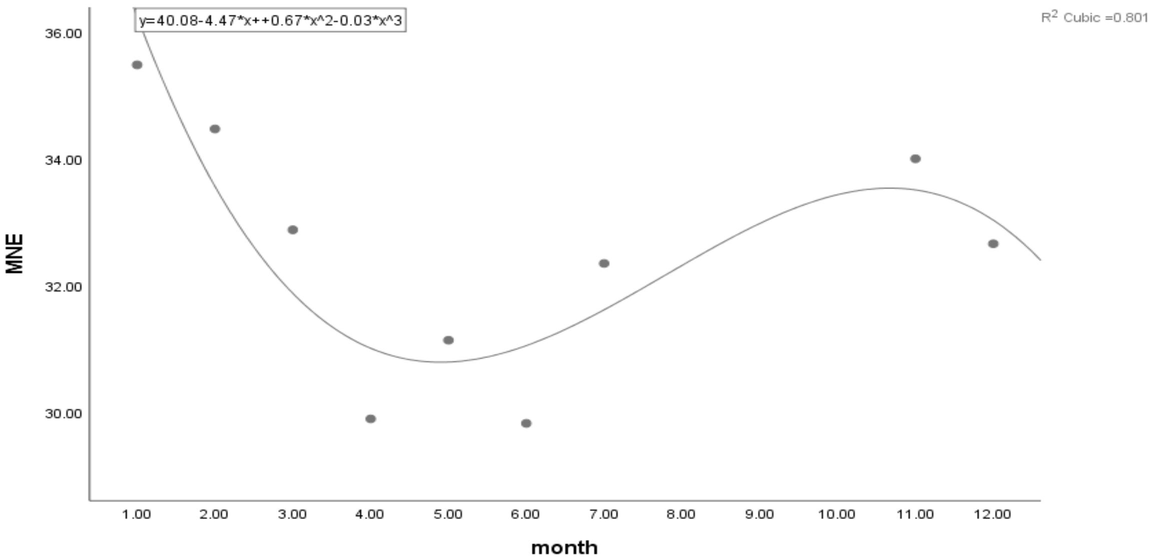

Figure 2. Statistical Relationship of MNE Index and Time for Al-Rusafa Water Treatment Plant.

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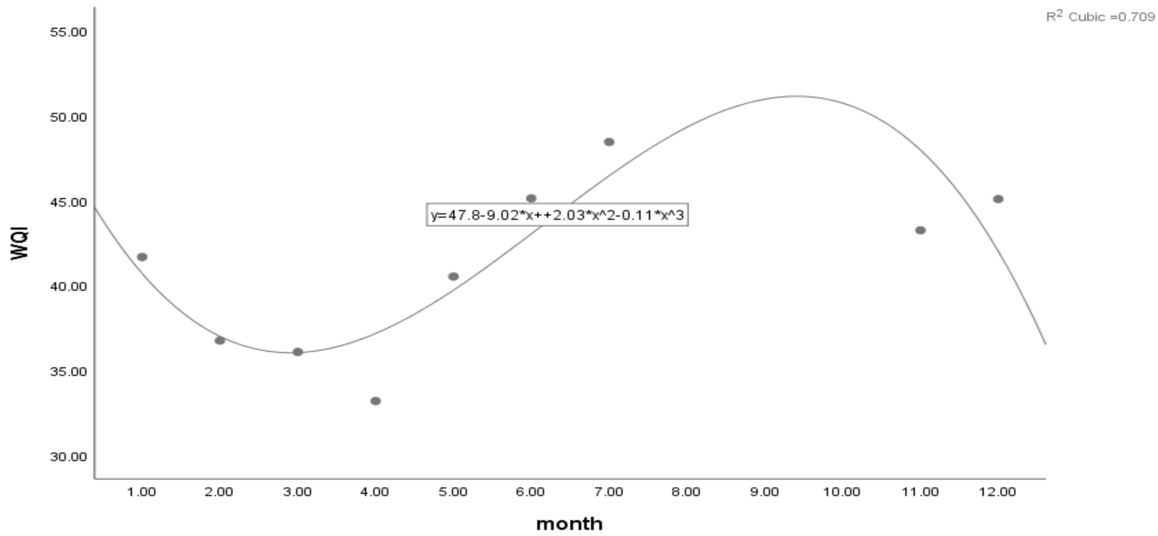

Figure 3. Statistical Relationship of WQI Index and Time for Al-Rusafa Water Treatment Plant.

In which, CCME is,and t is in(month)of all Water Treatment Plant:

$$CCME=0*t+99.99 \tag{4}$$

In which, BCWQI is,and t is in(month)of all Water Treatment Plant:

$$BCWQI=0*t+100 \tag{5}$$

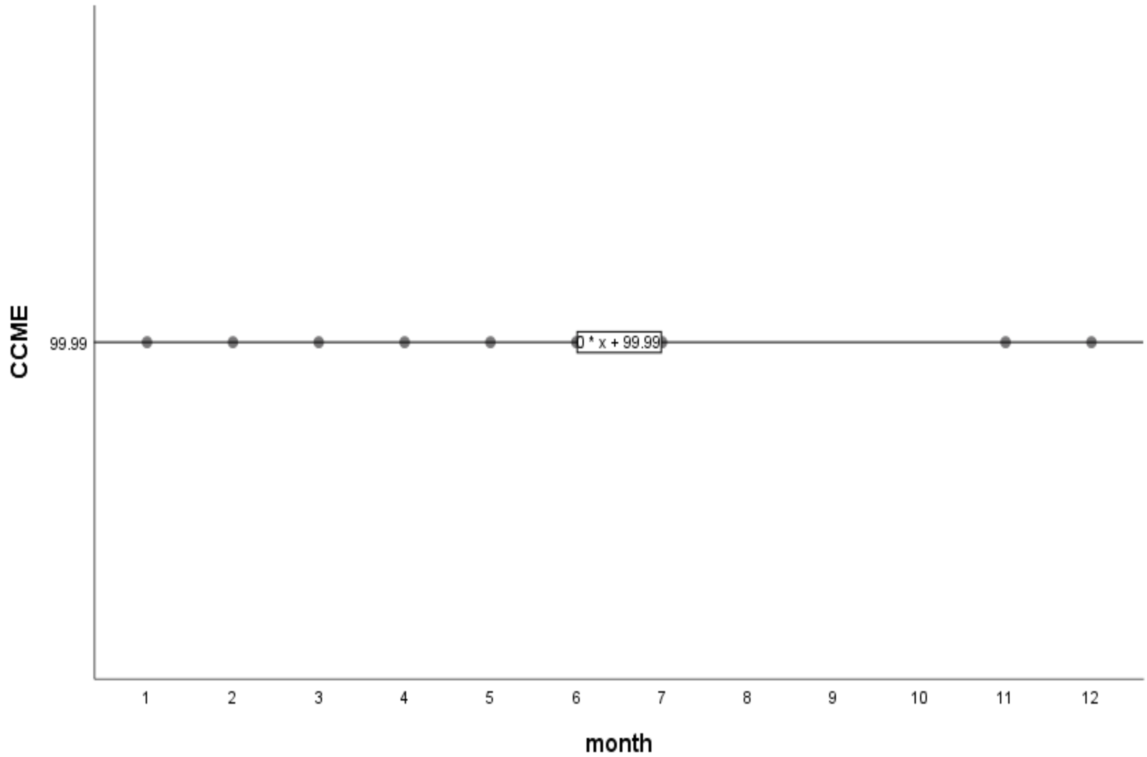

Figure 4. Statistical Relationship of CCME Index and Time for Al-Rusafa Water Treatment Plant

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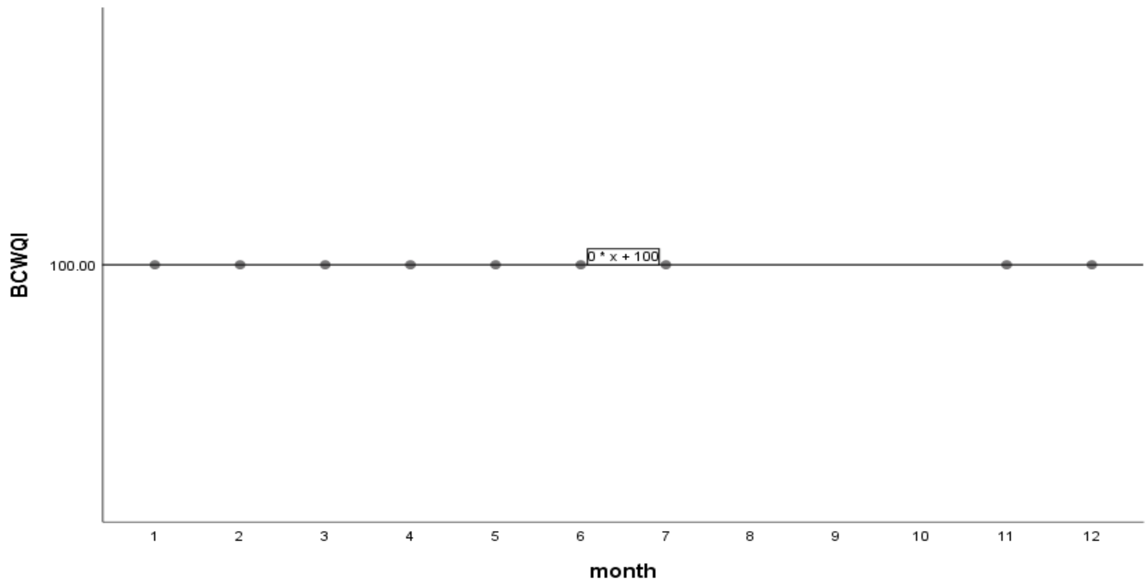

Figure 5. Statistical Relationship of BCWQI Index and Time for Al-Rusafa Water Treatment Plant.

CONCLUSIONS

The results showed that the treated water quality from the water treatment plant studies was good according to the WAV classification. All values of MNE index for treated water from all water treatment plant studied showed that the water is clean but in April, the water quality was very clean according to MNE method classification. All values of WQI for treated water produced from water treatment plant showed that treated water is good water WQI method classification. The results showed that the water quality for treated water was excellent according to the CCME classification. Finally the results showed excellent water quality can be obtained for treated water based on the BCWQI classification.

Table 6. Average monthly test results for treated water produced from Al-Rusafa WTP.(16)

Parameter	unit	Value in test								
		Nov 2021	Dec 2021	Jan 2022	Feb 2022	Mar 2022	Apr 2022	May 2022	Jun 2022	Jul 2022
Turbidity	NTU	2.8	1.9	1.7	1.1	1.1	0.9	1.5	1.8	2.0
TH	mg·dm-3	312	301	331	325	299	258	257	254	264
PH	-	7.88	7.87	7.81	7.9	7.88	7.87	7.89	7.94	7.98
TDS	mg·dm-3	589	558	585	556	516	456	496	458	471
alk	mg·dm-3	144	141	148	153	152	148	139	139	141
Cl-	mg·dm-3	71	68	73	67	61	53	64	55	62
Mg2+	mg·dm-3	31	29	33	32	28	23	22	23	24
Fe2+	mg·dm-3	0.11	0.04	0.04	0.03	0.05	0.04	0.06	0.05	0.07

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NO3 -	mg·dm-3	0.42	0.33	0.67	0.43	0.78	0.99	1.16	1.01	1.02
NH3 +	mg·dm-3	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Calcium (Ca^{+2})	mg/L	74	73	78	78	74	66	66	64	66
Sodium (Na^{+})	mg/L	70.6	69.2	80	79	93	102	106	104	131
Sulfate (SO4)	mg/L	195	185	195	188	173	155	168	154	160
EC	µs/cm	879	833	873	830	770	681	741	683	704

Table 7. Water quality indices for Al-Rusafa WTP

WQI	11/2021	12/2021	1/2022	2/2022	3/2022	4/2022	5/2022	6/2022	7/2022
WAV	35.6532	34.1972	36.9857	35.9043	33.6845	30.0593	31.2486	29.9148	31.8064
MNE	0.3400	0.3266	0.3548	0.3447	0.3288	0.2990	0.3114	0.2983	0.3235
wqi	43.246	45.088	41.679	36.753	36.083	33.195	40.525	45.129	48.441
CCME	99.99	99.99	99.99	99.99	99.99	99.99	99.99	99.99	99.99
BCWQI	100	100	100	100	100	100	100	100	100

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Sensitivity analysis and optimization of nutrient removal in a full-scale plant based on a GPS-X mode

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Keywords:
GPS-X model, Sensitivity analysis, optimization, external carbon source, rbCOD.

ABSTRACT

Improving the operational performance of wastewater treatment plants can be effectively approached by means of model simulation. GPS-X model was used in this study. Calibration and validation of the model were carried out, with various sensitive parameters subject to modification, with results found within the prescribed parameters for R and RMSE. Sensitivity analysis then indicated that the most important factor for reducing nitrogen and phosphorous concentrations was the readily biodegradable fraction; thus, the IR, RAS ratio, DO, and WAS flows were reduced from 3% to 1%, from 100 to 20%, from 3.5 to 2 mg/L, and from 3,500 to 1,000 m3/d, respectively, producing an optimization that saved 688.4 Kw.h in energy and gave a sludge reduction of 32%. These results showed that an IR percentage of 3% is not appropriate. Decreased rbCOD thus necessitates a chemical upgrade, which was implemented in this case by means of adding an external carbon source, represented by acetic acid, propionic acid, methanol, and glycerol, with good results. These additions led to improvements in terms of reduced TN and TP by suitable ratios. The best external carbon source was thus determined to be methanol, while glycerol was less effective than the others. The process of pre-denitrification was compared with the post-denitrification process by means of the addition of methanol as an external carbon source, which gave good results for the reduction of TN in the post-denitrification process, by up to 80%; however, the effect on other pollutants was to increase concentrations.

1. INTRODUCTION

During this era, climate change and global warming negatively effects on many sectors, such as hydrological cycle [1], particularly temperature rates [2], [3], irrigation field [4], ground water [5] and wastewater treatment plant [6]. Therefore, using computerized modeling at wastewater treatment plant and other sectors has high attraction [7], [8]. Wastewater treatment plants (WWTPs) play a major role in maintaining aquatic environments by reducing pollutants within acceptable limits [9]. The activated sludge process (ASP) is one of the most widely used processes globally, and it is thus indispensable for removing pollutants in wastewater. However, activated sludge is a complex system, with long time scales and multivariate structures within the internal process kinetics of reactors [10]. Even experienced engineers and operators of wastewater treatment plants are thus limited in terms of making effective improvements to such plants, as any amendments take a long time to produce results, preventing ongoing tweaks. Fortunately, some excellent models have been developed to simulate wastewater treatment plants, which simulate most of the complex biological processes, However, the GPS-X model is considered by many to be the superior model, as it offers a highly advanced graphical interface that facilitates the establishment of a plant design and clearly explains the results. GPS-X simulation has thus been used in many improvements, upgrades, designs, and studies for wastewater treatment plants [11]. improved nitrogen removal in an A2/O system using a GPS-X model [12]. Also, improved Tehran's sewer treatment plant using a GPS-X model; after calibration and verification of the model, the results were very good, and the study recommended the adoption of such models more widely in the future.

In these models, such calibration and verification processes are necessary to produce realistic results. To perfectly mimic the work of the plant and to calibrate it, the rates of the reactions must be adjusted using accurate kinetic properties, while the quantities of materials produced and consumed inside the reactor must be determined by means of the stoichiometric measurement of the relevant reactions. The kinetics and stoichiometric measurements in the titration and verification process must thus be considered in order to analyse the microbial transformation process during the removal of organic matter and nutrients. In addition, during a simulation process using a GPS-X model, many hypothetical values may affect the output values as compared with the real values, and these must thus be modified, with the model then recalibrated and the WWTP simulated. Before adjustments are made to the default values however, assessment of the many factors must be done, as some are more sensitive and others less sensitive to change, and factors that do not affect simulation results may be safely left alone [13].

One of the most widespread activated sludge systems is A2/O. Standard efficiencies of removing COD, TP, and TN in the A2/O system are approximately 91, 56, and 48%, respectively. Based on this, the efficiency of handling phosphorus and nitrogen is lower in these systems, suggesting that improvements are required. In general, the molar concentration, sludge age, dissolved oxygen, and internal recycling are the most sensitive parameters with respect to nitrogen and phosphorous [14].

In Karbala's wastewater, the concentrations of phosphorous and nitrogen are often outside of the required parameters, due to a lack of concentration of rbCOD; this indicates that improvements to the plant are required to reduce the concentrations of these nutrients to within the required parameters. This study thus aimed to determine the most important critical parameters affecting the performance of the relevant A2/O system within the GPS-X model in order to implement the improvement processes required; the aim was to reduce nitrogen and phosphorous concentrations by adding an external carbon

.2. Materials and methods

2.1 Karbala WWTP

This study was conducted in relation to the Karbala Sewage Treatment Plant, a plant located about 100 km to the south of the Iraqi capital Baghdad; its coordinates are 32.525590°N and 44.074909°E. Karbala sewage treatment plant uses conventional activated sludge technology, with nutrient removal by means of an A2/O system. The Karbala WWTP operates as shown in the data provided in Table 1, with five treatment stages as shown in Figure 1. The first stage (preliminary treatment) includes coarse and fine screening and a grit and oil removal chamber. The second stage is the primary treatment stage, and this is carried out by means of primary sedimentation basins. The third stage includes secondary treatment, including the removal of nutrients, and it thus includes anaerobic, anoxic, oxic, and final clarifier tanks. The fourth stage includes tertiary treatment by means of chemical disinfection through a chlorination tank, while the fifth stage includes sludge treatment. In this last stage, the plant thus utilises the following units: gravity thickener, mechanical thickener, anaerobic digester, and drying beds.

Table 1. The parameters of the Karbala WWTP.

Parameter	Value
Flowrate	60,000 m^3/d
V. anaerobic reactor	8736 m^3
V. anoxic reactor	14112 m^3
V. aeration reactor	54054 m^3
Surface area for primary sedimentation	3216 m^2
Surface area for final clarifier	6432 m^2
V. anaerobic digester	13600 m^3

Surface area for gravity thickener	400 m^2
Surface area for mechanical thickener	60 m^2
Volume chlorination tank	3000 m^3
Surface area for drying bed	50,000 m^2
Dissolved Oxygen	2-3 mg/L
Mixed liquor suspended solids	2000-4000
SLR	3.6 kg mlss/m^2h
HLR	15.5 m^3/m^2d
WAS	3000-4000 m^3/d
RAS	50000-60000 m^3/d
F/M	0.16
IR	3
SVI	85 mL/g

Figure 1. Karbala WWTP

2.2 GPS-X Model Calibration and Validation

As most pollutants remain constant throughout the year, with only a slight discrepancy, the autumn and winter seasons were adopted as calibration data, and spring and summer sets were used as validation. The model was thus first calibrated, and then verified based on those results not entered during calibration. After obtaining a close match between the model's output and reality, the remaining disparity was statistically examined by means of the root mean square error (RMSE), and correlation coefficient (R) equations 1 and 2 [5].

$$R = \overline{\frac{(C_O - \overline{C_O})(C_P - \overline{C_P})}{\sigma_{C_O}\sigma_{C_P}}} \quad (1)$$

$$\mathrm{RMSE} = \overline{\frac{(C_O - C_P)^2}{\overline{C_O}\ \ \overline{C_P}}} \quad (2)$$

where Co is the actual data, is the modeled data, is the average of actual data, is the average of modeled data, and σ is the standard deviation over the full dataset. These statistical criteria reasonable limits are $1 \geq R > 0.8$ and $0 \leq \mathrm{RMSE} < 1.5$. Figure 5 depicts the schematic processes for systematic model calibration and validation as used in this investigation [5].

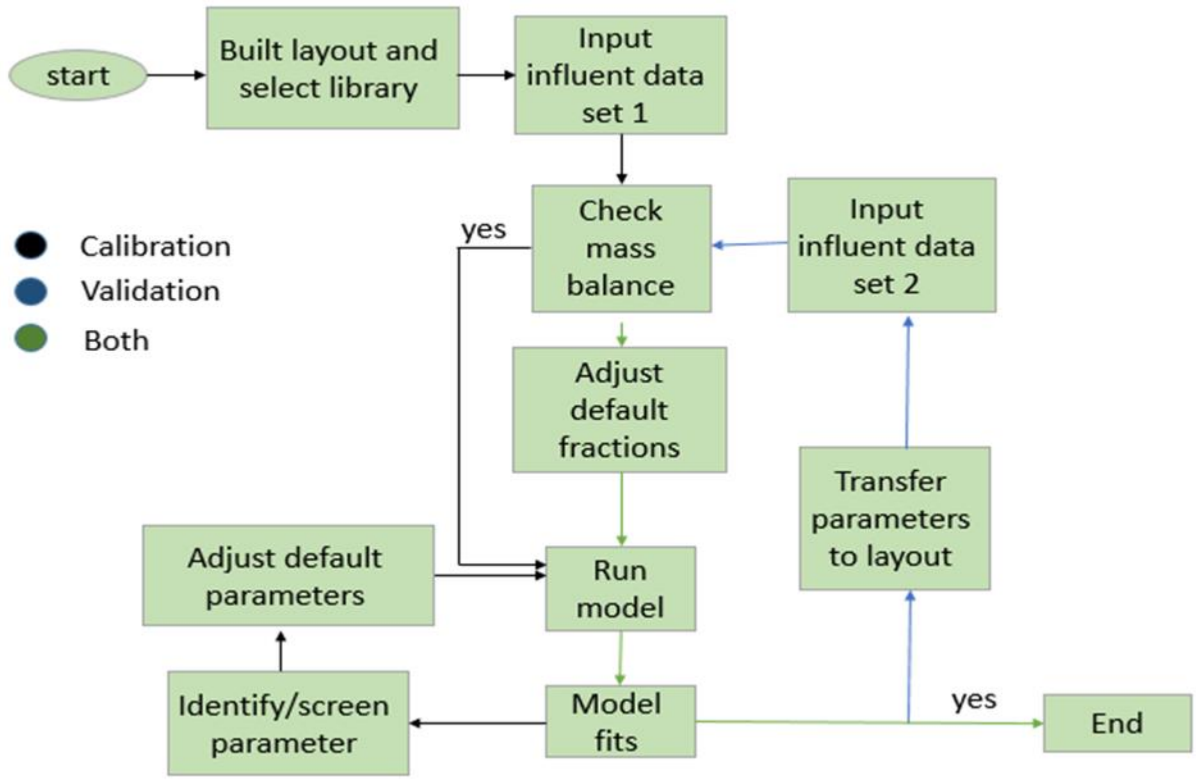

Figure 2. procedure calibration and validation

2.3 Sensitivity analysis

After the model was calibrated and validated, those sensitive parameters that had a positive or negative impact on the work of the plant were identified. To determine the most sensitive values with respect to the performance of the plant the simulation outputs were monitored while the values of various parameters were manipulated. The sensitivity of a plant's work may also be affected by operational factors; thus, after the construction of the Karbala sewage treatment plant within the GPS-X model, the default values for kinetic and stoichiometric parameters were used. The results were outside the required limits, so all sensitive parameters were then modified, and sensitivity analysis was applied to develop an understanding of the extent to which these parameters affect the fate and behaviour of pollutants inside the plant [15].

2.4 Research Framework and Process Optimisation

The research technique is the most significant aspect of any study, as this explains the complete strategy for reaching its goals. Figure 6 shows the research framework applied in the current study. The improvement processes applied in this research were used in two scenarios: the first implied operational improvement by manipulating the operational factors of the plant and the other referenced chemical upgrading by adding an external carbon source.

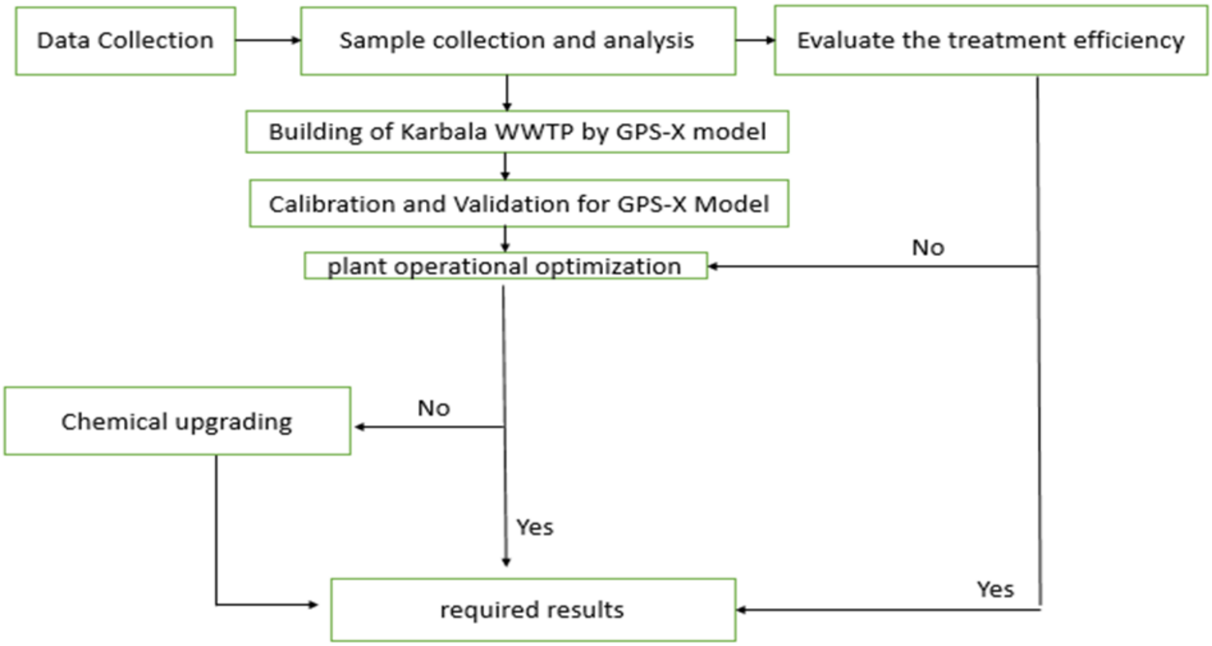

Figure 3. study framework

3. Results and discussion

3.1 Karbala sewage treatment plant performance

Evaluation of the performance efficiency of the Karbala sewage treatment plant was done based on the percentage of pollutants removed from the plant. After the removal of the relevant percentage of pollutants, concentrations within the required parameters should remain. After the collection of all sample data and averaging over the full year of the wastewater influent and effluent, the plant efficiency, as shown in Table 4, was obtained based on Equation 1, the efficiency Table 2. was obtained.

$$Removal\ Efficiency = \frac{Cin - Ceff}{Cin} \times 100\% \qquad (3)$$

Where: % = Removal efficiency, C_{in} = Concentration of pollutant in the influent (mg/L). C_{eff} = Concentration of pollutant in the effluent (mg/L).

Table 2. Summary of Karbala WWTP treatment efficiency

Parameter	Inlet, mg/l	Outlet, mg/l	Efficiency (%)
COD	255	26	90
BOD_5	150	10	93
rbCOD	50	0	100
TSS	181	14	92
TN	45	34	24
NO_3	0	32	-
NH_4^+	18	0.2	98
TP	9	5.8	35
PO_4-P	4.5	3.5	22
H_2S	35	0.3	99
Oil & grease	45	3	93
DO	0	3.5	-
SO_4	850	860	-

the organic matter (COD and BOD) was removed excellently, with efficiency of removal of over than 90%. Microorganisms, particularly heterotrophic bacteria, were seen to contribute to the elimination of organic matter, where the required dissolved oxygen concentrations were available and adequate mixing inside the reactor, which allows decomposition of these compounds and their transformation into fixed substances, exists [16]. Good removal within the secondary sedimentation basins was seen in terms of suspended solids (TSS), wit efficiency reaching more than 90%. A very low concentration of rbCOD was also observed in the wastewater of Karbala city, however, which affected the removal of nutrients [17] .with the percentages of removal of nitrogen and phosphorous reaching only 24 and 35%, respectively. The removal of nitrogen and phosphorous may also be reflected in the high levels of dissolved oxygen concentrations returned with IR and RAS flows [18]. Due to the nature of the gypsum soil and the high levels of groundwater in Karbala city, large quantities of sulphate enter the network through percolation, which contributes to the increase of such concentrations. Karbala sewage treatment plant, as an A2/O system, cannot remove sulphates, instead contributing to the elimination of hydrogen sulphide gas by means of aeration, mixing, and sorption, factors that facilitate the removal of hydrogen sulphide in the plant by more than 98% [15]. The nitrification process as observed in the Karbala sewage treatment plant works extremely well, however, with ammonia oxidised at a rate of over 95%; however, the denitrification process in the Karbala sewage treatment plant does not work well due to a lack of suitable organic substrate. Fat removal is excellent, with the gravel, sand, and fat removal unit working very well.

3.2 Model Calibration for Karbala WWTP

When using simulation systems to help shorten the time for improvement works, it is necessary to ensure that laboratory tests, calibration, and verification are carried out in a such way as to ensure that the model's outputs are as close as possible to those seen in reality. In this study, the model was calibrated using the average results for effluent through the Karbala sewage treatment plant in the autumn and winter seasons, being then validated using the spring and summer season data. The model was run utilising default data initially, which produced results that diverged significantly from the actual values [19]. Some necessary parameters that significantly affected these results were thus modified as shown in Tables 5 and 6. The results of these change were generally good as compared with the predicted and actual results, as shown in Figure 7; however, it was observed that the TSS results of less than 5 mg/L were less reflective of reality. Several sensitive parameters were then modified in GPS-X Model of the secondary sedimentation basin, with the feeding point from the bottom modified from the default 1 m to the real value of 4.3 m, and the maximum vesilind settling velocity changed from 410 m/d to 358 m/d, as these two parameters were more sensitive and dimensional than other operational parameters. It was also noted that the concentrations of COD and BOD were higher than in reality, causing certain sensitive parameters to be changed as referred to in Tables 5 and 6 to ensure these concentrations were reduced appropriately. Phosphates were also, by default, higher than the real values; thus, adjustments to Phosphorus Fractions were made to ensure the predicted results were better fitted to the real ones. The default nitrate concentrations were, in contrast, much lower than in reality, a situation amended by adjusting sensitive parameters related to the kinetics of ammonia and nitrates, with Nitrogen Fractions and Active Heterotrophic Biomass being the key factors permitting fitting of the predicted nitrate concentration value to reality.

Table 3. GPS-X Input stoichiometry parameters (default & adjustment) based on GPS-X influent advisor

Influent Stoichiometry Composition			GPS-X Default	Calibration	Validation
Classification Parameter	Parameter	Unit		autumn and winter average	spring and summer average
Influent Fractions	i_{vt}	gVSS/gTSS	0.75	0.71	0.70
	i_{cv}	gCOD/gVSS	1.8	1.51	1.53
Organic Fractions	X_{BA}	-	0	0.051	0.048
	X_{BH}	-	0	0.054	0.055
	X_i	-	0.13	0.011	0.012
	S_i	-	0.05	0.017	0.018
	S_S	-	0.2	0.019	0.021
Nitrogen Fractions	S_{nh}	-	0.9	0.61	0.62
	nS_i	gN/gCOD	0.05	0.05	0.05
	nX_i	gN/gCOD	0.05	0.001	0.001
Phosphorus Fractions	pS_i	gP/gCOD	0.01	0.05	0.05
	pX_i	gP/gCOD	0.01	0.05	0.05

Table 4. The stoichiometry and kinetic parameters of the A2/O GPS-X default and adjusted models are similar for calibration and validation results.

Influent Stoichiometry Composition			GPS-X Default	Calibration	Validation
Classification Parameter	Parameter	Unit		autumn and winter average	spring and summer average
Physical	v	m3	1000	54054	54054
	d	m	4	6	6
Model Stoichiometry Parameters					
Active Heterotrophic Biomass	Y_H	gCOD/gCOD	0.666	0.19	0.2
	U_H	gCOD/gCOD	0.08	0.08	0.08
Active Autotrophic Biomass	Y_H	gCOD/gCOD	0.18	0.21	0.21
	U_H	gCOD/gCOD	0.08	0.069	0.069
Kinetic Parameters					
Active Heterotrophic Biomass	$\mu_{max,H}$	1/d	3.2	0.76	0.78
	b_h	1/d	0.62	0.48	0.5
Active Autotrophic Biomass	$\mu_{max,A}$	1/d	0.9	0.95	0.95
	K_{NH}	mgN/L	0.7	0.5	0.5
Hydrolysis	k_h	1/d	3	5	5
	Kx	gCOD/gCOD	0.1	0.03	0.03

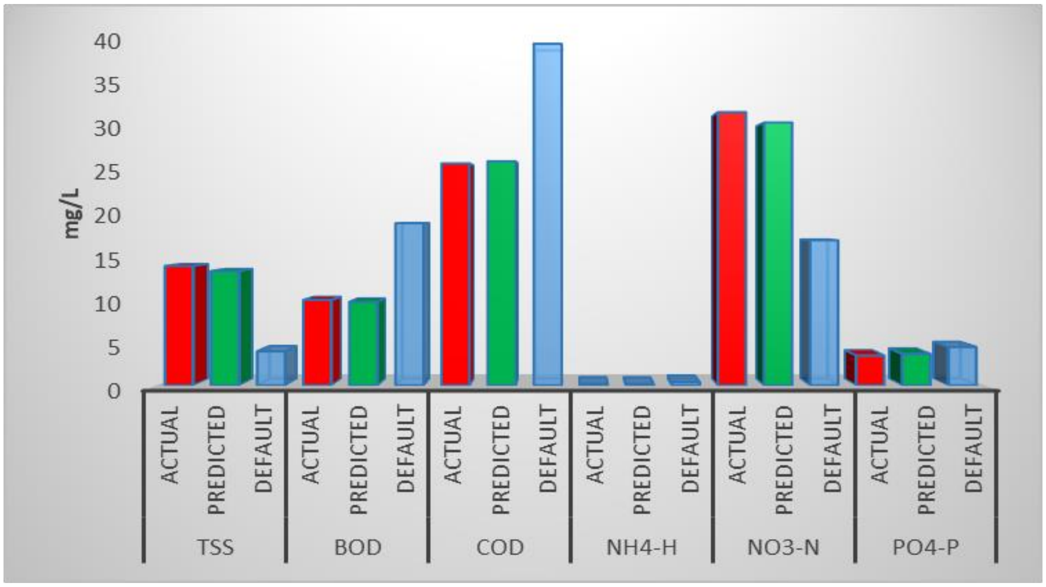

Figure 4. The calibration of the actual, the predicted, and default values

3.3 Model validation for Karbala WWTP

The next task after calibration process was the validation process, which requires the results to be as close as possible to the actual values of relevant results not included in the calibration process. It was noted that changing some kinetic and stoichiometry parameters did not significantly affect the results 8, and a small discrepancy between calibration and verification was seen due to moderate concentration of pollutants throughout the year. The process of calibration and validation, after adjusting the most sensitive parameters, produced results within the required RMSE and R ranges, however, Table 5.

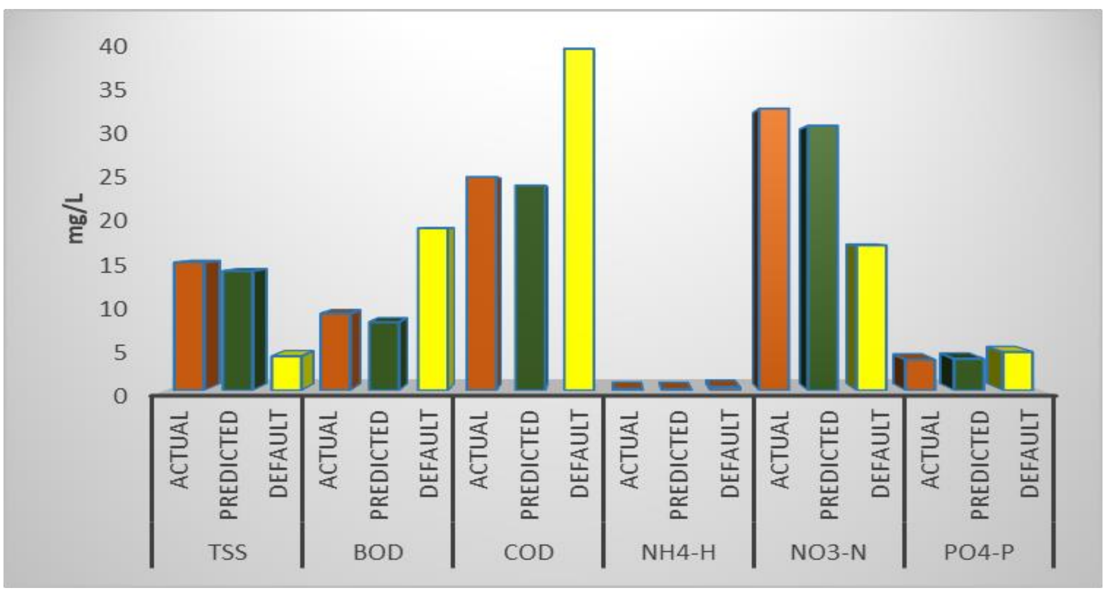

Figure 5. The validation of the actual, the predicted, and default values

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Table 5. R and RMSE values after adjustment for calibration and validation

Parameter	R-value for autumn and winter average	RMSE value for autumn and winter average	R-value for spring and summer average	RMSE value for spring and summer average
TSS	0.84	0.011	0.87	0.011
BOD	0.87	0.082	0.88	0.072
COD	0.89	0.021	0.9	0.17
NH_4^+-N	0.9	0.022	0.86	0.021
NO_2^--N	0.84	0.027	0.85	0.026
NO_3^--N	0.83	0.138	0.82	0.136
PO_4-P	0.87	0.011	0.86	0.012

3.4 Sensitivity analysis

Conventional activated sludge systems are affected by several sensitive factors, the most important of which were identified using the calibration and validation process discussed. Some parameters in the GPS-X Model did not affect the results of calibration and validation, while other parameters affected these only slightly; the study thus focused on the most sensitive parameters for analysis, in order to determine the extent of their impact on improvement and upgrading processes [6].

Figure 9 shows the effect of dissolved oxygen concentration on the effluent of the plant. With an increase in the concentration of dissolved oxygen, the concentrations of COD and BOD decreased due to the oxidation of organic materials inside the cell and their transformation into stabilisers [20]. However, when the dissolved oxygen increased, the production of nitrates increased due to the resulting nitrification process and endogenous respiration [21]. It was observed that when the dissolved oxygen concentration reached 1.5 mg/L, this offered effective treatment for the given organic substrate and ammonia levels. It was also observed, based on analysing the sensitivity of the model with respect to dissolved oxygen, that after a concentration of 2 mg/L is reached, no benefit accrues from in increasing the concentration.

The main food source for phosphorous bacteria is rbCOD, which is also a food source and an electron donor for nitrate reduction.

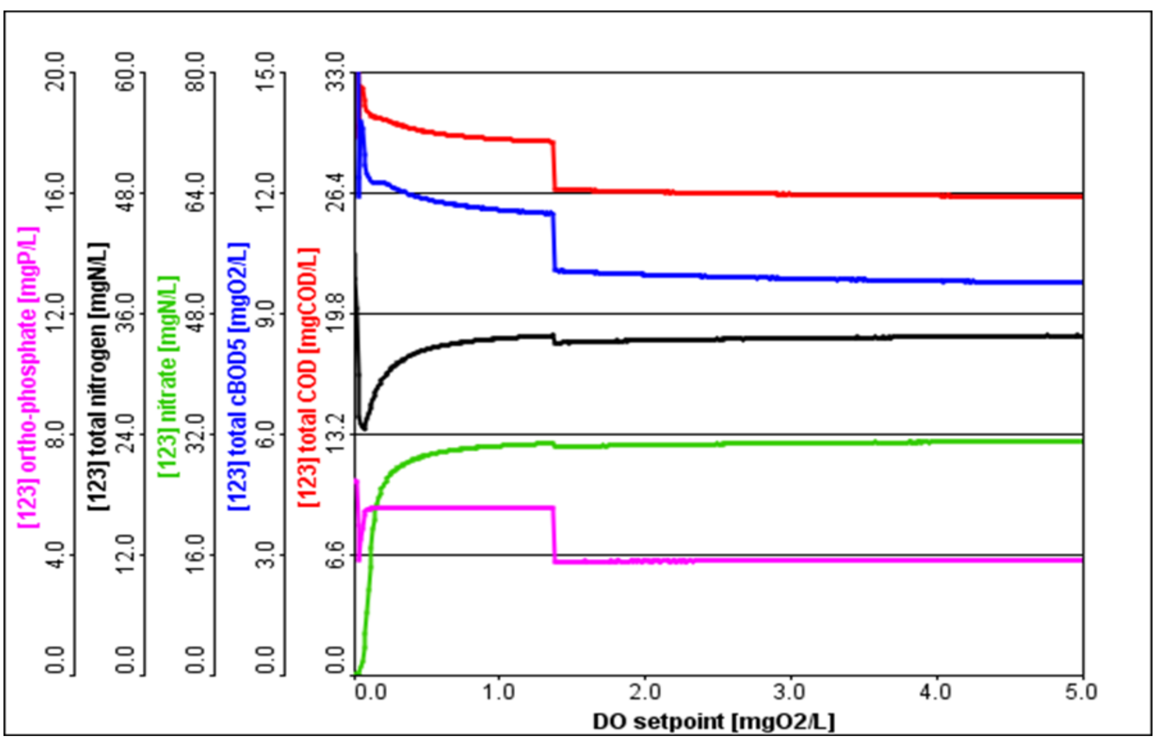

Figure 6. Effect of dissolved oxygen concentration on pollutants at the effluent plant

The effects of removing phosphates and nitrates with respect to this compound may lead to an imbalance in the removal of these nutrients, and this parameter is very sensitive to the removal of nutrients [22]. In the sewage water of Karbala, the levels of this pollutant are low, and it may thus not help remove nutrients. Adding or increasing rbCOD concentrations may affect BOD and COD concentrations at the outlet of the plant. Figure 10 shows that the higher the rbCOD concentration, the greater the efficiency of phosphate removal and the more extensive the improvement of the nitrification and denitrification processes. Where natural concentrations of rbCOD are very low, however, an external carbon source must be added to improve the nutrient removal processes, as in the Karbala sewage treatment plant.

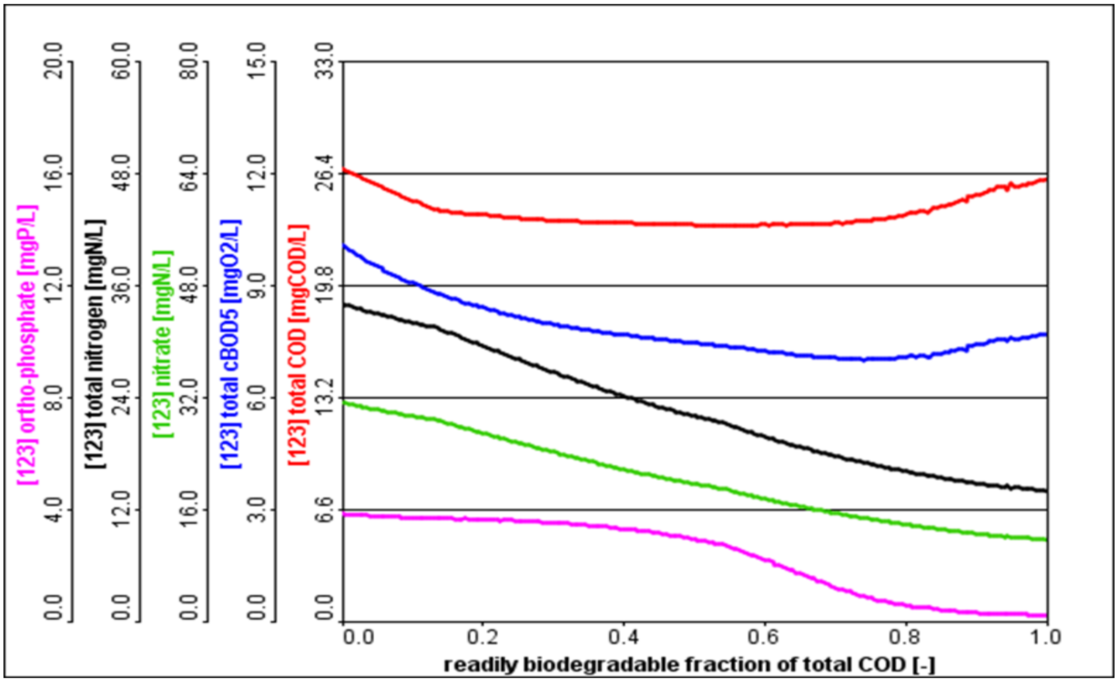

Figure 7. Effect of the readily biodegradable fraction on pollutants at the effluent plant

Predicting sewage influent flow is critical from many perspectives, including the economic, environmental, and social standpoints. Forecasting influent flow at sewage treatment plants (WWTPs) is beneficial to the development of both the operators and the facility itself. Operators can run the plant more efficiently based on reliable forecasts projected in advance, which could allow them to improve sewage planning and management at various levels within the watershed [23]. Figure 11 shows the effect of discharge on the output of the plant. As discharge increases, the hydraulic load and the organic load on the reactors of the plant both increase, which negatively affects the treatment processes and thus increases concentrations of BOD, COD, and TSS in the treated wastewater. for the Karbala sewage treatment plant, however, even if discharge reaches 150,000 m3/d, the BOD, COD, and TSS concentrations do not exceed the Iraqi limits. It may, however, be possible to adjust the mass balance promptly based on observed discharge quantity and quality, which may reduce the concentrations of pollutants in the treated wastewater. It was further observed an increase in discharge increased the efficiency of phosphate removal. Phosphate removal depends on the acetate presence of rbCOD fermentation, and for such fermentation, retention times of 0.25 to 1.0 h are generally sufficient [24]. warned against employing excessive anaerobic contact times due to the risk of secondary phosphorus release, that is, phosphorus release unrelated to acetate uptake. Bacteria do not store polyhydroxy butyrate (PHB) for further oxidation in the aerobic zone when such secondary releases occur, and phosphorus uptake and storage both require energy, as provided by polyhydroxy butyrate. In the Karbala sewage treatment plant, the contact time in the anaerobic basin is currently in excess of 3 hours, which allows secondary release of phosphorous to occur, decreasing the efficiency of phosphate removal. However, nitrates are affected only very slightly when the discharge increases.

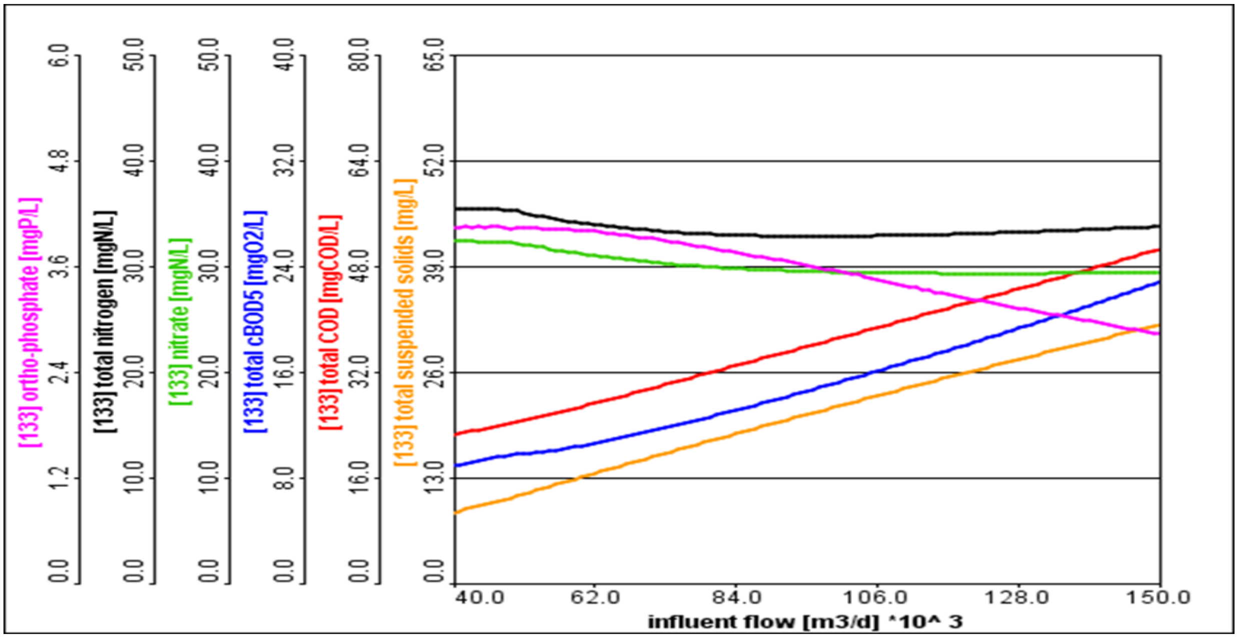

Figure 8. Effect of flowrate on pollutants at the effluent plant

Figure 8 shows the effect of RAS on the concentration of pollutants in the treated wastewater. A very slight effect was observed in pollutant concentrations even when the RAS ratio ranged from 20 to 100%. This makes it preferable to use the lowest percentage possible, so as to not waste energy and to increase MLSS concentrations in the aeration tank. Phosphates are affected by the return of sludge, however, as this flow may contain concentrations of dissolved oxygen and nitrates that affect phosphate removal efficiency [25]. The concentrations of TSS increase very slightly with an increase of RAS, due to the increase of SLR in the secondary sedimentation basin, while the concentrations of COD, BOD, and TN in the treated water improve when the percentage of RAS increases.

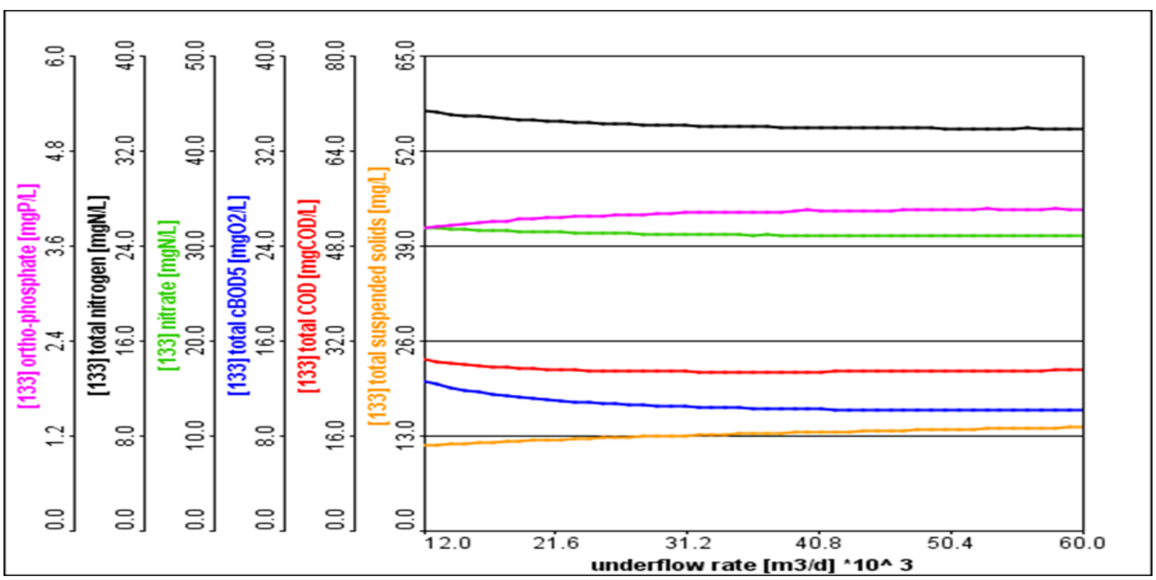

Figure 9. Effect of RAS on pollutants at the effluent plant

Examining the internal recycling process involved assessing the nitrogen mass balance in the plant. Every biochemical process in the plant requires a donor electron and an acceptor electron. In the process of denitrification, rbCOD is the donor electron and nitrate is the acceptor electron [26]. Due to the lack of rbCOD in the sewage of the city of Karbala, however, it is useless to return large quantities from the aeration basin to the anoxic basin. As Figure 13 shows, pollutants are not affected even by IRs three times greater than the influent discharge to the plant, though these pumps consume very high rates of energy and require maintenance. In addition to the large accumulation of nitrates in the anoxic basin, when nitrate concentrations increase in the system, three negative effects occur. The first effect is that when the wastewater exits with WAS into the anaerobic digester basin, it transforms the treatment system from anaerobic conditions to anoxic conditions. In terms of the second effect, when the nitrates are returned to the phosphorous removal basin with RAS, anoxic conditions thus also occur in this basin. Finally, the third effect is the excess accumulation of nitrates in the anoxic basin, which may cause inhibition of nitrate-reducing bacteria [24], [27].

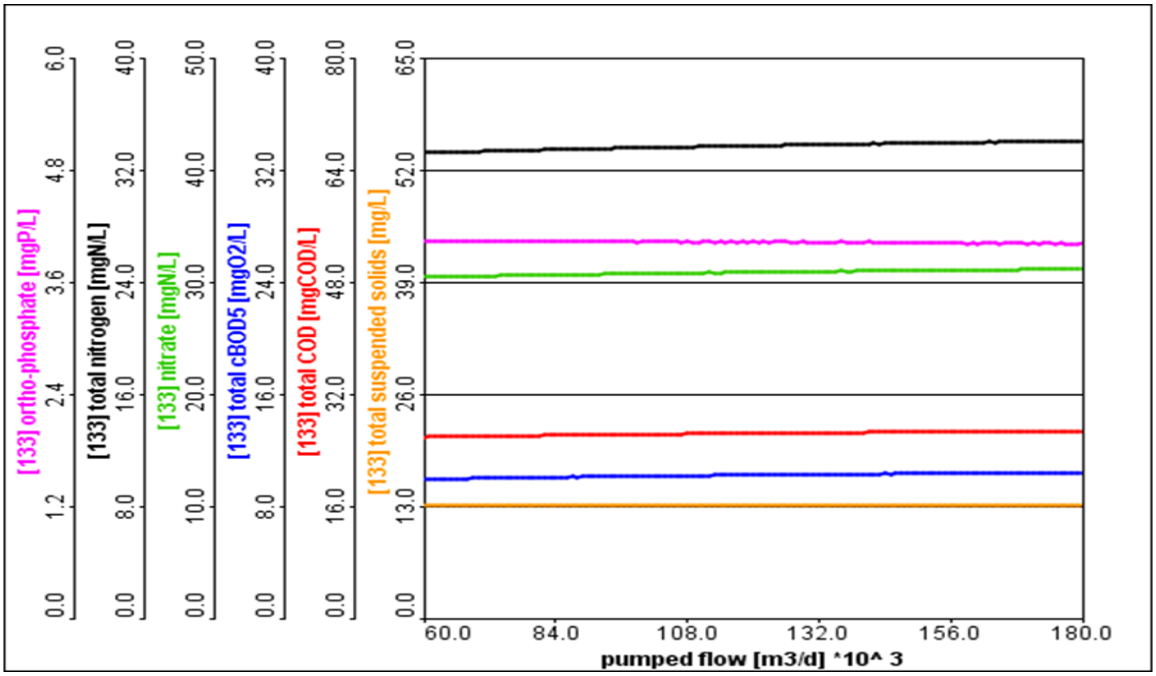

Figure 10. Effect of IR on pollutants at the effluent plant

Removing the excess sludge is necessary to reduce the concentrations of MLSS in the aeration tank in such a way as to ensure that the pollutants are treated effectively. The removal of sludge from the system affects the removal of nitrogen while improving the phosphate removal process, in addition to affecting the organic substrate With an increase in WAS, the concentrations of COD, BOD, and TN increased slightly in the treated wastewater, due to the decrease in biomass concentrations that contribute to the decomposition of organic matter and nutrients. An increase in discharge brought on a slight decrease in the TSS concentration, due to the decrease in solid loading rate in the sedimentation basin, and a slight decrease was also observed in phosphate concentrations, as phosphates are biologically removed alongside sludge that might be used in building the metabolic processes of cells [28].

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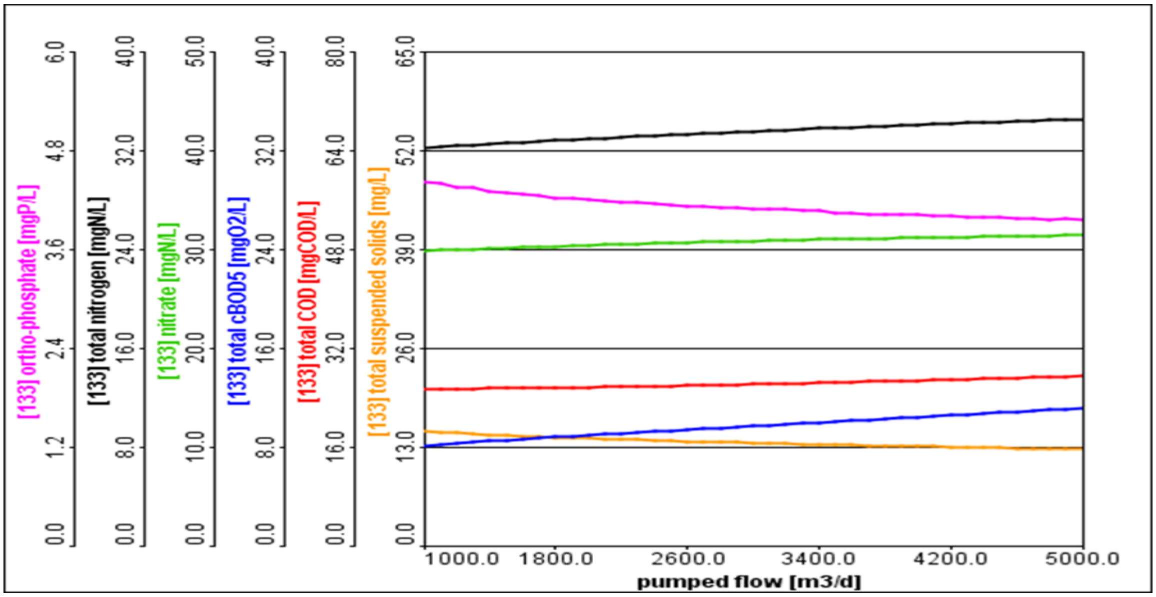

Figure 11. Effect of WAS on pollutants at the effluent plant

3.5 Chemical upgrades

3.5.1 System Upgrade using Pre-denitrification

Enhanced supplies of dissolved inorganic nitrogen and phosphorus, which drive the growth of aquatic primary producers, have been linked to increased eutrophication in estuarine ecosystems [29]. The major nitrogen forms connected with human impacts are nitrate and ammonium, and in light of the current eutrophication crisis, understanding which type of nitrogen is preferentially digested by phytoplankton in nature and how the two nitrogen groups interact is critical. Some studies have shown that nitrate and phosphate concentrations, even when relatively small, allow algae and phytoplankton to grow in large quantities [30]. Therefore, reducing the concentrations of these should contribute to reducing the prevalence of harmful plants and algae in water sources. In this study, four external carbon sources were added to find determine the effects on reducing nutrients in wastewater, to improve the denitrification process and reduce phosphate concentrations within the examined system. These compounds were acetic acid, propionic acid, methanol, and glycerol, and these materials were all added after the initial sedimentation basin and before the phosphorous removal basin figure 12.

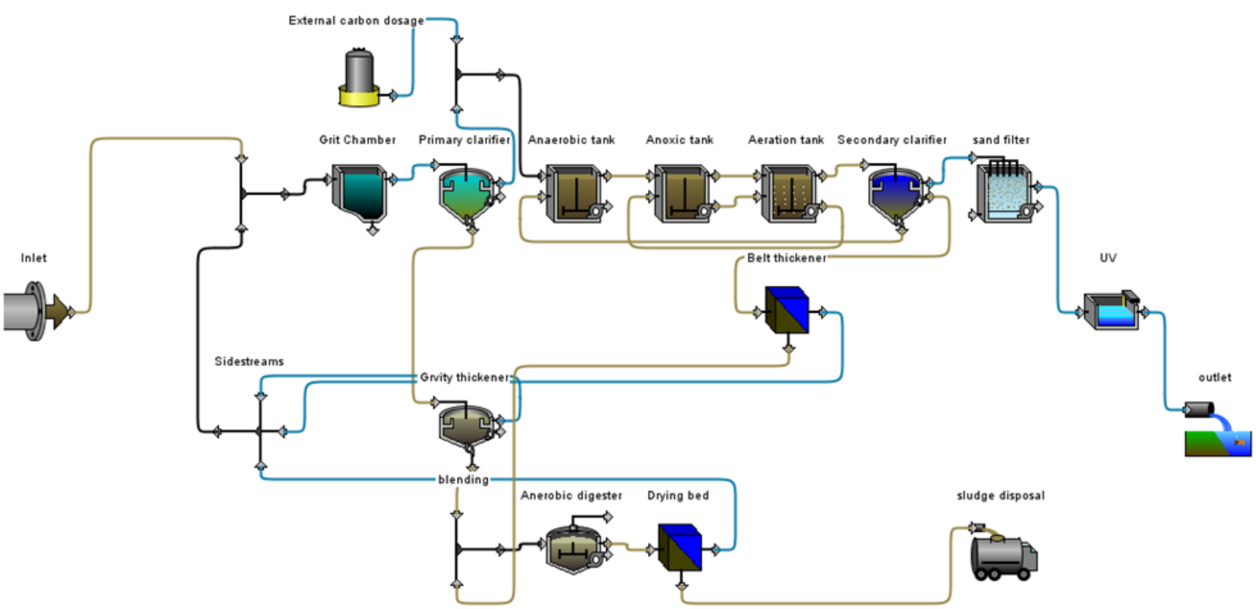

Figure 12. Upgrading Karbala sewage treatment plant by adding an external carbon source

The results, as shown in Table 6, suggest that the best removal of nitrates and total nitrogen is observed when methanol is added, giving total nitrogen concentrations of less than 10 mg/L. However, the best removal of phosphate occurred when adding propionic acid. Glycerol was the weakest external carbon source with respect to removing nutrients, though it did not raise the concentrations of BOD and COD when added as much as the other options.

Table 6. Simulation results after adding an external carbon source

Parameter	Actual Outlet, mg/L	Acetic acid mg/L	Propionic acid mg/L	Methanol mg/L	Glycerol mg/L
COD	26	23	27	28	16
BOD_5	10	4.7	6	8	3
TSS	14	1.7	1.8	1.7	1.4
TP	5.8	1.3	1.2	1.33	3.6
NO3	32	11.5	9	7.8	23
TN	34	13.56	11	9.7	24
PO4-P	3.5	0.33	0.11	0.33	2.8

3.5.2 System Upgrade using Post-denitrification

Biological nutrient removal (BNR) is a term that refers to the removal of both P and N. The majority of BNR WWTPs use a pre-anoxic layout, in which the anoxic zone is positioned with regard to the flowrate of the aeration basin. As denitrification depends on ammonia oxidation in the aerobic zone, substantial mixed liquor recycle (MLR) rates are required in the anoxic zone to provide a suitable nitrate source [31]. While high specific denitrification rates (SDNRs) can be achieved using this arrangement, MLR pumping has several drawbacks, including greater energy costs, the return of dissolved oxygen (DO) from aerobic processes, and dilution of influent carbon. The most important issue is that the pre-denitrification process cannot reach the required nitrate reduction levels, never taking concentrations below 5 mg/L [32]. As the anoxic tank positioned downstream of the aerobic nitrifying tank can produce an effluent with less than 3 mg/L, post-anoxic denitrification eliminates the need for MLR pumping [33]. The Karbala sewage treatment plant should thus be upgraded by placing the post-anoxic basin after the aeration basin, Figure 13.

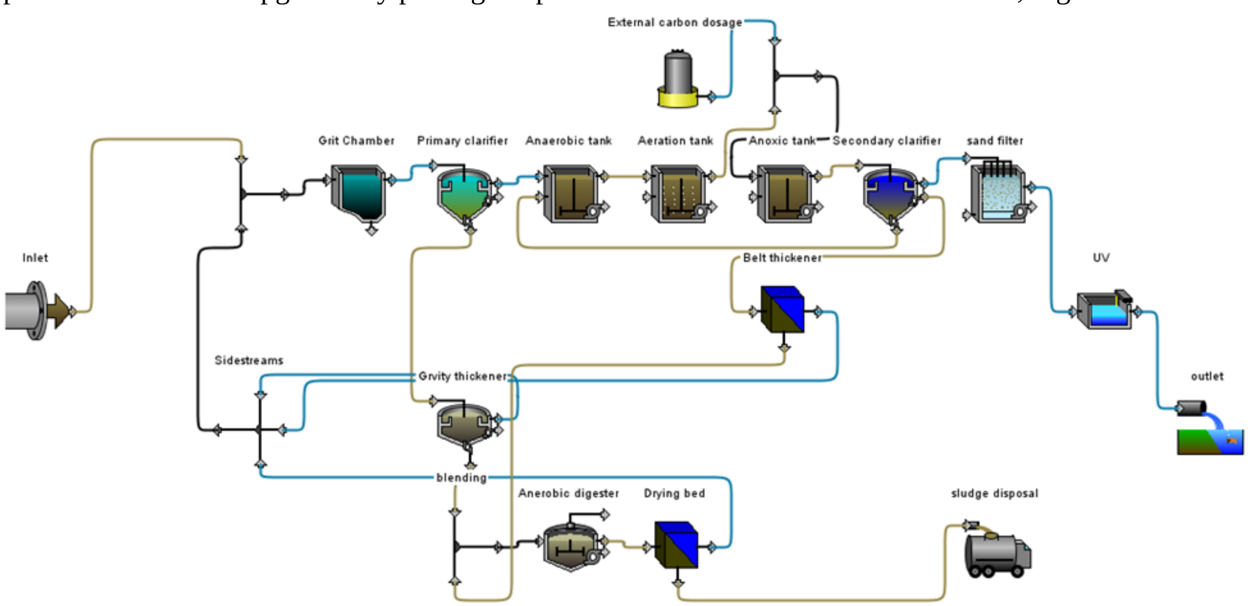

Figure 13. Upgrading Karbala sewage treatment plant by adding an external carbon source (post-anoxic tank).

When operating the system in the post-denitrification process, methanol should be added as the best external carbon source, Table 7.

Table 7. Results Compression of the model when adding methanol to the post and pre- denitrification process

Parameter	Actual Outlet, mg/L	Pre-denitrification by Methanol addition mg/L	Post-denitrification by Methanol addition mg/L
COD	26	28	65
BOD_5	10	8	35
TSS	14	1.7	1.6
TP	5.8	1.33	2
NO3	32	7.8	4.7
TN	34	9.7	7
PO4-P	3.5	0.33	1

Nitrogen removal is excellent when the denitrification processes are post-anoxic. The improvement ratios of nitrate for pre- and post-denitrification were 75 and 85%, respectively; however, the latter caused an increase in COD and BOD concentrations, which is problematic.

4. Conclusions

The process of regulating operational and physical parameters for sewage treatment is essential, as adjusting the IR, WAS, RAS, and DO all contribute to improving energy consumption and the reduction of the resulting sludge. rbCOD may be considered the most influential parameter with respect to the removal of nitrogen and phosphorous, as it is the best source of carbon for building cells that contribute to the removal of nitrogen and phosphorous. Chemical upgrading thus contributes to a significant reduction in nitrates and phosphates based on adding an external carbon source to the system to support this. Acetic acid, propionic acid, methanol, and glycerol were all used as external carbon sources in this study, with methanol identified as the best among these sources. The post-denitrification process was also found to be better than the pre-denitrification process in terms of removing nitrates; however, it was less effective for other pollutants. It is thus desirable to conduct a study in the future to investigate the production of an internal carbon source in the Karbala sewage treatment

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Experimental study of the effect on soil erosion of using tiny gravel as bedding for defective sewer pipes

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Abstract
The erosion of soil is the most influential factor contributing to the creation of sinkholes in urban areas. Soil degradation often takes place due to failures in sewer pipelines, when water flows from and to the adjacent soil through pipes defects. Soil deficiency surrounding faulty stormwater sewer pipes has been attributed to various reasons, including water infiltration and exfiltration volume or discharge, crack size, relative density, water heads, and the number of cracks. This paper focuses on the effect of using tiny gravel media as a protective layer to reduce the processes of soil erosion due to the faults in the wastewater system, which is done by means of a comparison of erosion mechanisms observed when using a protective tiny gravel layer and without. A local sandy soil was used, obtained from the neighbourhoods near the city centre in the Karbala governorate. Sixteen tests, separated into two groups, were performed to identify the differences in outcome between the two statuses, with a matrix of various influential factors to which erosion has been attributed used across the experiments. The outcomes demonstrated that using a tiny gravel layer as a protective bedding layer has an excellent effect on impeding soil erosion processes and, in particular, tremendous efficiency in reducing cavity formation of up to 95.4%. Furthermore, the findings showed an 18.25 times decrease in the total eroded soil, while the settlement of soil surface showed a 26.35 times decrease, allowing higher internal stability and reduced sewer pipe path deformation.
Key words: tiny gravel , infiltration/exfiltration , stormwater sewer, cavitation, bedding efficiency.

1. Introduction
The formation of sinkholes is a major factor in soil failure, and sinkholes in urban areas offer huge risks to human life, including the potential for fatalities [13, 14, 27]. Several researchers [11, 20, 37] have noted the formation of sinkholes due to defects in sewer pipes causing internal erosion of soil, leading to serious damage to infrastructure as well as the aforementioned threat to human life. Furthermore, internal erosion of soil around sewer pipelines has been identified as a driver of the generation of underground voids [8, 12, 13]. Both structural and operational conditions of infrastructure, as defined by Chughtai at.al (2008) are thus exposed to this deterioration due to the formation of sinkholes [6].
Variation in climate over cities leads to varying water flow rate in their sewage systems, which can place extreme loads on defective pipes, increasing the possibility of the generation of cavities and inducing high settlement levels [3, 15, 18, 25, 26, 29, 31–34]. Soil erosion cavities across sewer pipes may also

lead to further failure of the pipe as a consequence of a lack of soil support [2, 7, 32, 35]. Such events have been noted in Guatemala, in Ottawa, and in many other places around the world [4, 5, 17, 39].

In that situation, the relationship between the grain size of the bedding materials and the defect size can be considered the main influencing factor for the erosion process. Rogers at (1986), suggested a relationship between bedding grain size to leak width (B/D_{85}) and the soil erosion rate, where B is the sewer pipe crack width and D_{85} is the sieve size through which 85% of particles pass within the bedding soil sample. This study showed that the critical flow of soil through a leaky pipe begins when the defect width reaches $2.5D_{85}$ to $4.9D_{85}$[36], and similar results were found by Mukunoki [27]. Ghulam at (2018), used laboratory apparatus to investigate the effect of particle size and leak width impact on the erosion of local sandy soil and subbase type (D), showing that the eroded soil increased as the D_{70}/B ratio declined. In general, the eroded soil reaches an eroded soil collection device quickly and continuously through leaks when the ratio of D_{70}/B is less than 0.17 A model study to investigate the mechanisms of soil degradation induced by drainage pipe deficiency water infiltration was also created in [12].

The mechanisms for soil particle migration to various types of sewer pipe beddings, as specified by British Standards (1987), was examined by Fenner (1991) [10]; the findings of his study suggested the utilisation of bedding class-F (Flatbed) in preference to bedding of class-S (sewer pipe surrounded by granular material), as shown in Fig. 1. The potential methods for reducing the existence of sinkholes based on soil settlement and ground loss suggested are thus to improve the internal stability of embedment materials to impede the erosion process (Sato and Kuwano, 2008) [37]; to detect cavity generation at an earlier stage by utilising geophysical techniques such as ground-penetrating radar (GPR) (El-Qady et al., 2005)[9]; or to avoid the occurrence or development of sewer pipe cracks. The first of these is often the most appropriate solution, as it reduces extra costs [19].

Pipe embedment and backfill products thus play a significant function in the migration of soils particles into faulty sewer pipes from a geotechnical point of view; an adequate balance of characteristics is thus sought to enhance the resistance of these bedding materials to internal erosion. An analysis of Australian sewer bedding material specifications revealed a lack of awareness of the importance of particle size distribution (PSD) in determining the susceptibility to erosion among those materials, however [41, 42].

Bedding material classification and descriptions have been studied by several researchers [1, 2, 22], with most such studies seeking to identify the effects of bedding thickness by applying analytical methods. Abolmaali derived a non-linear formula for soil erosion based on the finite-eliminate method (FEM) using Abaqus software [1], while Guo studied the erosion process for soils used as bedding materials by applying numerical model analysis to predict the rate of erosion for the soils [14]. Within that study, particle shape factor, particle size, void ratio, and submerged repose angle were identified as key soil properties and the groundwater table was the major function. Karoui investigated the subsidence of granular material (silica sand) under two water flux conditions, cyclic and continuous; his study outcomes revealed that a sequence of fast water supply and drainage cycles created quicker failure than slow water supply and drainage cycles [23]. Backfill materials have also been determined to play a crucial role in the total amount of soil subsidence and surface settlement [29, 32]. Basim et al. further noted that, throughout the rainy season, water rises rapidly in the sewer pipe system, which leads to pipes operating under fully loaded conditions, thus accelerating cavity formation due to the increment of water volume quantities seeping through any cracks in sewer pipes, and consequently, increasing the infiltration water volume combined with the eroded soil accumulating inside the pipe through defects [16, 26, 30, 35].

The current study aimed to identify the efficiency of using tiny gravel as a protective layer, and a small scale ground model experimental method was utilised to increase understanding of the impact of using such a protective gravel layer on the various mechanisms of soil erosion and subsidence. Image correlation using Particles Image Velocimetry (PIV) was employed to perform continuous observation of any soil subsidence.

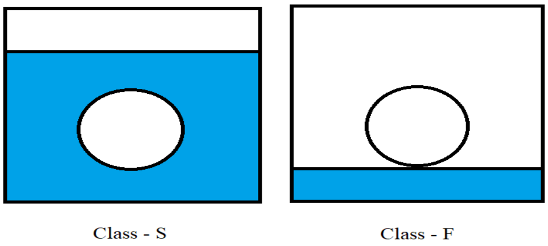

Figure 1: Sewer bedding class (S) and (F) British Standards 1987.

2. Testing materials

The soil consisted of local materials derived from areas close to Kerbala city centre in the Karbala governorate. The soil samples were sieved to determine the soil grain size using a standard analysis method (Astm, 2007, Astm D-422). The soil size graduation is plotted in Fig. 2, with further details shown in Table 1. According to the Unified Soil Classification System (ASTM D 2487-17), the resulting soil is described as sandy soil with poor graduation (SP). The soil permeability was also examined per ASTM D-1556.

The tiny gravel used in this study was intended as a protective layer of granular media to improve the soil resistance to erosion and subsidence, as shown in Plate 1. The properties of this gravel are presented in Table 2, and the particle size gradient per ASTM specifications is shown in Fig. 3.

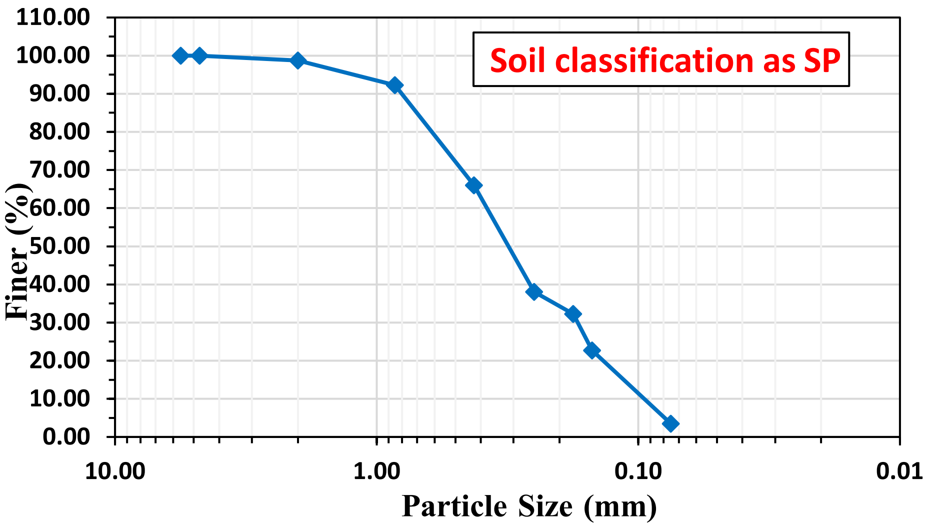

Figure 2: Particle size distribution of experimental sandy soil

Table 1: Experimental sandy soil properties

Property	ASTM Designation	Value
Specific gravity	ASTM D854-14	2.60
Coefficient of Gradation $Cc = D_{30}^2/D_{60}\ D_{10}$	ASTM D2487-11	0.88
Coefficient of Uniformity $Cu = D_{60}/D_{10}$	ASTM D2487-11	3.18
Plastic Limit (P.L)	ASTM D4318-05	14%
Liquid Limit (L.L)	ASTM D4318-05	18%
Plasticity Index (P.I) P.I = L.L - P.L	ASTM D4318-05	4%
D_{75}	-	0.571 mm
Optimum water content	-	8.56%
Soil permeability	ASTM D -1556-03	0.00021 m/s

Plate 1: Tiny gravel used in experimental test

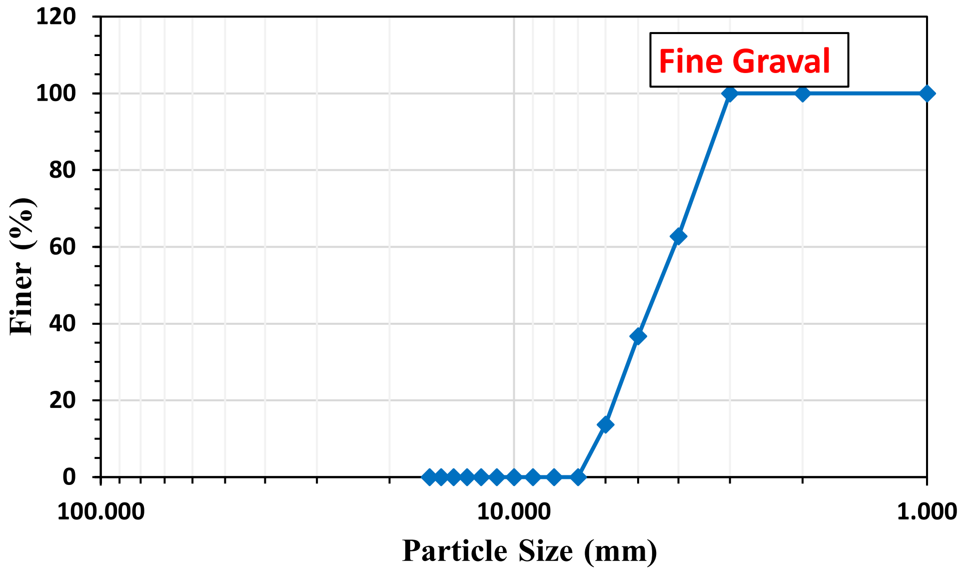

Figure 3: Particle size distribution of experimental tiny gravel

Table 2: Experimental tiny gravel properties

Property	ASTM Designation	Value
Specific gravity	ASTM D 3854-214	2.85
Coefficient of Gradation $Cc= D_{30}/D_{60}D_{10}$	ASTM D 2487-11	2.56
Coefficient of Uniformity $Cu= D_{60}/D_{10}$	ASTM D 2487-11	1.03
D_{75}	-	6.84 mm

3. Experimental apparatus

The current study's test apparatus was designed to overcome the disadvantages of the previous models, based on a review of the testing models and apparatus used by previous researchers [12, 19, 21, 24, 28, 37, 38]; it was thus built as big as possible to provide better simulation of real soil cavities' formation and subsidence. The model is illustrated in Fig. 4 and Plate 2. The apparatus was composed of a soil compartment, a gathering unit to collect the eroded soil, water inflow and outflow control valves, and some variable steel weights. The entire soil container had dimensions of 800 x 100 x 490 mm. Both the front and back walls were of 10 mm strengthened glass with steel framing, to allow observation of the development process of cavity formation through translucent walls. At the base of the soil chamber, five interchangeable erosion soil collection units were placed to facilitate changing the numbers of cracks and crack sizes, simulating various pipe defects near the crown. The water volume in each cycle could be changed by adjusting the supply valve, and a rubber strip and an O-ring were placed between the soil chamber base and eroded soil collection units to prevent leakage from the connections. At the lower end of the soil gathering unit, a drainage valve was fixed that opened when discharge was required and closed during water supply.

By adjusting the steel loads placed at the top of a timber beam, the actual weight of soil was imitated for various depths of sewer pipe. A high stiff plastic pipe of a 2 mm radius was used to move water from the source tank to the valve, and for each particular water head, the water flow rate was calibrated and the volume over time measured.

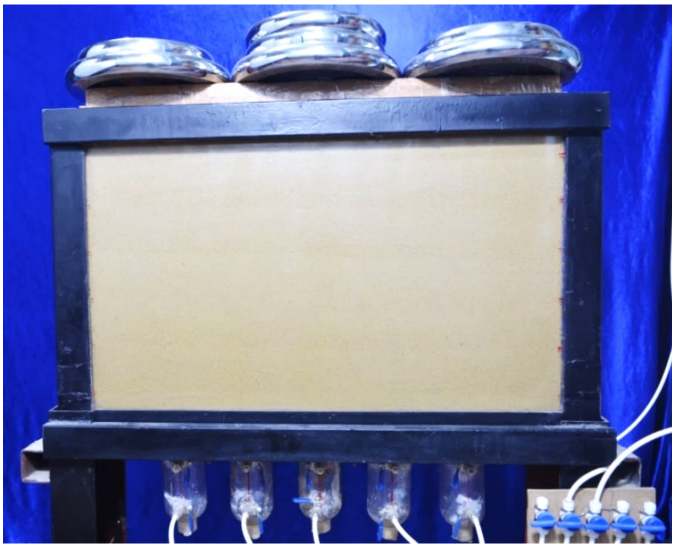

Plate 2: Image of the experimental apparatus.

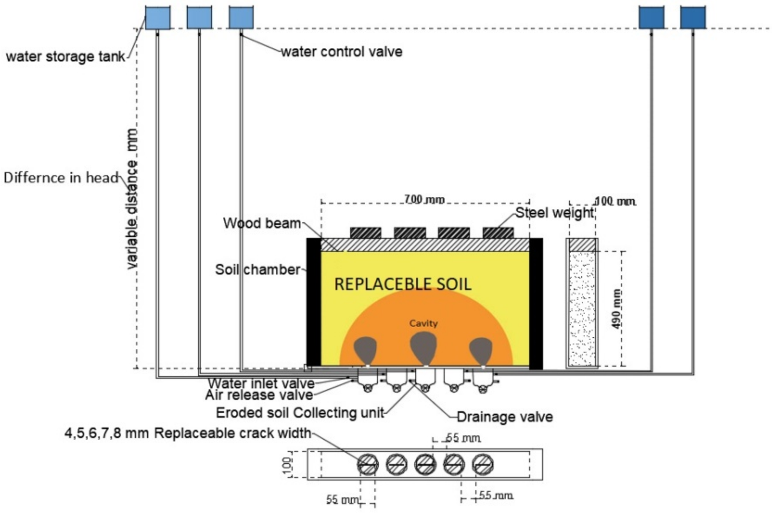

Figure 4: Schematic diagram of the apparatus

4. Experimental methodology and procedure.

The eroded soil collection unit with 8- and 6-mm replaceable crack width and 55 mm length was placed at the base of the soil chamber and held in place with screws, with the top surface of the collection unit and the bottom of the soil compartment at the same level. The defect length was placed in a direction parallel to the glass walls, then the tiny gravel layer was placed at the desired thickness and compacted by tamping. The soil was then added to the soil compartment as 70 mm layers that were then compacted to 75 or 85% relative density, depending on the test to be performed. Two water heads were utilised (1.7

and 2.0 m), and dry ,4%, and 8% soil initial moisture contents were investigated. Appropriate steel loads were set on a timber beam fixed on the soil upper surface to represent 1.5 m of soil depth over the sewer pipe.

The model was left for 12 to 18 hours in each case to decrease implied creep impact before 0.9 or 0.3 litres of water was applied to the soil model through the crack, depending on the test. The drainage plug was removed after 3.5 min, permitting water and any eroded soil to flow out of the collection unit. The water supply and drainage process together created a cycle, and this was replicated fourteen times per test. Each cycle, the eroded soil was collected, dried, weighted, and then sieved. The Particles Image Velocimetry (PIV) was captured based on image correlation using a built in MATLAB software function, and this was utilised for continuous observation of the soil vertical displacement.

Nikon D5300 DSLR cameras were used with 23.6 x 15.6 mm complementary metal oxide semiconductor (CMOS) sensors and an image resolution of 6000 x 4000 pixels. To avoid relative movement between the lens and the target, which can occur in automatic mode due to auto focusing, the camera and lens were operated in manual mode; further, to avoid the reflection of nearby objects on the glass walls of the apparatus, which could disturb the images and hamper the correlation process, black covers were used behind the camera [40], which was initially placed in close vicinity to the target; however, as this created perspective distortion in the images [40], the maximum possible distance of 1.5 m was selected.

5. Outcomes and discussion.

According to the Iraqi general standards for the implementation and installation of sewer pipe systems, utilisation of granular media as embedment materials is recommended. Consequently, it is essential to investigate the effects of such granular particles on erosion and subsidence processes. In this study, tiny gravel was used as a protective layer above pipe cracks, rather than as an entirely embedded material, in order to identify the effectiveness of utilising a granular media as a protection layer for pipelines in sewage systems. Various tests were thus performed in different conditions, with two cracks widths of 6 and 8 mm, two water pressures of 1.7, and 2.0 metres, initial moisture content varying between dry, 4%, and 8%, relative density of 75% and 85%, also two water fluxes, 0.3 and 0.9 L. Cases with one, two, and three cracks were also investigated.

Fig. 5 reveals that employing the small gravel media had huge impacts on the cumulative erosion soil weight, and the overall cavitation process. The results show a decrease in eroded mass volume of 18.25 times for a single crack on using the tiny gravel layer, and a similar influence was noted even in the multi-crack case, with the reductions being 25.84 times and 30.62 times for two or three defects respectively, as displayed in Fig. 6. Based on observations that no cavity formation or high subsidence occurred either in single or in the multi-cracks cases, the tiny gravel appears to offer protection based on its effect as a filter, preventing the soil particles from flowing along with the water seeping into the defective pipe.

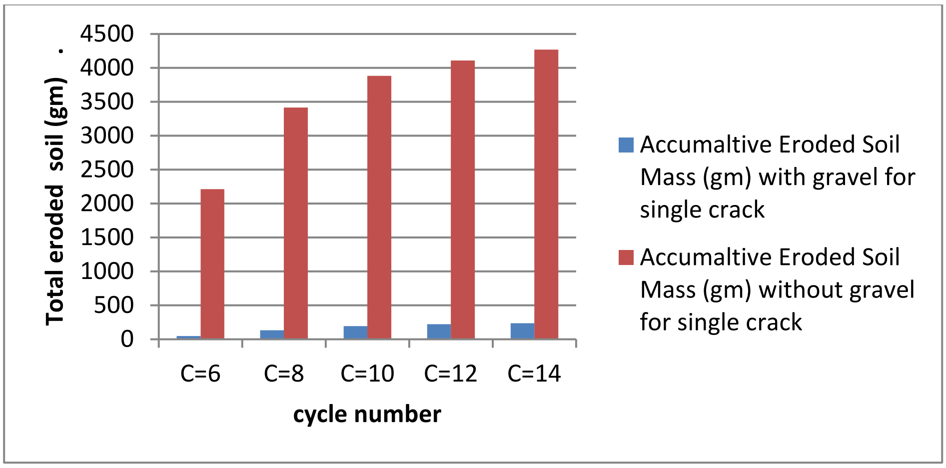

Figure 5: Cumulative eroded mass with and without gravel layer in various test cycles

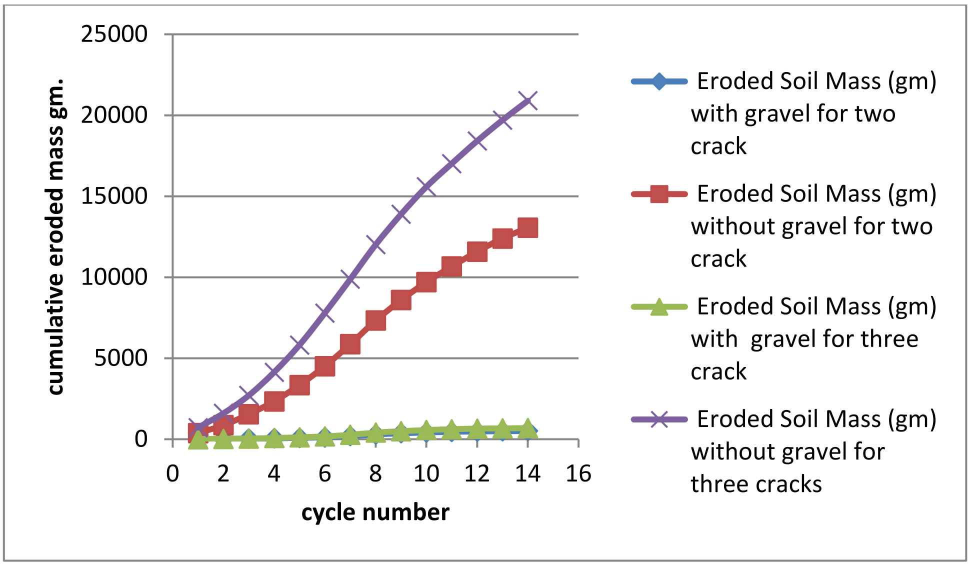

Figure 6: Eroded soil mass with and without gravel layer in different cycles for multi crack statuses.

It was also highly notable that the decrease in the erosion in cases of two and three cracks with spacing equal to 55 mm, which had the highest probability of cavity creation as mentioned in the preceding figure, showed only small values of eroded mass due to the behaviour of the tiny gravel layer restricting cavity formation by reducing the motion of the particles. This state also registered the least subsidence, as shown in Plate 3. Thus, the possibility of cavity generation and soil surface settlement is noticeably decreased when the separating distance is increased, with no necessity for additional examinations for these cases.

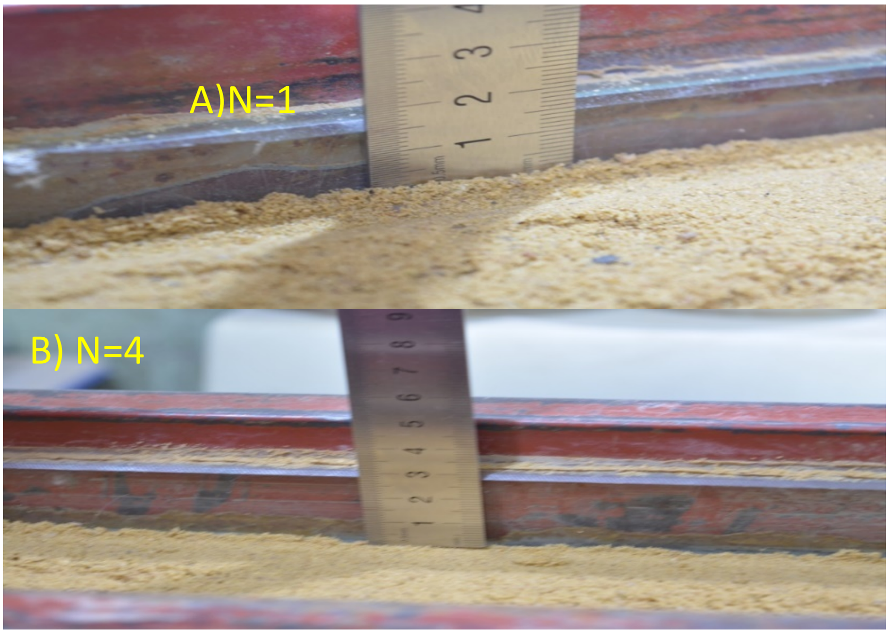

Plate 3 : Image for total settlement A) with a single crack and B) with four cracks in local sandy soil without a gravel layer

Experiments with two different defect widths (6 and 8 mm) and inflow volumes (0.3 and 0.9 L) were conducted to assess the performance of a tiny gravel layer with regard to different crack sizes and various water fluxes. The volume of eroded soil during the test cycles is shown in Figures 7 and 8, and the results reveal a significant decrease in soil erosion by 22.15 times for both crack sizes. The decrease in defect width from 8 mm to 6 mm without the gravel protective layer reduced erosion by 38%, while this effect was increased to 71% with the gravel layer. The overall decline in erosion based on adding the protective layer was 28.75 times for an 8 mm crack, supporting the restriction on negative behaviours in embedded soil around sewer pipes caused by screening using a tiny gravel layer.

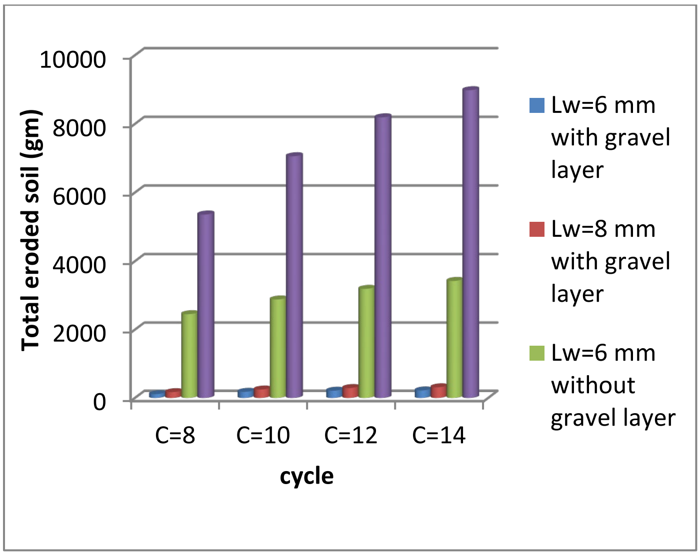

Figure 7: Cumulative eroded mass with and without gravel protect layer during tests for different leak widths. Iwc=0%, and V=0.3L.

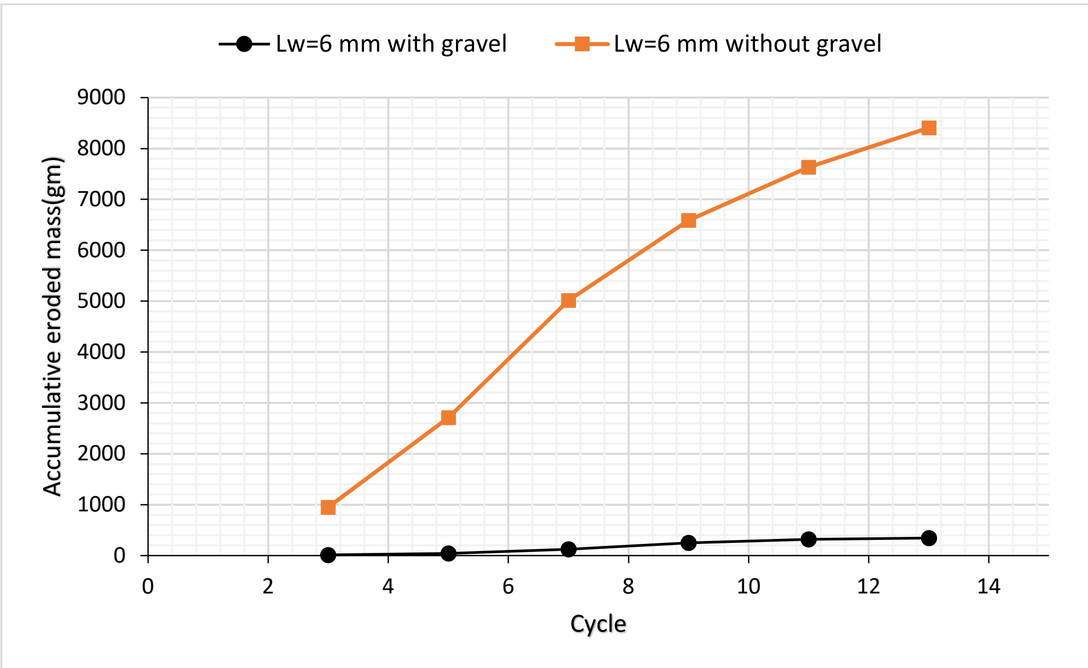

Figure 8: The relationship between water volume and total eroded soil at water volume 0.9L

Furthermore, the soil final layer vertical subsidence was decreased by 26.35 times, with total subsidence reduced from 13.7 mm without the protection layer to 0.52 mm with such a layer, as shown in Plate 4. Fig. 9 further reveals a decrease of 23.4 times water volume in the 0.9 litre case.

It was clear that increasing crack width and water quantity in the exfiltration/infiltration cycle did not have a significant impact on the erosion process and cavity formation; the general behaviour of the soil was also similar in terms of increasing the cumulative amount of eroded soil in cases with and without gravel layer.

Plate 4: The differences in subsidence between cases using gravel and without a tiny gravel protective layer

Two various water head experiments were performed to increase confidence in the performance of the tiny gravel layer, and another additional experiment at 75% relative density was conducted. The experimental results of these tests are shown in Figures 9 and 10. The results revealed that when the water head increased, the amount of erosion was correspondingly increased. In addition, when a comparison was made to examine whether utilising the protective layer was efficient and successful, a high difference in measured total eroded soil was observed, with a reduction of 5,491gm in the second case. This implies that the efficiency of erosion reduction can reach up to 95.4%.

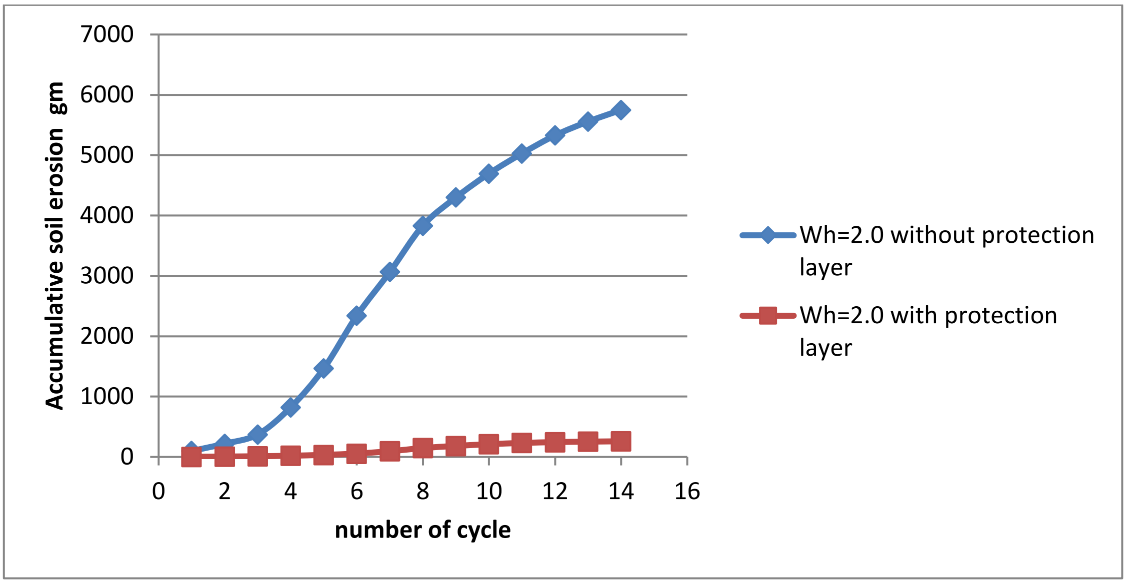

Figure 9: Total cumulative eroded soil through various cycle tests in 2.0 metre water head with and without gravel protection layer

Similarly, the high impact of using a gravel protective layer was also seen in the lower density state, with total eroded soil volumes declining from 10,333.8 to 285.6 gm, equivalent to a 36.2 times reduction. Further, the soil with the protection layer did not fail and the soil erosion resistance continued until the end of the test, which was not the case without a gravel layer, as shown in Fig. 10.

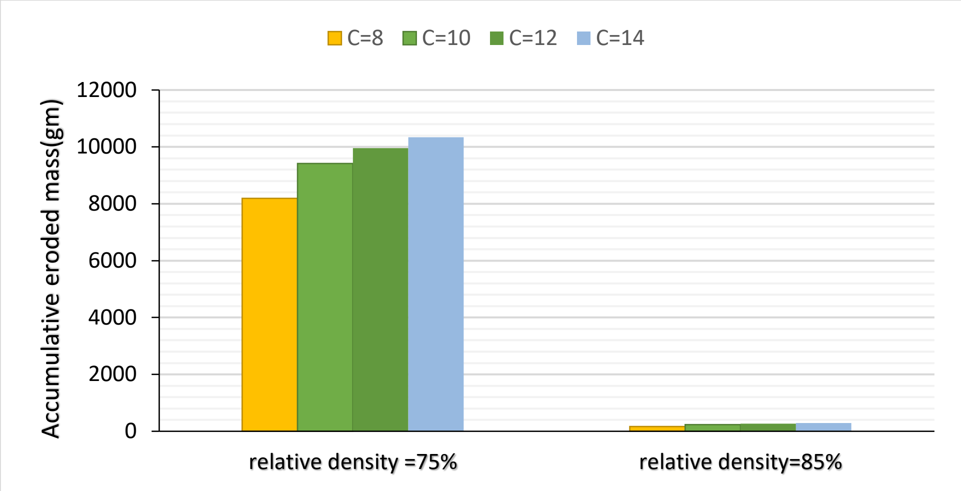

Figure 10: Total eroded soil at the end of 14 cycles with 75% density during the experimental test.

In general, the outcomes of the tests indicated a high impact of using a protective tiny gravel layer. Overall, the use of a gravel layer decreased the erosion of soil by at least 18.25 times, generating an efficiency of 95.4%. This confirms that the use of this procedure leads to an increase in the resistance of soil to cavity formation and subsidence.

6. Conclusion

- The results showed that the cumulative amount of eroded soil reduction was 18.25 times greater with a gravel layer than without.
- The overall decrease in soil surface settlement was 26.35 times.
- The total effectiveness of the employing a tiny gravel protection layer was 95.4% in all cases, including different heads; various defect widths; one, two, or three cracks; and even with varying relative densities.
- Due to the high efficiency of utilisation of a gravel protective layer with regard to impeding both subsidence and erosion process, as shown in this study, this capability of reducing soil erosion should control deformation of sewer pipe paths where it is utilised.

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EVALUATION THE EFFECT OF PRESSURE HEAD AND SOIL TYPE ON EROSION AND SUBSIDENCE OF SOIL DUE TO DEFECTIVE SEWERS.

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ABSTRACT.

Internal degradation induced in the metropolitan areas by leakage of sewers. As the resistance to erosion depends on the distribution of soil particles and the water pressure in sewer pipes, it is worthwhile to research the impact of water pressure on the soil erosion resistance of embedded pipes. This study aims to find physical model tests which simulating erosion and sinkhole development due to cyclic leakage in an experimental ground model through defect sewers. Proposed parameters like cyclic leaks through pipe crashes, eroded soil properties, initiation cavity, and evolution up until sinkhole failure were studied. During this process, the ground settlement monitored with Paricle Image Velocimetry (PIV). Also, soils with various classification were utilized to identify the total subsidence for the different soil types. Five various water pressures were used:i.e., 0.8,1.1,1.4,1.7, and 2.0 meter,(7.85, 10.79, 13.73, 16.76, and 19.61 Kpa), respectively, and local sandy soil, local loamy soil, and local clayey soil also were used. The results showed that two parameters influence soil failure,noticebliy:- the first is water pressure which has a direct proportion to erosion and subsidence, where the increment of total eroded soil of 2.0 m water head reached 3.95 times 0.8 m head , and the second is soil types which showed that the clayey soil is highly sensitive and suffering more from subsidence rather than erosion on the contrary of other soil types.

Key words. embedded pipes; leakage; PIV; subsidence; sewer pressure

INTRODUCTION;

Urban sinkholes around faulty sewer pipes because of soil erosion are frequently reported and have become a major urban problem issue [1,5,8,12,16]. Recent reports indicated that in Japan there are…, 3000-4000 accidents in road sinkholes occur annually, because of the deterioration of sewage piping, in Japan alone[3]. Such disasters cause significant economic damage, societal inconvenience, environmental effects, and often human deaths. Detailed reporting on these events is extremely rare, though, because the primary concern of the competent authority is to return the utilities and roads more quickly to minimize public discomfort. Table 1, which based on the official reports, demonstrates the descriptions of a few sinkhole incidents triggered by faulty sewer pipes, it is shows that the most critical parameters (I.e.,the type of the soil, details of the sewage pipe, groundwater level, conditions of weather, pipe defect, the geometry of the sinking hole, etc.) are uncertain and the news only characterized the event in general. Consequently, the mechanism of erosion and the main parameters influencing soil erosion by sewer pipes faulty are not yet clearly understood, where large number of matters have not been clarified[13].

Indiketiya and other researchers presented three approaches to minimize these events and one of the cost-effective geotechnical technological solutions is to enhance soil erosion resistivity surrounding the sewage pipes[10,11,20,28]. A plate of the cross-section, of a standard sewer trench for the main two bedding types, is displayed as shown in Fig (1). The soil in the embedding and filling of trenches surrounding the sewer pipe cracks are eroding and entering to the pipeline by groundwater penetration and exfiltration of the sewer as stated by[20], Which begin to create a void in the soil structure. These voids expanded throughout the rainfall cycles and continuous exfiltration. Eventually, it leads to cavity formation. After a while, the arch roof of the cavity will not be able to withstand the excessive load on it, causing soil failure and land sliding. In several studies, the association between soil properties and the risk of internal erosion that deficient sewers have been studied[8,14,24–26].

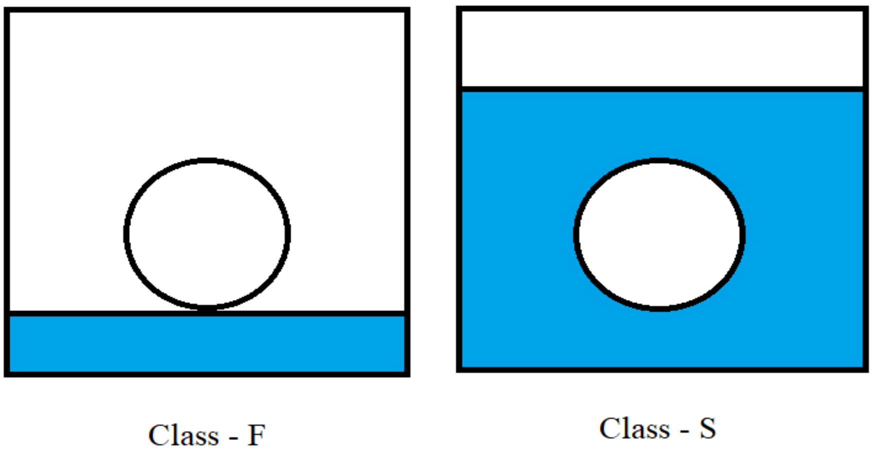

Figure (1) : Bedding main two types

For geotechnical engineering, backfill materials, and pipe embedding play a vital role in soil migration caused by pipe defects, and the precise balance of their properties will increase their internal erosion resistance.

Examining the Australian sewer bedding content specifications[29] reveals explicitly a lack of knowledge regarding the value of particle size distribution for the erodibility of these products. Besides, the backfill materials play the same crucial role in identifying the total amount of soil subsidence and surface settlement[17].

Table (1): Some examples for sinkholes induced by defective sewers

Date	Location	Cause of tragedy	Sinkhole size	Damage	Reference
12/2016	San	Defective sewer	3.6 m deep	1 killed 2 injured	[19]
12/2016	Fraser,	Broken sewer line (12′	100 m long, 33 m	Over US$78	[4]
5/2016	San	A broken brick sewer	4 m long, 1.5 m	–	[30]
9/2015	Fremont,	Broken old vitrified clay	2.5 m deep, 3 m	US$30,000	[2]
9/2002	Tuscan, Arizona	Old sewer pipe 42″ in diameter	2 sinkholes	US$7.7 million	[6]

Sato et al., and Indiketiya Performed several experimental tests on a ground model to identify the effect of water head on the time of cavity formation has findings proved that there no large impact for this factor on cavity formation speed[10,11]. Basim et al. stated that through the rainy season the water rises rapidly in the sewer pipe system, which leads to making the pipe under a fully loaded condition, thus will help to accelerate the cavity formation due to the increment of water volume quantities that seepage through the cracks in the sewer pipe and consequently, increasing the infiltration water volume combined with the eroded soil inside the pipe through defects[9,18,21–23].

Furthermore, Gholam et al. 2018 reported that the increase in water flow discharge leads to raising the rate of erosion faster. Also, his study indicated that the eroded soil reaches the eroded soil collection device quickly and continuously through the leak when the ratio of D_{70}/B is less than 0.17, where B equal to the crack width and D_{70} the size of sieve that 70% of the soil sample passing through by weight. On the other hand, his study not gate a sufficient focus on the water head influence on the amount of eroded soil and their gradation[7]. The aim of this study to evaluate the water pressure influence on total amount of eroded soil and subsidence by utilizing Particle Image Velocimetry in Matlab 2019 function. Main aim of the present study to achieves an comprehensive understanding of erosion mechanisms for various soil types, which take a limited focus by the erosion studies.

1. EXPERIMENTAL WORK.

1.1 TEST APPARATUS and MATERIALS.

The present study presents a physical ground model apparatus to identify the study aim, the experimental model contains a soil chamber with dimensions of (70X49X10)mm, as the (length X height X width). And soil collecting unit is attached to the bottom of the chamber can be shown in Plate (1). A local sandy, loamy sand, and clayey soils were brought from Kerbala Governorate. Also,(7.85, 10.79, 13.73, 16.76, and 19.61) kPa. Of water pressure was utilized, which was provided by a variable head water tank . Table (2) and Fig. (3), show the soil specification and particle size distribution according to (ASTM- D 422 Standard soil analysis test method). Furthermore, two digital single lens reflex cameras (DSLR) were placed 1500 mm approximately, away from the soil chamber. Holding the camera near to the target creates a distortion of perspective in captured pictures, as recommended by Thielicke and Stamhuis[27]. A fixed distance of 1500 mm has therefore been selected. This study was based on a Nikon D5300 DSLR camera and selected 23.6 mm x 15.6 mm, CMOS (metal-oxide-semiconductive supplementary), with 6000 x 4000-pixel image resolution (image resolution).The apparatus diagram shown in Fig (2)

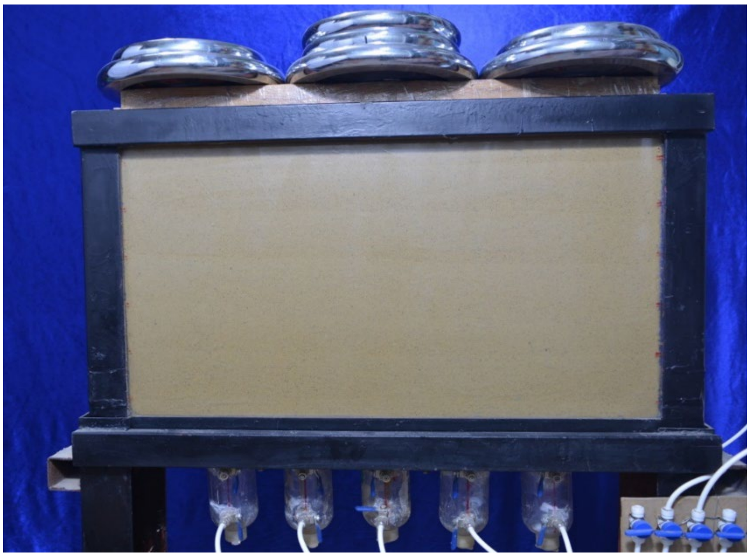

Plate (1): Testing ground model

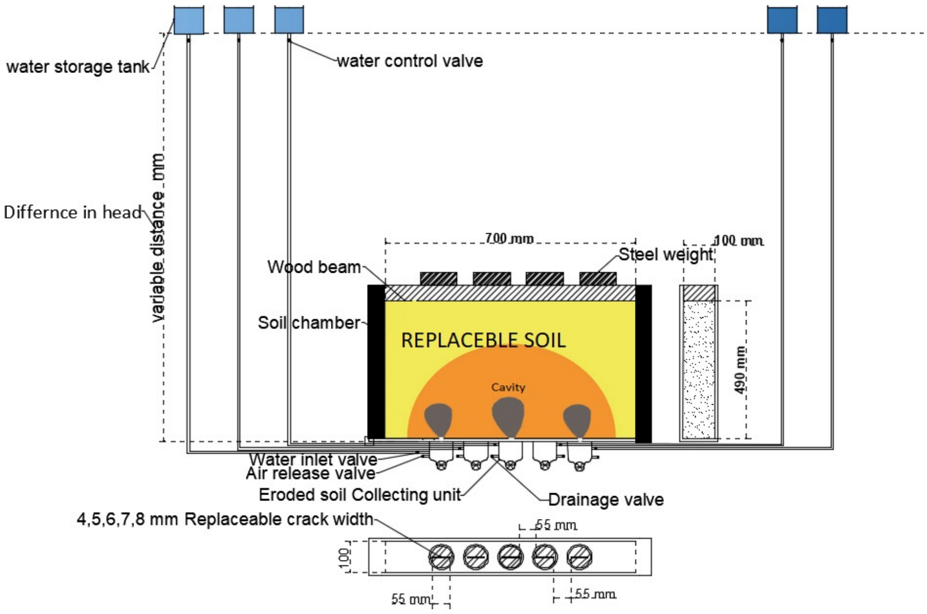

Figure (2) : Schematic diagram of the testing apparatus used in experiments.

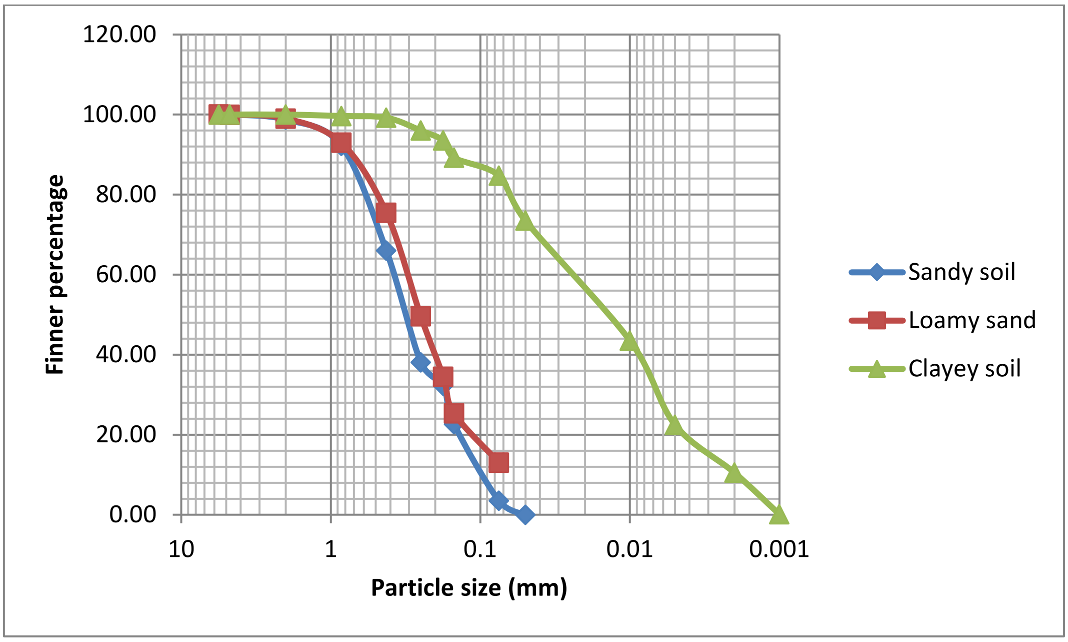

Figure (3): Used soil types according ASTM-D422 Particles Size Distribution.

Table 2: Soil specification according to ASTM D2487-11, ASTM D 2487-17, and ASTM D854-14

Soil type	Specifications	
Local Sandy soil	Specific gravity	2.60
	Coefficient of Gradation $Cc = D_{30}^2/D_{60}.D_{10}$	0.88
	Coefficient of Uniformity $Cu = D_{60}/D_{10}$	3.18
	D_{75}	0.571 mm
	Optimum water content	8.6%
Local Loamy Sand soil	Specific gravity	2.55
	Coefficient of Gradation $Cc = D_{30}^2/D_{60}.D_{10}$	1.22
	Coefficient of Uniformity $Cu = D_{60}/D_{10}$	4.21
	D_{75}	0.425 mm
	Optimum water content	8.4%
Local Clayey soil	Specific gravity	2.45
	Coefficient of Gradation $Cc = D_{30}^2/D_{60}.D_{10}$	0.883
	Coefficient of Uniformity $Cu = D_{60}/D_{10}$	24.23
	D_{75}	0.052 mm
	Optimum water content	15%

2.1 Experiment Work procedure

The eroded soil collection units of a 6 mm crack width and 55 mm length was placed at the base of the soil chamber and fastened by screws. To keep the soil from spilling out during the soil adding and compacting process into the soil compartment, icing sugar was put in the erosion soil collection units. This substance breaks down when water streams into the soil compartment. Steel loads were set on the timber beam that was fixed on the soil upper surface to reenact 1 m of soil profundity over the sewer pipe. To decreases the implied creep impact, the model was lifted for 12-18 hours. After that, a 0.3 liter of water was applied to the soil model through the crack. Furthermore, after a 3.5 minute, the drainage plug released, and the eroded soil was collected, dried, weighed then sieved individually. An image took before and after the cycle of exfiltration/infiltration for purposes of PIVlab analysis, and every two consecutive frames analyzed separately to evaluate the soil particles' vertical displacement.

3.RESULTS AND DISCUSSION

Throughout the present study, the total eroded soil and subsidence were under continuously observing and monitoring, the results of soil subsidence of the different cycles number against the head pressure are plotted in Fig (4). Moreover, Fig (5) shows the influence on the accumulative amounts of the eroded soil due to the water pressure variation. The results suggest that the increment of water head at the manholes leads to the quickening the process of soil erosion, which could create a cavity more quickly. Fig (4) demonstrated that eroded soil total quantities increased by 1.033,1.74,2.9, and 3.95 times as compared with 0.8 m head for the increase of pressure of the water 1.1,1.4,1.7, and 2.0 m respectively. This results agree with study of [13].

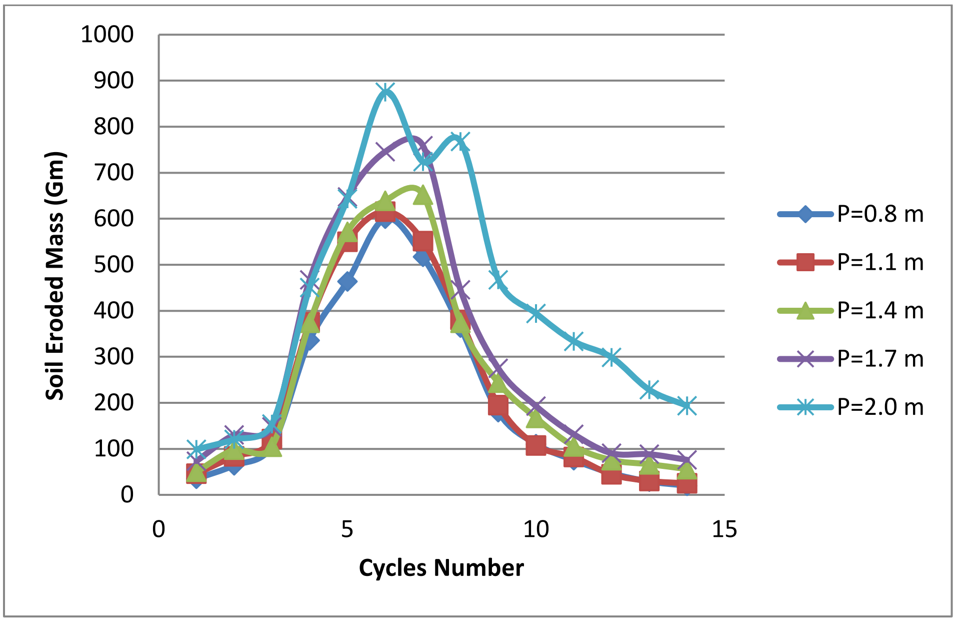

Figure (4): The soil eroded amount against cycles of the test throughout various water head.

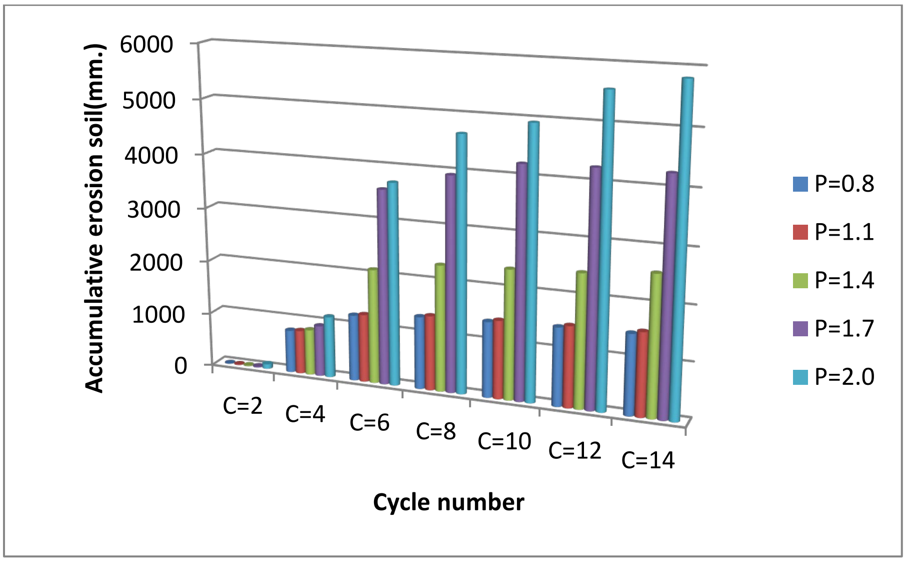

Figure (5): Accumulative erosion soil mass in different cycles of local sandy Kerbala soil.

The impact of the ratio between the soil physical proprieties(permeability and density of soil) to water pressure (ℓ. K2/P) on the overall amount of eroded sandy soil is drawn in Fig (6). It was observed that the variations in water pressure have a meaningful influence on soil erosion mechanisms, where the voids will form more quickly when the soil was in the same permeability and relative density. Also, the cumulative eroded soil content was increasingly rising while this percentage becomes equivalent to or below 0.3.This effect of hydraulic properties of soil agree with the outcomes of [15].

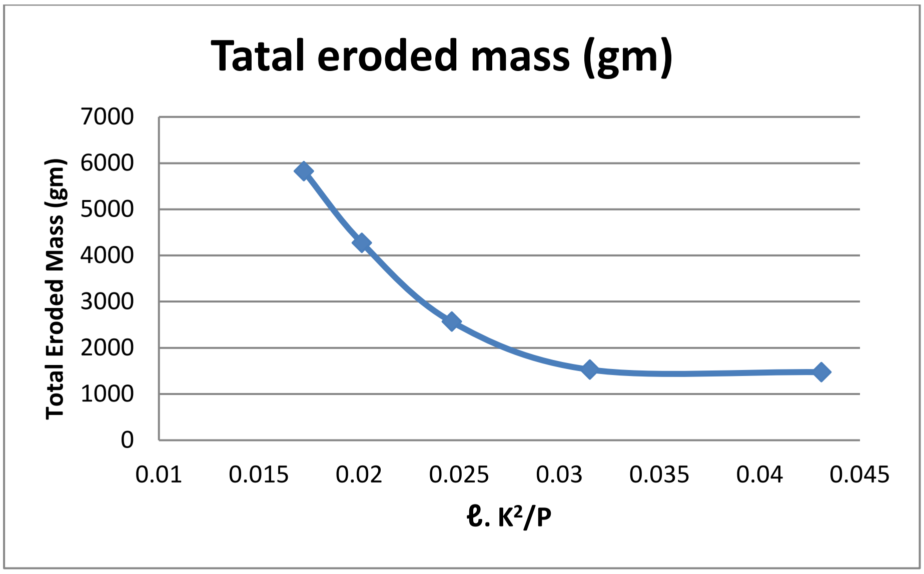

Figure (06) : Relationship of the total eroded mass of local sandy soil types with $(\rho . K^2 / P)$

The relationship of soil subsidence observed and plotted in Fig (7) during the test cycles against the variations of soil types. The outcomes indicate that clayey soil takes the highest subsidence by 3.5 times higher than sandy soil, which in turn less than the loamy sand soil by 1.28 times, the reason behind that is due to the losses of shear strength and structural failure of the saturated clayey soil on the contrary of sandy soil which the subsidence was due to the expanded of the cavity formation.

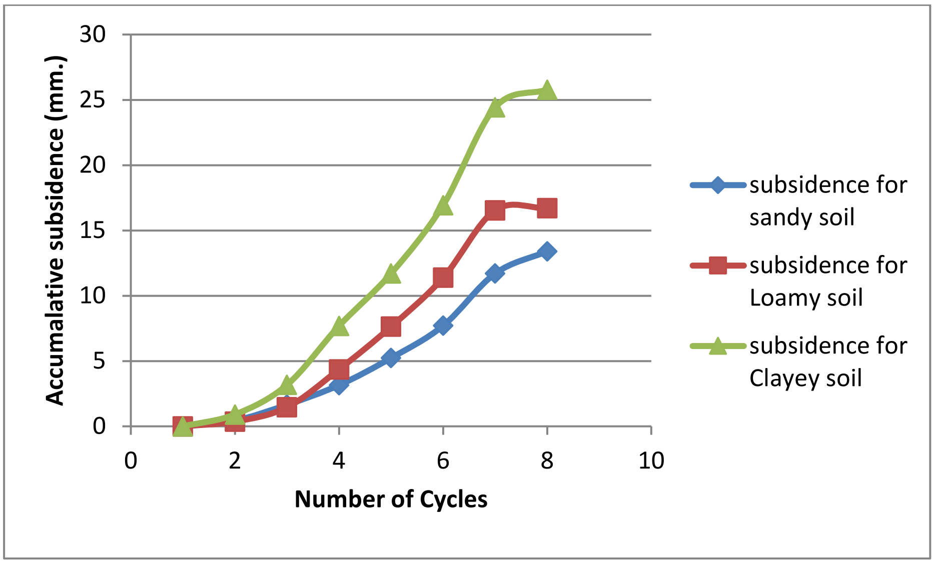

Figure (7): Total subsidence for different type of soils throughout cycles test.

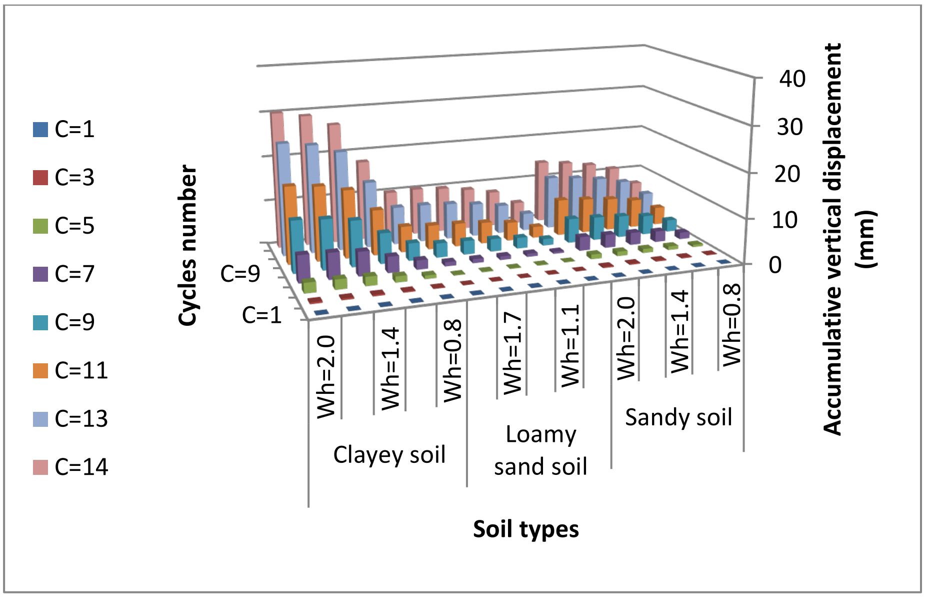

Figure (8): Accumulative soil subsidence for various head pressure of various soil types.

Although the clayey soil has the biggest subsidence among other soil types, it was observed that the clayey soil was the smallest soil affected by the variation of the water pressure. Where the outcomes reveal that the loamy sand soil increment was 4 percent, and the clayey soil increment was 3.5 percent, while the sandy soil raised by 5% when the pressure of water was increased from 1.7 to 2.0 m, as illustrated in Fig (8) which represented the amount of subsidence against various water pressure with different types of soil.

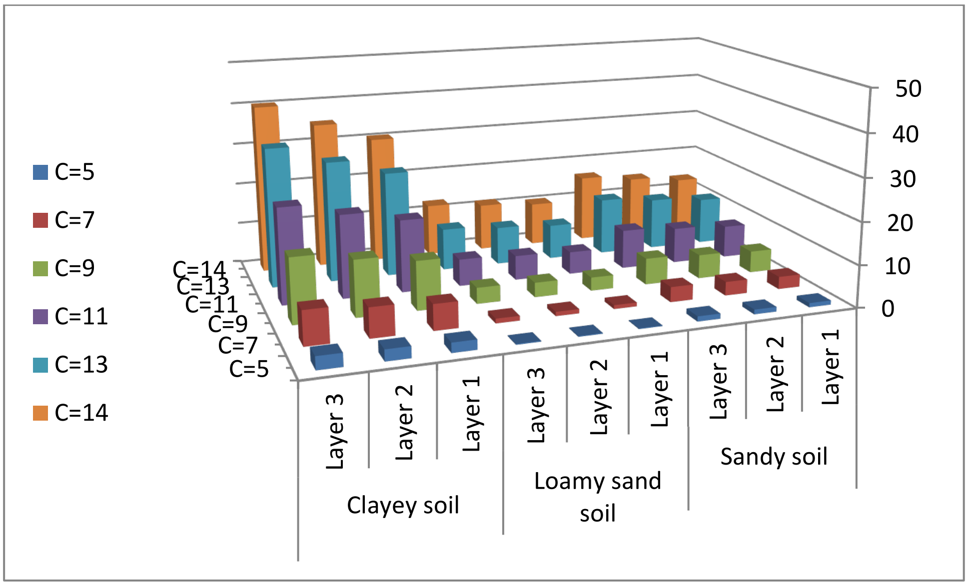

Figure 9: Different layer subsidence of various soil types.

Fig (9), shows that the highest effect of the water pressure variation acted on the deeper layer, or the nearest layer to the pipe defect, that in turn means that the smallest vertical displacement appears in the farthest soil layer, or by another word the ground surface. Furthermore, the findings revealed that the surface layer was lower than the nearest layer to the crack by 21% for sandy soil, while the clayey settlement was decreased by 32% from the first layer. The Plate (2) shows the schematic diagram of the soil chamber and the distribution of layers in it.

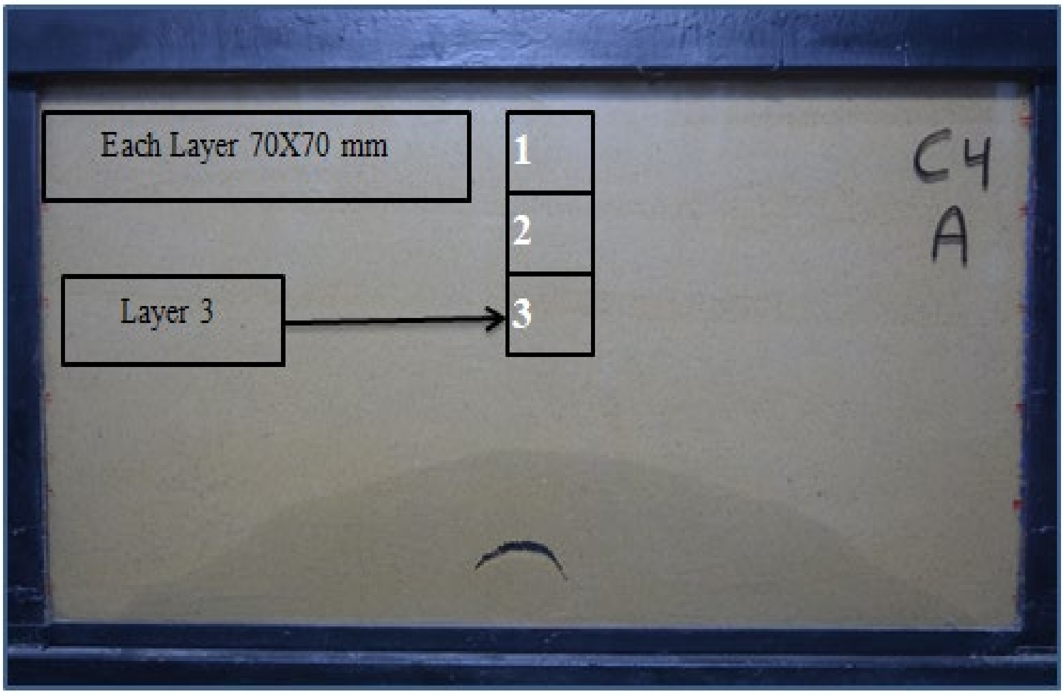

Plate (2): The schematic diagram for soil chamber and layer distribution

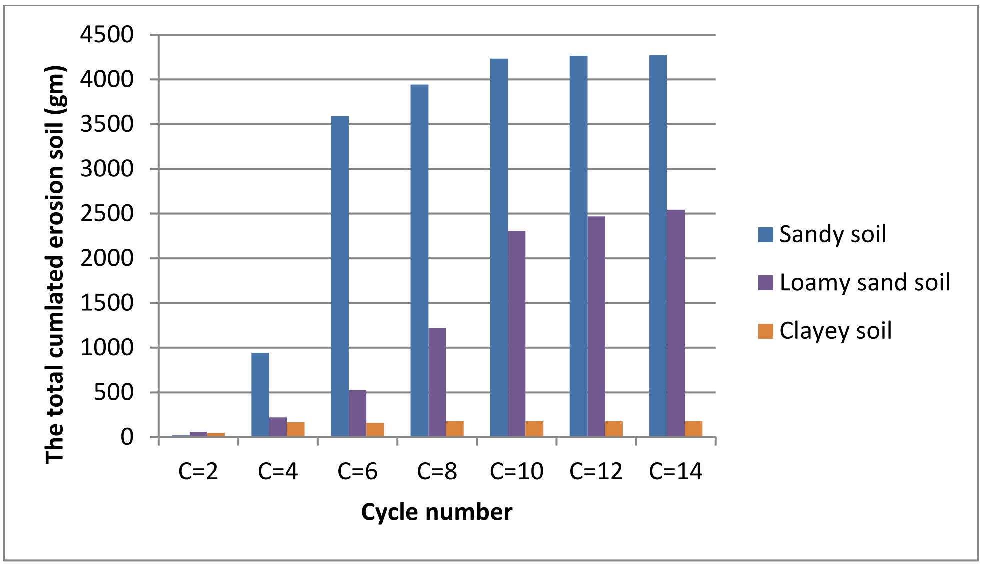

Figure (10): Total cumulated soil for different cycles recorded during the experimental test.

Moreover, the outcomes show that the higher accumulative eroded soil was the sandy soil with 24 times more than the clayey soil, which in turn lower the loamy soil by 14.3 times, the results were in good agreement with Karpf study [14], as demonstrated in Fig (10).

CONCLUSIONS

The following conclusions are taken from the results analysis of the present study:

- The pressure of water in the sewer pipes has significant effects on the amount of soil entered into the sewer pipe, where the total volume of collected erosion soil is directly proportional to the water head. The results revealed that the increment of the total eroded soil reached 3.95 times with a water head of 2.0 m than of 0.8 m.
- Different soil types are suffering from different types of failure, where the sandy soil fails by cavity formation and expansion and the clayey soil failure represented by high settlement(settlement for clayey soil 2.93 times more than loamy sand soil, while this soil has the smallest amount of eroded soil with 24 times lower than sandy soil).
- It was found that when the water pressure is more than one 1.1 the sandy soil will be more prone to erosion. Also, soil particles of bigger sizes have a higher portion in that cycle that was at the beginning of voids creation than that of fine particle size.

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Author Contributions;

Basim. K. Nile. (Professor) and Jabbar. H. Al-Baidhani. (Professor) supervised the student. Where Hussein.H.Khudhair. (M.Sc. student) conducted the research and investigation process and wrote the original draft.

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Methylene Blue Removal with New Adsorbent Derived from Truffle Peels

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Abstract: An experimental study was investigated to evaluate the removal efficiency of methylene blue (MB) dye from wastewater by using new adsorbent from truffle peels. Since raw truffle peels has low removal capacity so a new truffle peels activated adsorbent having hydrochloric acid groups was produced by activation using hydrochloric acid (5 M). In the present study, batch mode was conducted with different number of conditions such as pH, attach time, adsorbents dose and initial M.B concentration. According to the results, the removal efficiency of MB dye was 96.7% under the optimal conditions such as contact time was 60 min, pH of 6, the best initial MB dye concentration was10 mg l^{-1} and adsorbent dosage of 0.5 g. In addition, the optimal conditions of these parameters were used for Langmuir and Freundlich isotherm investigations. In adsorption process, which revealed that the higher adsorption capacity (qe) of MB dye was equal to 4.67 mg g^{-1}. All results which indicated that TPAC can be effectively employed for MB dye removal on larger scale.

Keywords**:** Adsorption, Methylene Blue dye, Truffle peels, Activated carbon

Water forms are a basis source for the permanence of life; however, the water resources are suffering from the industrial and domestic discharge (Rezakazemi and Shirazian 2019). The presences of dyes in the aquatic life is one of the topic significant environmental problems. Methylene blue (MB) dye which is considered as the more spread used dying raw in special sources (Mahmoud et al 2019). Different treatment techniques have been developed in order to contaminants extraction from wastewater. Due to simplicity of the experimental setup, high efficiency and no special apparatus is needed, the most extensively used technique chosen; adsorption (Ma et al 2019).

Many types of adsorbents such as activated carbon, zeolites and resins are used to remove the dyes, nutrients, and other contaminants from wastewater and the generality utilized is the activated carbon. Due to high cost of adsorbents mentioned above that leads to investigate a new cost-effective adsorbent, highly efficient and environmentally friendly from agriculture or industrial by-products (Mahmoud et al 2019). The present study will investigate the performance of the removal of MB dye onto truffle peels activated carbon (TPAC) under optimal condition such as the effect of pH, contact time, MB concentration and TPAC dosage. The equilibrium data will be analyzed using the Langmuir and Freundlich isotherm model will be evaluated. Table 1 shows the important previous studies on methylene blue removal from wastewater.

MATERIAL AND METHODS

The truffle peel (TP) as high effectively biomasses were collected from the products as waste. Chemicals such as MB dyes and other used chemicals such as hydrochloric acid (HCL) and sodium hydroxide (NaOH) for activation and functionalized of ACs were purchased from the scientific bureaus in Iraqi commercial markets. To pH calculation of samples, pH meter type (5011A, Ezodo, (Japan) model was used. Shaker type high-speed orbital (Daihan Lab tech (Korea). Memmert air oven type, (DZF, 2060) and the microwave muffle furnace, type Pyro 260 were used. The concentration of dye solutions was measured by using a double beam 6800 UV-visible spectrophotometer type JENWAY (In the department of Environmental Engineering at the Babylon University, Iraq).

Preparation of the Truffle peels activated carbon: An adsorbent is a porous nature with the ability to hold adsorbate particles onto its surface (Katheresan et al 2018). The production of activated carbon from truffle peels (TP) involved two steps: soaking and combined of carbonization and activation of peels. In the soaking step, the truffle peels were collected, cut into small pieces and cleaned with hot filtered water, then dried in an electrical oven at a 105°C for two hours (Khanday et al 2017). During this step, HCL (5M) (1 g of peels impregnate in 2 ml of 5M of HCL) was added it carefully into the vessel including the peels at 25°C and an impregnation time of twenty-four hours and after then dry in an oven at a 120°C for one hour. The second step for the preparation, the peels were putted on a mineral dish and display to an average temperature of 500°C for one hour (Ballav et al 2018). After one hour of carbonization time, washed with distilled boiling water until the wanted value of pH was obtained (6.5), and the product was dried in an electric oven at 120 °C in order to remove any unwanted moisture within the particles. Thereafter, the peels were grinded by using a manual grinder into fine particles size and sieved through stainless steel sieve (sieve No. 300 and 600) to get powdered activated carbon of TP. In order to get rid of any unwanted ash minutes and any moisture within the particles, the powdered activated carbon of TPAC was washed with filtered water and dried in an electric oven at 100°C respectively. Finally, it placed in glass containers to be used in the experiments of water and wastewater treatment, sample of TPAC is shown in the Figure 1.

Batch adsorption experiments: Batch mode was studied to discuss the isotherm and efficiency of Methylene Blue (MB) and removal onto the TPAC adsorbents, using synthetic aqueous solution as shown in Fig.2. The stock solution of MB dye was prepared from dissolved amount of MB in 1000 ml of distilled water (50 mg l^{-1} to 500 mg l^{-1}) and all experiments were achieved at room temperature, Figure 2 shows the schematic diagram of butch procedure. The determination of the amount of the concentration of MB remaining in solution at λ max = 653 nm. The amount of MB adsorbed per unit mass and dye removal efficiency were estimated using the following expression given in equation 1 and 2:

$$Qe = \frac{(Co\text{-}Ce)*V}{W} \qquad (1)$$

$$R(\%) = \frac{(Co\text{-}Ce)*100}{Co} \qquad (2)$$

Where qe (mg g^{-1}) indicate the equilibrium adsorption capacity of MB adsorbed per gram of the TPAC, C0 and Ce (mg l^{-1}) the initial and equilibrium MB concentrations respectively, V the volume of the MB solution (L), and W the TPAC mass (g).

Table 1. Important works on methylene blue dye removal from waste water

Researches	Adsorbent	Objectives or results
Hameed and Ahmad (2009)	Garlic peel (GP)	Efficient and high removal of MB dye
Subramaniam and Ponnusamy (2015)	Novel adsorbent from a cashew nut shell	Good agreement between the experimental and predicted value
Mahmoodi et al (2018)	Mesoporous activated carbons from different agricultural peels, including kiwi peel (KP), cucumber peel (CP), and potato peel (PP)	Produced ACs eliminate dyes from wastewater systems
Akköz et al (2019)	Prepared biomaterial from hawthorn kernel (HK)	produced is ACs efficient for the removing MB dye

RESULTS AND DISCUSSION

Parameters Affecting the Adsorption Procedure

Effect of pH and contact time: The most significant parameter in batch experiments is pH since the adsorbent surface charge strongly affects the surface charge of the adsorbent. The different value of pH (4, 6, 7, 8 and 10) was adjusted by HCl and NaOH at the adsorbent dose (0.5) mg l^{-1}, fix mixing speed (250 rpm), with initial MB concentration (10) mg l^{-1} of, for a certain agitation time (20, 40, 60, 80 and 100 min) to reach the equilibrium point. On the other hand, the effect of attach period on the adsorption was studied by adsorbent mentioned above as shown in the same Figures. In the beginning, the percentage of removal was significantly increased with an increase in contact time then reaching an equilibrium point and it starts to decline. It is clear that the sorption rate was rapid at the initial stage and gradually remains constant (i.e. the equilibrium time). According to the results, the optimum removal of MB dye was 96.7% under conditions of pH 6 and equilibrium time was 60 min (Fig. 3).

Effect of adsorbents dosage: The adsorption of Methylene Blue (MB) by different masses of the TPAC (0.1, 0.2, 0.3, 0.4 and 0.5 g) was studied as a function of contact time. Determining the optimum dosage at equilibration time and is critical for determination of the adsorption capacity and the

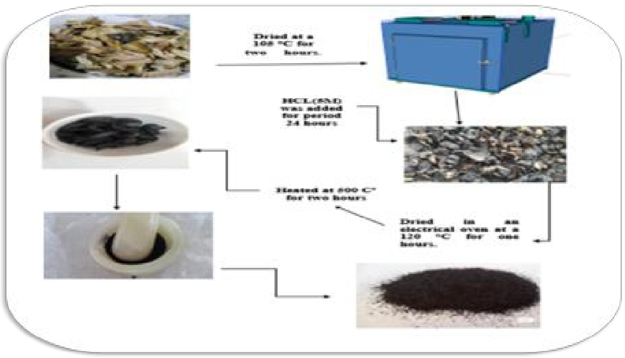

Fig. 1. Schematic diagram of preparation steps of TPAC

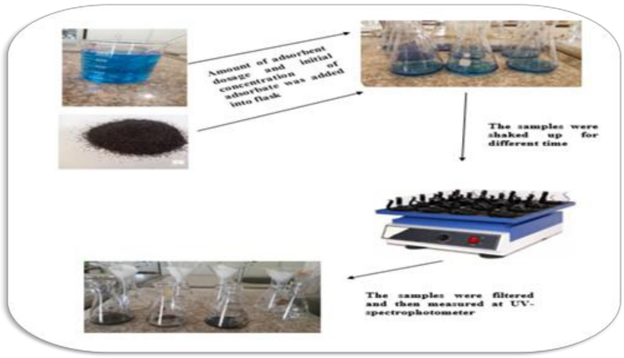

Fig. 2. Schematic diagram of butch procedure

influencing factors (Fig. 4). The higher dose provides an increase in the available surface areas that were introduced by increasing the number of adsorbent particles, resulting in more adsorbate ions being removed by increasing weight of adsorbent (Narges et al 2017).

Effect of initial concentration: The effect of initial concentration can be carried out by prepare adsorbent-adsorbate solution with fixed adsorbent dose and different initial adsorbate concentration for different time intervals and shaken until equilibrium and the percentage of removal of adsorbate is highly dependent on the initial amount of adsorbate concentration. The effect of the initial concentration factor depends on the immediate relation between the concentration of the contaminants and the available binding sites on an adsorbent surface. Generally, the percentage of dye removal decreases with an increase in the initial dye concentration, which may be due to the saturation of adsorption sites on the adsorbent surface (Selvaraju and Bakar 2017). The present batch tests were carried out with various MB dye concentrations (10, 20 and 30 mg l^{-1}) at optimum other parameters that previously measured (Fig. 5).

Equilibrium models: Adsorption process is usually studied through graphs known as adsorption isotherm that is defined as the relationship between the quantity of adsorbate per unit of adsorbent qe and its equilibrium solution concentration Ce in constant temperature, moreover, the quantity adsorbed is always represent by the mass of the adsorbent to allow comparison of different materials (Arshad et al 2016). Several adsorption isotherm models including Langmuir and Freundlich, were used to fit the experimental data. The isotherm was represented by the linear plot of specific adsorption (Celqe) against the equilibrium concentration (Ce) Figure 6.

Langmuir isotherm model: Langmuir model relates the coverage of molecules on a solid surface to concentration of a medium above the solid surface at a fixed temperature (Stjepanović et al 2019). The Langmuir equation is state as flowing:

$$qe = \frac{Qo\ b\ Ce}{(1 + b\ Ce)} \qquad (3)$$

Where Ce is the equilibrium concentration of the adsorbate (mg l^{-1}), qe is the amount of adsorbate adsorbed per unit mass of adsorbent (mgg^{-1}), Qo and b are the Langmuir constants related to the adsorption capacity and the rate of adsorption, respectively.

The essential characteristics of the Langmuir isotherm can be expressed in terms of a dimensionless equilibrium parameter (RL) (Pirsaheb et al 2016), which is defined by:

$$Rl = \frac{1}{(1 + b\ co)} \qquad (4)$$

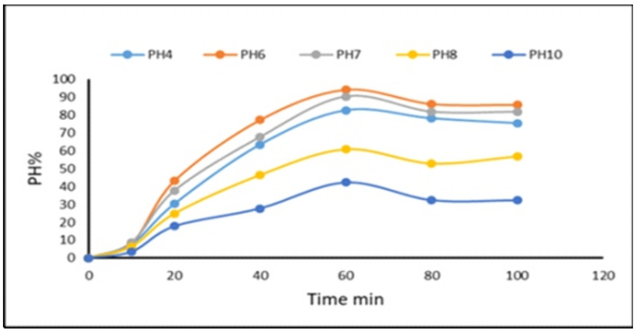

Fig. 3. Removal efficiency of MB adsorption as a function of PH and Contact Time, (Co=10 mg/L, pH=6, Temp. =25±1°C, S=250 rpm)

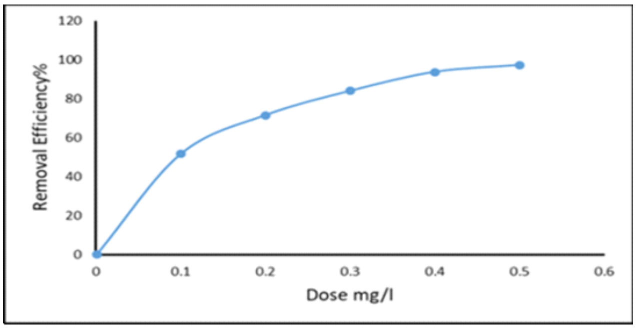

Fig. 4. Removal efficiency of MB adsorption as a function of adsorbent dose, (Co= 10 mgl^{-1}, pH=6, Time= 60 min, Temp. =25±1°C, S=250 rpm)

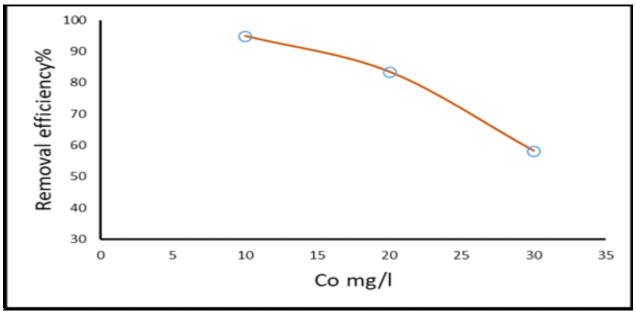

Fig. 5. Removal efficiency of MB adsorption as a function of initial concentration, (dosage=0.5 g, pH=6, Temp. =25±1°C, S=250 rpm)

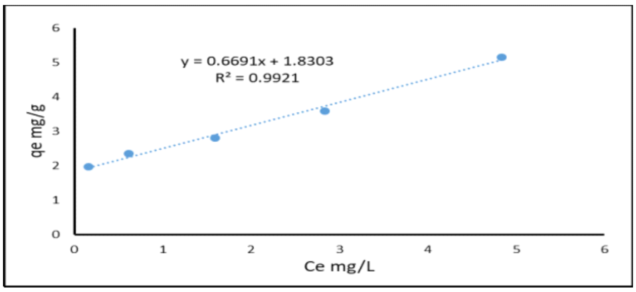

Fig. 6. Experimental isotherm fitting to MB dye adsorption data

Where b is the Langmuir constant, and Co is the highest dye concentration (mg l^{-1}).The value of RL indicates the type of the isotherm to be unfavorable (RL > 1), linear (RL = 1), favorable (0 < RL < 1) and irreversible (RL = 0). Langmuir isotherm takes into account the monolayer adsorption of adsorbate molecules onto homogeneous surface of adsorbent without any interaction between the adsorbed molecules (Rashid et al 2017).

Freundlich adsorption isotherm: This empirical equation is very useful and it consider non ideal adsorption on heterogeneity surface because it accurately describes much adsorption data, and is stated as follows: The Freundlich isotherm, on the other hand, assumes

$$qe = KCe^{1/n} \quad (5)$$

and can be linearized as follows:

$$\log qe = \log K + (1/n) \log Ce \quad (6)$$

Where the qe is the amount of adsorbate adsorbed per unit mass of adsorbent (mgg^{-1}), Ce is the equilibrium concentration of the solute remaining in solution (mg l^{-1}), K and n are the Freundlich constants with giving an indication of how favorable the adsorption process. The slope of 1/n ranging between 0 and 1 is a measure of the adsorption intensity or surface heterogeneity, becoming more heterogeneous as its value gets closer to zero (Rashid et al 2017). The amount of MB that adsorbed per unit mass of TPAC (mg g^{-1}) can be obtained from equation (1), while Langmuir isotherm can obtain from plot Ce via Ce/qe in the experimental data, were fitted to Eq.1 (Fig. 6 and Table 2), a high R2 value of 0.9921.

Langmuir model was found on Eq.3 (Fig. 7 and Table 2) to fit the adsorption data of MB quite well with R2 = 0.9028 and amount of MB that adsorbed onto TPAC. Regarding to Freundlich isotherm model, was particularly well with R2 = 0.8794 fitted to Eq.5 (Fig.7 and Table 2) which describe the multilayer formation of M.B on the heterogeneous surfaces of the TPAC. The n value for M.B was generally >1 and ranged 3.786, indicating favorable adsorption. Higher n value implies stronger interaction between TPAC adsorbent and MB dye.

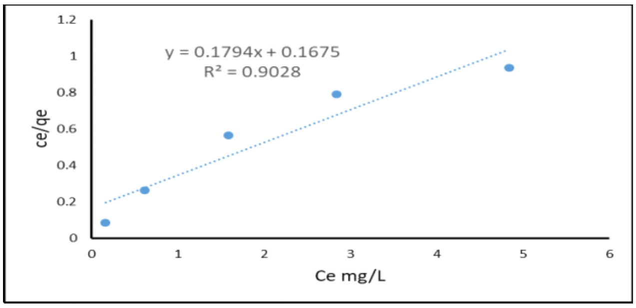

Fig. 7. Langmuir isotherm model fitting to MB dye adsorption data

Table 2. Adsorption isotherm constants for MB adsorption on to GAC and TAC

Langmuir constants				
Adsorbents	Q_o (mg g^{-1})	b (mg l^{-1})	RL	R^2
Truffle peels activated carbon (TAC)	5.57413	1.07105	0.03018	0.9028
Freundlich constants				
Adsorbents	K (mg g^{-1})	1/n		R^2
Truffle Peels Activated Carbon (TAC)	2.8707	0.2641		0.8794

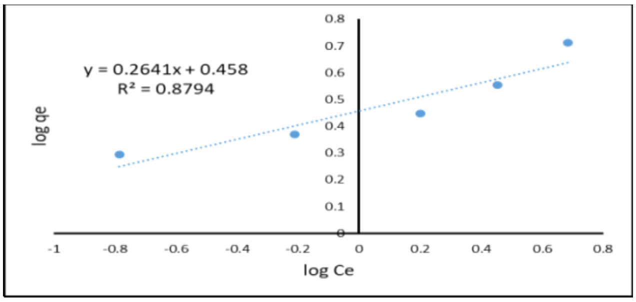

Fig. 8. Freundlich isotherm model fitting to MB dye adsorption data

CONCLUSIONS

In this research work, the Truffle peels activated carbon was found highly effective for the color removal of MB dyes from water samples. The investigated dyes were eliminated from aquatic solutions with optimum condition. The Langmuir isotherm model was better than Freundlich isotherm model. With regarding of future researchers, should further investigate combined adsorbents instead of stand-alone adsorbents. It has already been established that truffle peels activated carbons are exceptional bioadsorbents sorbents, so, in order to further improve dye removal with combined adsorbents. In addition, future researchers should conduct more studies on this area to cover the existing gaps and make improvements on the adsorption method as well as the choice of adsorbent.

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SPATIAL, TEMPORAL VARIATION OF PHYSIO-CHEMICAL PROPERTIES IN TIGRIS RIVER WITHIN BAGHDAD CITY, IRAQ

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Abstract
This study was conducted to study the spatial and temporal physicochemical properties of the Tigris river within Baghdad city by selecting five stations for eight months from January to August 2022. The study showed an increase in TDS values at stations of the upstream part (Baghdad Park) of the study area to the downstream (Tuwaitha) it is recorded of TDS concentrations of (1154 and 403) ppm respectively, and it is noted that those values increase compared to the values of the wet months. The variation in cations and anions values due to multiple sources of pollution like (sewage discharge, agriculture activities and industrial wastes). The mean concentration values of NO3 varied between (5.52±0.702) ppm at Baghdad Park station and (1.25±0.76) ppm in Tuwaitha station. The Concentrations of TDS were more than Iraqi standards recommended values for drinking-water quality except in January, February, and Mach in Baghdad Park, Medical City, Ahrar Bridge respectively.
The results of the Simple Correlation Coefficient (r) indicated that there is a positive and significant linear relationship between the average positive ions (Na+, K+, Ca2+ and Mg2+) with the average electrical conductivity values (micro-siemens cm-1) and with all factors. The relationship between the indicators of negative ion concentrations (Cl-, NO3-, PO43- and SO42-) for all stations used in the present study was evaluated through the studied time periods (Y) with electrical conductivity (EC) using the Least Square Analysis technique. The results showed that there was a positive and significant correlation at the probability level 5% and the coefficient of determination was ranged between 96.4% for chloride ion.
Key word: Temporal, Spatial, Variation, Tuwaitha, Tigris river.

1. Introduction

Iraq is an arid country at least in the central and southern parts. The water problems, poor management, technical problem, real demand for water has rapidly increased over the past few years and this has resulted in water scarcity in many parts of Iraq. On the other hand, the prevalence of drought conditions caused by climatic changes. (Nada, 2022).
Natural water has different types and quantities of contaminants depending on the location, season, and other variables. Geology, climate, geography, biological processes, and land use are a few of these variables. Physical characteristics such as water temperature, turbidity, and total hardness of

the river water can be good indicators for determining pollution. Similarly, chemical characteristics (electrical conductivity, pH, concentrations of K+, Na+, Cl-, and NO3- etc.) represent key parameters in monitoring and identifying pollution in river water (Chapman, 2003). Microbiological contamination is also an important factor with regard to the treatment requirements and safe recycling of effluents in river waters (Basílico and Faggi, 2015). The Tigris river is the only source for potable water supplies, fish consumption and farming, agricultural water supply, and also used for navigation, recreation, and industries in Baghdad. Hence, and according to the recommendations of the World Health Organization (WHO, 2002), it's very important to keep monitoring and evaluating the river water quality by conducting frequent ecological, biological, and physic-chemical assessments and examination of water supplies.

Many physical-chemical and Hydrogeological studies of the Tigris river have been conducted on Baghdad city (Al-Bayatti, 2012: Al-Ani et al, 2014: Falih, 2016: Ewaid et al, 2018: Al-Ani, 2019). To utilize and protect water resources (Tigris river) it's necessary to study the temporal, special physicochemical parameters of (pH), electrical conductivity (EC), total dissolved solids (TDS), total hardness (TH), major anion concentrations, in order to assess water quality of river water. The aim of the present study was to assess the temporal and spatial physic-chemical water quality parameters of Tigris river water in the selected sites within Baghdad city.

The aim of this study that evaluation the special, temporal variations of physicochemical properties and their correlation between all parameters.

1.1 Site Description

The study area is located at (latitudes 44 34 13.9 - 44.20 801 N and longitudes 33 08 32.8 -33 25705E). The length, width of Tigris river in the study area is about, 58.5 km and 190-500m respectively. The region is characterized by a semi-arid climate, The maximum of temperature, potential evaporation and annual rainfall is about 380C, 254mm mm/year and 24mm respectively. Geologically, the study area is relatively simple represented by the Quaternary deposits (Pleistocene), (Jassim and Goff, 2006).

2. Methodology

2.1 Water sampling

Monthly samples were collected, at January, February, March, April, May, Jun, July, August at 2022. Water samples were taken for five locations from the Tigris river within Baghdad city, The first sampling site was selected in Baghdad park, while the last sampling site was selected in the Tuwaitha area (Figure. 1). The sample were placed in high-density 1.5 L polyethylene sampling bottles to be washed with distilled water to transport to the laboratory. In the field, network monitoring stations were chosen to determine the spatial, temporal of physical-chemical properties in the study area. The data of these five water quality sampling stations consist of water quality parameters. The chosen parameters are given below: electrical conductivity (EC), total dissolved solids (TDS), Sulfate (SO4), total hardness (T.H), sodium (Na), potassium (K), calcium (Ca), magnesium (Mg), chloride (Cl), Bicarbonate (HCO3) nitrate (NO3) and Heavy metals (Cd, Zn, Pb). the name of water samples in the study area as presented in Table 1.

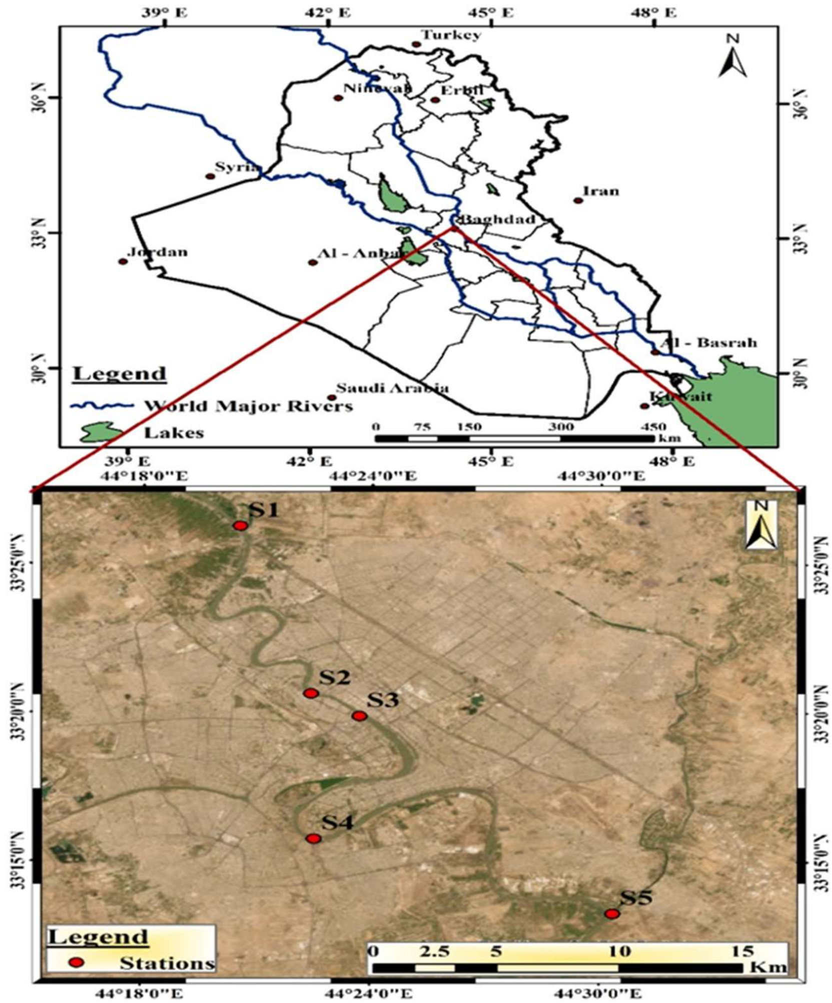


Figure 1. Map of study area (Google earth).

Table 1. Name, symbol, and coordinates of stations in the studied area.

Station Name	Symbol	E-latitude	N-longitude	Elevation (m)
Baghdad Park	S1	33.437794	44.342155	32
Medical city	S2	33.343982	44.373703	29
Ahrar Bridge	S3	33.331368	44.394853	30
Dora station	S4	33.262522	44.505834	29
Tuwaitha	S5	33.220951	44.342354	28

2.2 Analytical methods

The analytical methods used for the water samples varied according to the parameters of interest. All field and laboratory determinations have been carried out in accordance with standard methods (APHA 2012). All bottles transported to the laboratory in the Department of Chemistry, water research ministry of Science and Technology, for analysis. Most of water quality parameters are expressed in milligrams per liter (mg L-1), except EC which is in (μS cm-1). Several analysis methods used Table 2.

Table 2. Instruments, devices used to chemical analysis of Tigris river.

Variables	Method
Cl^-, Ca^{2+}, Mg^{2+}, HCO_3, T.H	Titration method (APHA,2012)
Na^+, K^+	Flame photometer (APHA,2012)
SO_4, NO_3	Spector-photometer (APHA,2012)
Cd, Zn, Pb	Atomic absorption (APHA,2012)
pH	pH-meter
EC	EC-meter
TDS	Weight method (APHA,2012)

3.Results and Discussion

The spatial and temporal values of physicochemical parameters and total ion concentrations in several sample sites along the Tigris River within Baghdad city have been studied (Baghdad Park, Medical City, Ahrar Bridge, Dora, and Tuwaitha) the stations studied Table 3 and 4.

3.1 Spatial variation

The highest values of pH in water samples of studied area are 8.05 at (Ahrar bridge station) whereas the lowest values of pH are 7.13 at (Baghdad Park station). there is clear variation in pH values due to the affects the rate of chemical weathering and many other chemical processes (White 2013). The mean of EC and TDS in Tigris river within Baghdad city ranged from (809±62.5) to (1083±75.0) µs/cm, and from (518±40.0) to (694±48.0) mg/L, respectively (Figure 2). Generally, the highest mean values of Ca2+, Mg2+, Na+ and K+ in water samples of studied area are (66.7±1.53, 37.8±0.870, 136±6.98 and 11.48±0.264) at Tuwaitha station whereas the lowest values of Ca2+, Mg2+, Na+ and K+ are (49.1±1.21, 27.8±0.86, 103±6.35 and 7.14±10.15) at Baghdad Park station respectively. For anions. The highest mean values of Cl-, and SO42- in water samples of studied area are (89.9±5.87 and 261.8±17.8) at Tuwaitha station whereas the lowest mean values of Cl-, and SO42- are (81.6±5.19 and 174.4± 11.5) at Baghdad Park respectively. The change in the levels of the cations and anions may result from a variety of sources, including sewage discharge, agricultural activities, and industrial pollutants. Mean concentration values of NO3- varied between (5.52±0.702) ppm in Baghdad Park and (1.25±0.76) ppm in Tuwaitha station.

Table 3. Mean + SD and Rang values of physic-chemical characteristics of the Tigris river for the five stations in Baghdad.

Parameter		Site				
		Baghdad Park	Medical City	Ahrar Bridge	Dora	Tuwaitha
EC $uSsm^{-1}$	Range	475-1374	591-1453	597-1485	624-1524	738-1803
	Mean+SD	(809±62.5)	(872±64.8)	(895±66.0)	(927±66.3)	(1083±75.0)
pH	Range	7.13-7.78	7.19-7.79	7.16-8.05	7.17-7.95	7.14-7.78
	Mean+SD	(7.45±0.048)	(7.44±0.046)	(7.35±0.041)	(7.35±0.042)	(7.45±0.052)
TDS mgL^{-1}	Range	304-879	378-930	382-950	399-975	472-1154
	Mean+SD	(518±40.0)	(558±41.5)	(573±42.3)	(594±42.2)	(694±48.0)
TH	Range	249-354	256-360	274-390	285-439	340-473
	Mean+SD	(295±6.93)	(299±6.57)	(304±6.78)	(314±6.10)	(326±7.50)
Na mgL^{-1}	Range	70-162	87-180	88-172	92-176	109-192
	Mean+SD	(103±6.35)	(112±6.98)	(114±6.60)	(118±6.64)	(136±6.98)
K mgL^{-1}	Range	7.14-10.15	7.36-10.34	7.87-11.19	8.18-12.37	9.76-13.59
	Mean+SD	(8.46±0.208)	(8.71±0.204)	(9.36±0.225)	(10.07±0.291)	(11.48±0.264)
Ca mgL^{-1}	Range	41.5-59.0	42.7-59.0	45.7-65.0	47.5-71.8	56.7-78.9
	Mean+SD	(49.1±1.21)	(50.5±1.15)	(54.4±1.31)	(58.4±1.69)	(66.7±1.53)
Mg mgL^{-1}	Range	23.5-33.4	24.2-34.0	25.9-36.8	26.9-40.7	32.1-44.7
	Mean+SD	(27.8±0.684)	(28.7±0.670)	(30.8±0.741)	(33.1±0.959)	(37.8±0.870)
Cl mgL^{-1}	Range	55-125	58-122	62-130	58-131	60-139
	Mean+SD	(81.6±5.19)	(82.9±5.13)	(88.8±5.45)	(86.2±5.54)	(89.9±5.87)
SO_4 mgL^{-1}	Range	102-252	104-255	112-267	131-325	150-385
	Mean+SD	(174.4±11.5)	(177.1±11.6)	(188.0±12.1)	(224.8±14.85)	(261.8±17.8)
NO_3 mgL^{-1}	Range	2.03-9.91	2.54-12.0	2.98-15.4	3.46-16.43	3.69-17.93
	Mean+SD	(5.52±0.702)	(6.87±0.877)	(7.82±1.07)	(8.97±1.20)	(9.23±1.25)
Cd mgL^{-1}	Range	0.010-0.019	0.017-0.035	0.0140.041	0.015-0.045	0.012-0.053
	Mean+SD	(0.017±0.001)	(0.020±0.001)	(0.022±0.002)	(0.024±0.002)	(0.030±0.003)
Cu mgL^{-1}	Range	0.002-0.066	0.045-0.076	0.029-0.088	0.032-0.097	0.068-0.115
	Mean+SD	(0.040±0.003)	(0.042±0.003)	(0.048±0.004)	(0.052±0.004)	(0.063±0.004)
Pb mgL^{-1}	Range	0.041-0.123	0.059-0.141	0.054-0.163	0.060-0.179	0.170-0.213
		(0.067±0.005)	(0.082±0.005)	(0.088±0.007)	(0.095±0.007)	(0.137±0.009)

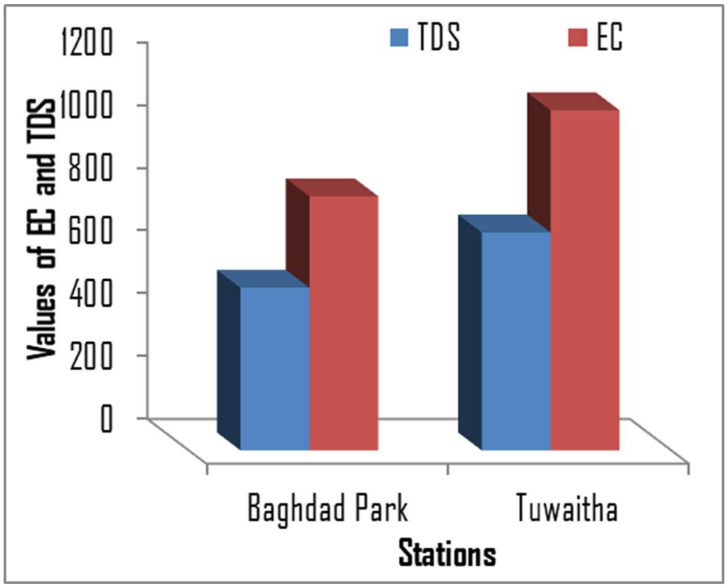


Figure 2. Highest, lowest values of EC, TDS values in the study area

The mean values of Cd, Cu, and Pb in the analyzed samples varied between (0.040±0.003 to 0.063±0.003), (0.040±0.003 to 0.063±0.004), (0.067±0.005 to 0.137±0.009) respectively.

The highest range of EC were recorded in Tuwaitha station were (738-1083) with mean of (1083±75.0) while the lowest range were recorded in Baghdad Park were (475-1474) with mean of (809±62.2). the Changes in conductivity can reflect changes in other chemical parameter such as cations, anions, TDS, and biological water properties (Welch et al. 2001).

The concentrations of the major cations in the water samples in the study area are of the order: Na+> Ca2+> Mg2+> K+, whereas the anions have the order of: SO42-> Cl-. The general water types are CaSO4 in all studied samples. The variation in cations and anions values in the study may be due to multiple sources like sewage discharge, agriculture activities and industrial wastes), In the present study, the TDS values were ranged from (304 to 879) ppm in Baghdad Park station and from (472 to 1154) ppm at Tuwaitha station. However, (TDS) values are fluctuated in different sites. The fluctuation of electrical conductivity and TDS at study area are possibly due to many factors such as storm water runoff that discharged from farms. Increased value of TDS was observed in Tuwaitha station due to the presence of various pollutants in river which may be due to wastewater disposal from Rysutumia wastewater treatment plant. The relation of spatial variations of total hardness, Ca2+, and Mg2+ contents in Baghdad Park and Tuwaitha samples in the study area were differ in the level of water hardness. This due to the vary significantly due to geological conditions, climate, sewage discharge from Al-Rystumiah wastewater treatment plant and human activities.

3.2 Temporal Variation

The pH variation was ranged between (7.13-7.34) with mean of (7.24±0.026) in January 2022 and from (7.59 to 8.05) with mean of (7.79±0.043) in in August. the highly value of pH was recorded in August and low water pH was recorded in January. The high range values of EC and TDS recorded were (1201-1803) with mean of (1451±49.3) and (769-1154) with mean of (903±31.5) in August respectively. While the lower values of EC and TDS were recorded on January with values of (475-771) and (304-493) respectively. The highest range values of Ca2+, Mg2+, Na+ and K+ in water samples of studied area are (53.5-78.9, 30.3-44.7, 142-192 and 9.21-13.6) on August month, whereas the lowest values of Ca2+, Mg2+, Na+ and K+ are (41.5-61.1, 23.5-34.6, 70-114 and 7.14-10.5) were recorded on January month, respectively. For anions the highest range values of Cl-, and SO42- in water samples of studied area are (114-139) and (210-385) on August month whereas the lowest range values of Cl-, and SO42- are (55-63) and (102-187) on January month respectively. The variation in cations and anions values in all studied months may be due to storm water runoff and multiple sources of pollution pile (sewage discharge, agriculture activities and industrial wastes), the mean concentration values of NO3 varied between (3.30±0.702) ppm in January month and (13±4.11) ppm in August month.

The mean values of Cd, Cu, and Pb in the analyzed samples varied between (0.018±0.006 to 0.37±0.012), (0.040±0.013 to 0.072±0.023), (0.078±0.027 to 0.137±0.043) respectively.

Table 4. Mean +SD and Rang concentrations of values of physic-chemical characteristics of the Tigris river.

Parameter		-- Month ---							
		January	February	March	April	May	June	July	August
EC uSs m^{1}	Range	475-771	617-1004	632-993	655-1025	715-1073	907-1221	1009-1467	1201-1803
	Mean+SD	623±27.6	706±37.1	737±30.5	824±32.9	861±30.3	1007±31.7	1133±39.8	1451±49.3
pH	Range	7.13-734	7.22-7.52	7.26-7.61	7.14-7.42	7.19-7.56	7.28-7.61	7.36-7.65	7.59-8.05
	Mean+SD	7.24±0.026	734±0.035	7.43±0.038	7.22±0.029	7.41±0.036	7.45±0.038	7.49±0.034	7.79±0.043
TDS mgL^{-1}	Range	304-493	395-643	404-636	418-656	458-687	580-781	646-939	769-1154
	Mean+SD	398±17.6	430±23.8	454±19.6	513±21.1	536±19.4	629±20.2	701±25.5	903±31.5
TH mgL^{-1}	Range	249-367	257-379	266-392	281-415	284-418	293-432	303-447	321-473
	Mean+SD	296±12.4	305±12.8	316±13.2	334±14.1	337±13.9	349±14.2	361±14.9	382±15.8
Na mgL^{-1}	Range	70-114	79-128	88-107	89-134	93-151	103-168	125-151	142-192
	Mean+SD	91.9±29.1	90.0±28.5	97.1±30.7	108±34.1	122±38.6	118±37.3	137±43.3	169±53.6
K mgL^{-}	Range	7.14-10.5	7.39-10.9	7.63-11.3	8.09-11.9	8.15-12.0	8.42-12.4	8.69-12.8	9.21-13.6
	Mean+SD							10.3±3.2	

1		8.48±2.68	8.77±2.77	9.06±2.87	9.60±3.04	9.69±3.06	10.0±3.17	7	11.0±3.47
Ca mgL^{-1}	Range	41.5-61.1	42.9-63.2	44.3-65.3	46.9-69.2	47.3-69.7	48.9-72.0	50.5-74.5	53.5-78.9
	Mean+SD	49.3±15.6	50.9±16.1	52.6±16.6	55.7±17.6	56.2±17.8	58.1±18.4	60.1±19.0	63.6±20.1
Mg mgL^{-1}	Range	23.5-34.6	24.3-35.8	25.1-37.0	26.6-39.2	26.8-39.5	27.7-40.8	28.6-42.2	30.3-44.7
	Mean+SD	27.9±8.82	28.9±9.12	29.8±9.43	31.6±9.99	31.9±10.1	32.9±10.4	34.0±10.8	36.1±11.4
Cl mgL^{-1}	Range	55-63	63-76	67-79	73-89	68-78	87-105	100-118	114-139
	Mean+SD	59.9±18.9	69.1±21.9	73.4±23.2	79.9±25.3	74.2±23.5	95.3±30.1	110±34.7	125±39.5
SO_4 mgL^{-1}	Range	102-187	113-207	132-242	148-272	184-338	189-347	190-349	210-385
	Mean+SD	132±41.7	146±46.3	171±54.0	192±60.6	238±75.0	245±77.3	246±77.8	272±86.0
NO_3 mgL^{-1}	Range	2.03-4.61	2.39-5.00	2.87-6.18	3.79-6.64	5.41-11.6	7.62-16.6	7.85-16.1	8.06-17.9
	Mean+SD	3.30±1.04	3.70±1.17	4.32±1.37	5.34±1.69	8.32±2.63	11.6±3.66	12.4±3.91	13.0±4.11
Cd mgL^{-1}	Range	0.010-.038	0.012-.040	0.012-.041	0.013-.042	0.012-.026	0.013-.028	.017-.031	.025-.053
	Mean+SD	0.018±.006	.020±.006	.021±.007	.022±.007	.020±.006	.021±.007	.024±.008	.037±.012
Cu mgL^{-1}	Range	.022-.068	.025-.065	.026-.067	.028-.068	0.031-0.058	0.033-0.060	0.032-0.067	0.031-0.115
	Mean+SD	.040±.013	.042±.013	.043±.014	.044±.014	.046±.016	.048±.015	0.050±0.016	.072±.023
Pb mgL^{-1}	Range	.041-.170	.047-.180	.049-.183	.052-.189	.058-.126	.061-.113	.068-.124	.098-.213
	Mean+SD	.078±.025	.048±.027	.087±.027	.089±.028	.087±.028	.089±.028	.098±.031	.137±.043

The present study recorded significant changes in the values of cations and anions in studied months, decreasing of values may be due to dilution process by rainwater.

Depend on TDS values the water can be classified into four types: Type I, if the TDS (0-100) mg/l (Fresh water), (1000-10000) mg/l (Brackish water), (10000-100.000) mg/l (Saline water) and (100000) mg/l (brine water) (Todd, 2007), therefore, all samples are freshwater to Brackish water. The Concentrations of TDS were exceeded IQS recommended values for drinking-water quality except in January, February, and Mach in Baghdad Park, Medical city, Ahrar bridge respectively. The results of the Simple Correlation Coefficient (r) indicated that there is a positive and significant linear relationship between the average positive ions (Na+, K+, Ca2+ and Mg2+) with the average electrical conductivity values (micro-siemens cm-1) and with water quality parameters. The influential study included (months, stations and both sites) influencing at the level of 5% confidence (Figure 3). The results showed that the values of electrical conductivity, which is one of the important indicators in water pollution and determining its uses for various purposes, was more closely associated with the highest (r) values with the annual average of the concentrations of ions like sodium, potassium, calcium, and magnesium.

These results showed that the influence of these indicators on each other and there is a strong relationship between them, which is of great importance in predicting the concentrations of polluting positive elements according to changes in the independent factor [EC (independent factor)]. The highest correlation (r = 0.954) was associated with electrical conductivity with the concentration of sodium ions, followed by the average concentration of potassium ions (r = 0.942) for all study stations and through the different time periods of the study.

The lowest value of the correlation of positive ions with electrical conductivity was with the average concentration of magnesium and calcium ions (r = 0.935 and r = 0.934), respectively the correlation strength relationship (r) for the above indicators with (EC) can be arranged as follows: (Na>K>Mg>Ca). The results of these correlations are consistent with the results of the study shown in the results of the statistical analysis table 5, where it was shown that the concentration and effect of sodium and potassium ions in the saline effect were higher than the two-charged ions represented by calcium and magnesium, and that the predominant salts are sodium chloride salts.

Some studies indicated the existence of such a relationship between the absolute pollutant content of the indicators of concentration of positive ions and electrical conductivity (Uwidia Ita Erebho, 2022) and (Huang et al., 2015). (Mahmut Cetin et al., 2020) found the highest significant correlation (r = 0.960) between the concentration of sodium in groundwater with (EC), while the value of (r = 0.500) for calcium concentration with electrical conductivity (EC).

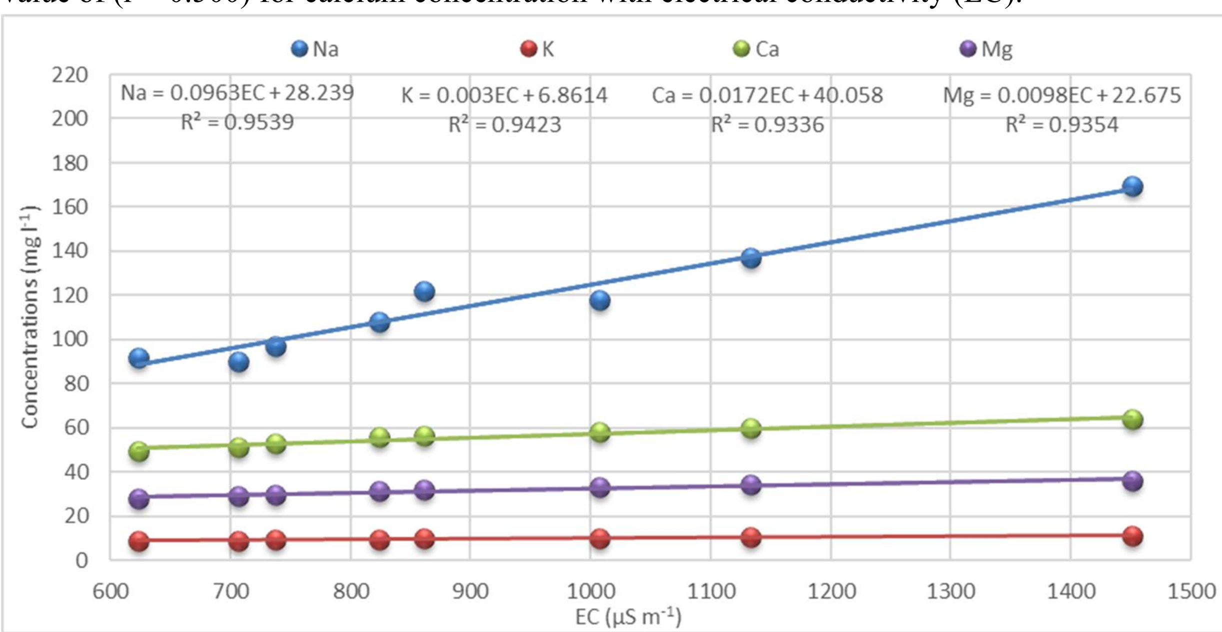


Figure 3: The Relationship between cation concentrations EC (µS m-1).

The relationship between the indicators of negative ion concentrations (Cl-, NO3-, PO43- and SO42-) for all stations used in this study before and after the downstream was evaluated through the studied time periods (Y) with electrical conductivity (EC) using the Least Square Analysis technique. The results showed that there was a positive and significant correlation at the probability level of 5% and the correlation coefficient that ranged between 96.4% for chloride, 83.7% for nitrate, 83.2% for phosphate, as well as 78.4% for sulfate between conductivity electrical and these indicators (Figure 4). The indicators of pollution increased by negative ions of chloride, nitrate, phosphate, and sulfate released from these stations and their impact on the increase in the salinity of the waters of the Tigris river. Chloride gave the most relative increase in the electrical conductivity index, and this is due to the dominance of the chloride ion in water absolutes, which led to an increase in the response of its effect on water salinity. This is consistent with what was confirmed by (Hector Peinado et al., 2012) in his study of the relationship between chloride concentration and electrical conductivity. The simple linear model was more practical in describing the relationship for a range of values corresponding to the electrical conductivity (EC ds.m-1) ranged between (0.15 – 95) Chloride (0.5 - 900) meq l-1 and in a linear relationship (Linear [Cl-] = 9.222 EC). Also, the results of the regression analysis indicated that the lowest efficiency (R2 x 100) was for sulfate ion (SO42-) with electrical conductivity (EC), and this is consistent with the results of the analysis of variance for this indicator in this study and that the absolutes of this station are from the sulfate ion is few compared to the rest of the negative ions studied. Liner correlation coefficient of examined water quality parameter in the study area Table 5 and Figure 5.

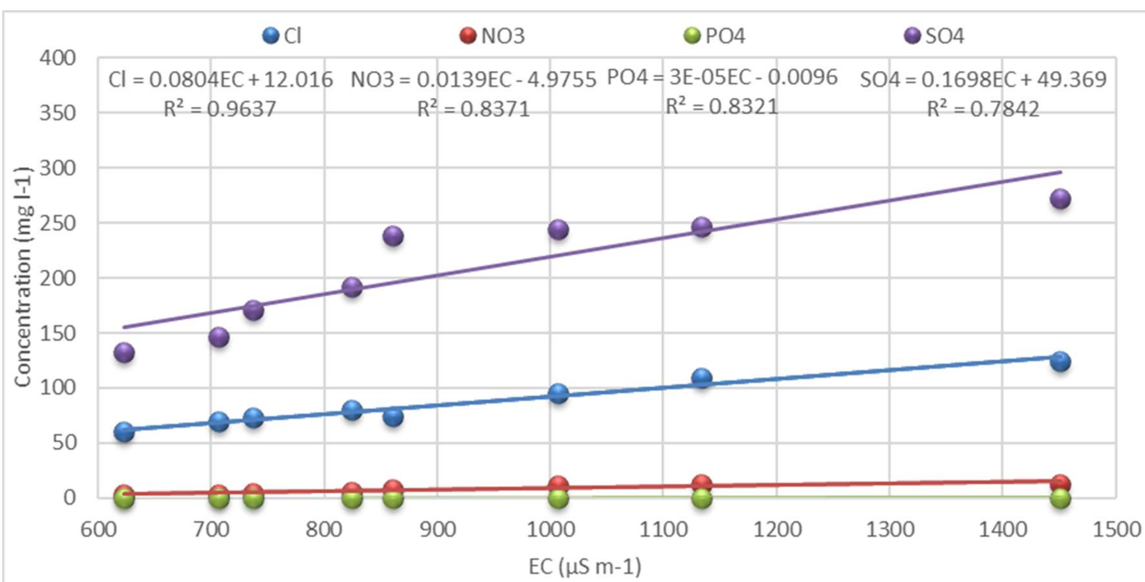
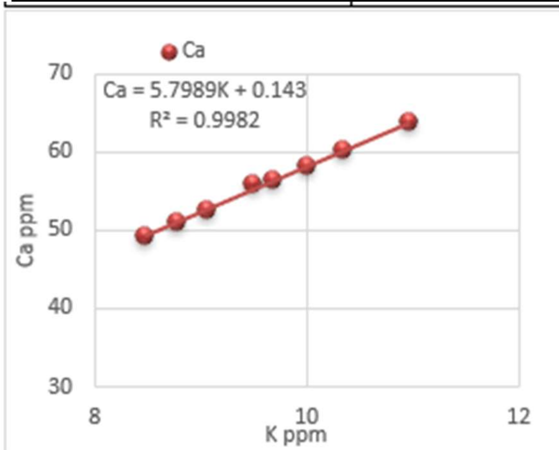
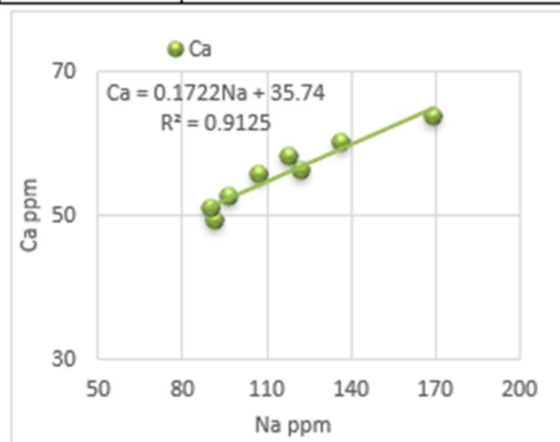


Figure (4): Correlation between negative ions and electrical conductivity.

Table (5). Liner correlation coefficient of examined water quality parameter in the study area.

Variable	Relationship	R^2	Liner correlation model
Na^+ With Cl^-	Positive	0.8663	Na=1.1206Cl+20.50
Na^+ and K^+	Positive	0.9207	K=0.0298Na+6.12
Na^+ with Ca^{2+}	Positive	0.9125	Ca=0.1722Na+35.74
Cl^- with K^+	Positive	0.921	K=0.0359Cl+6.52
Ca^{2+} with SO_4	Positive	0.9186	$Ca=0.0889SO_4+37.59$
Ca^{2+} with K^+	Positive	0.998	Ca=5.989K+0.143





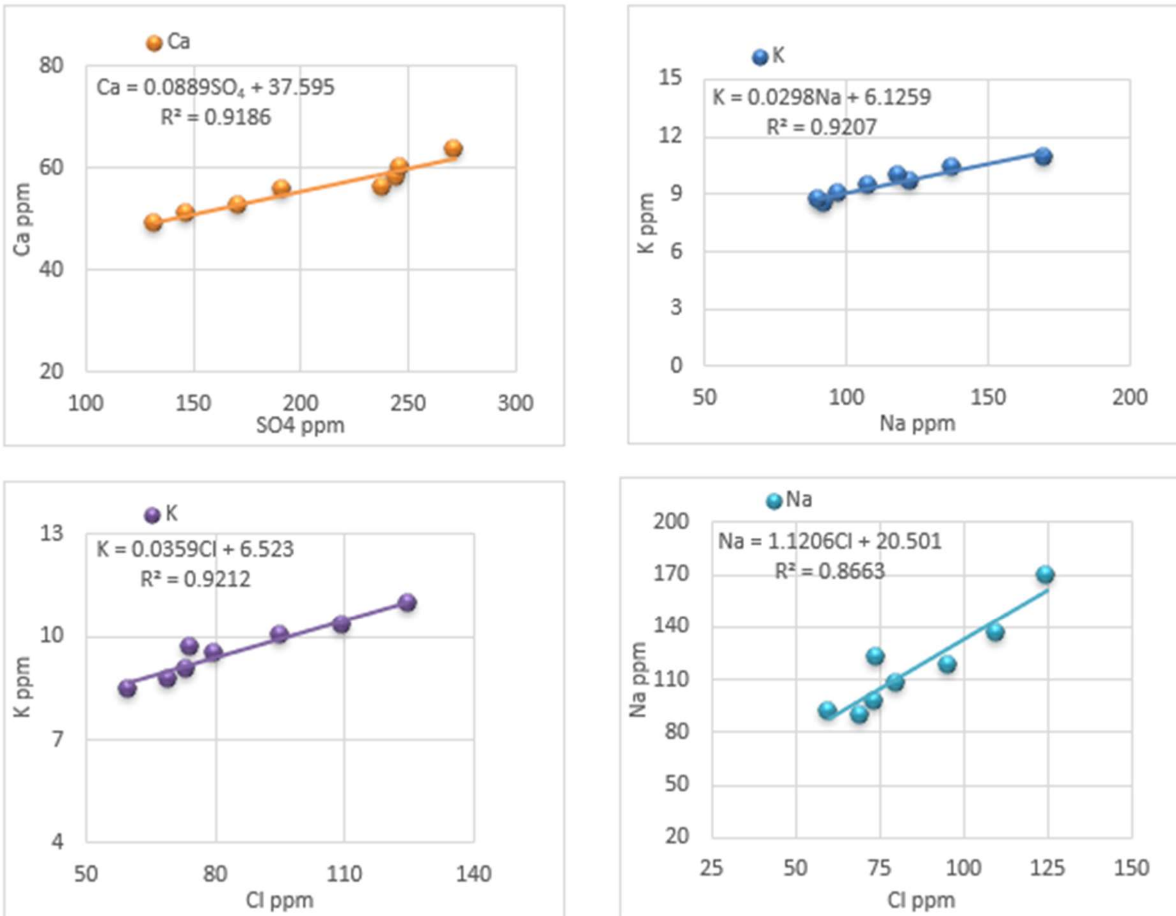


Figure 5. Simple Correlation Coefficient (r) between some chemical parameter of Tigris river in the study area.

4. Conclusions

This study examined the temporal and spatial variations in water quality parameters of the Tigris river within the city of Baghdad. The findings demonstrated that there is a distinct spatial and temporal variation in the cations and anions in the examined water samples as a result of the dilution process, residence time, local geological structure, and the transport factors of sediments (sand, mud, and silt), which are transported by rainfall. On the other hand, it was found that the Ca-HCO3 water type is the dominating hadrochemical facies in all locations in the study area. Differences in physicochemical parameters are happened due to human activity and geochemical processes. The total TDS levels in all of the water samples were higher than the IQS's recommended levels for drinking water quality, with the exception of January, February, and March months in the station of Baghdad Park, Medical City, Ahrar bridge respectively.

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SEEDS-BASED ACTIVATED CARBON FOR COPPER REMOVAL FROM GROUNDWATER

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Abstract

The current study investigates the possibility of preparing of cost-effective activated carbon from seeds that collected from local agricultural wastes. In this investigation, date palm seeds (DPCAC), peach seeds (PSAC), and apricot seeds (ASAC) were used to prepare activated carbon, which was used as a permeable reactive barrier (PRB) to remove copper (Cu^{+2}) from contaminated groundwater. Activated carbon has been prepared from these seeds using chemical activation method (using drenching agent, such as phosphoric acid (H_3PO_4)). The effect of different parameters such as the contact time, initial pH of the solution, agitation speed, initial copper concentration, and sorbent dosage was studied in batch experiments. The best removal of copper (95.54% for DPSAC, 88.64% for PSAC and 94.0% for ASAC) was obtained at contact time of 100 min for DPSAC and 80 min for both PSAC and ASAC, pH of 6, agitation speed 250 rpm, and sorbent dosage of 3 g/100 ml. The sorption data for Cu^{+2} ions, obtained by batch experiments, have been subjected to the Langmuir and Freundlich isotherm models. The results showed that Langmuir model provided the best description of sorption of Cu^{+2} onto DPSAC, PSAC and ASAC. COMSOL Multiphysics 3.5a software, based on finite element method, was used for solving of partial differential equations that describe the transformation of copper in the one–dimensional (1D) under equilibrium conditions. The predicted results (COMSOL solution) and experimental results showed that the PRB restricts the movement of ions of copper. However, predicted and experimental results proved that DPSAC has high affinity for copper ions in comparison with both PSAC and ASAC. Finally, a good agreement between the predicted and experimental results has been noticed because the root-mean squared error (RMSE) less than 0.1%, which proves the effectiveness of these tools in description of copper transportation.

Keywords: Activated carbon, Apricot seeds, Copper, Date palm seeds, Groundwater, Migration, Peach seeds, Permeable reactive barrier.

1. Introduction

Groundwater pollution represents a big challenge for many countries, especially for those countries who use it as a source for drinking or irrigation purposes [1]. Groundwater pollution is usually occurred because of the polluted seepage from the polluted areas [1]. Although the planet of Earth faces serious pollution problems, such as the huge production of solid wastes and soil pollution [2-9], water pollution is one of the most challenges problems due to the limited amount of this element in the ecosystem of this planet [10-12]. Although there are 11.4×10^9 km^3 of water in the ecosystem of the earth planet [13], very minor amount ($\leq$2.5%) of this vast amount is fresh water [14-18]. Unfortunately, this minor amount of fresh water is not completely available for humankind as the majority of fresh water is captured in glaciers, snow cover, and groundwater leaving about 1% of the fresh water available for drinking purposes [19-24].

In addition, the available amount of fresh water, nowadays, is subjected to an increasing pollution process due to the increasing global population and industrial growth [25]. Therefore, some forecasting studies confirmed that within the next few decades more than 50% of the world's population would not have enough drinking water [26-30]. Heavy metals is one of the most problematic forms of water pollution, which could be resulted from various industrial activities, such as mining operation, electroplating, oil processing plants and petrochemical industries [22, 31]. Phenomenon of heavy metal pollution is a predominant problem in the groundwater due to the abundant occurrence of heavy metals in the earth's crust.

Groundwater is defined as water found beneath the surface of the ground and seeped down from the surface by migrating through the spaces in geologic formations [32]. To control water pollution, different treatment methods, monitoring and sensing technologies, and management plans were developed [33-38].

According to the literature, the pump-and-treat technique was the most commonly used technology for treatment of polluted groundwater [39]. However, this technique is expensive, difficult to be operated and maintained, and time-consuming. In addition, trapping of contaminant mass in the pumping system results in the failure of pumps. Thus, permeable reactive barrier (PRB) technology has recently brought a big deal of attention as an effective alternative for treatment of groundwater [39].

For example, Faisal and Ahmed [40] developed a permeable reactive barrier, made from Kerbala's sand (KS) and waste foundry sand (WFS) (in equal ratio), to remove copper from shallow aquifers water in batch experiments. The obtained results indicated that this PRB has achieved a complete copper removal. Additionally, it has been found that the Langmuir model well represents the sorption process of copper on the PRB.

Fronczyk, et al. [41] investigated the ability of natural and engineered limestone PRB for the removal of copper from groundwater. Batch experiments were carried out at sorbent mass of 0.5 g, and 50 mL of contaminated solutions at different pH values. The results of this study indicated that the removal of copper using this type of PRB is very sensitive to the pH level, and the best removal efficiency, 94%, could be achieved at alkaline media (pH > 6.3). Gholami, et al. [42] investigated the possibility of using encapsulated magnesium peroxide (MgO_2) nanoparticles as PRB for removal of the hydrocarbon compounds, toluene and naphthalene, from groundwater in the continuous flow model. The obtained results indicated that toluene was metabolized slower than naphthalene by 10 days. Additionally, the results of this study indicated that 100% removal efficiency could be achieved in biotic conditions, while the presence of abiotic conditions decreased the removal of toluene to 36%.

In this context, the present study aims to prepare cost-effective activated carbon from agricultural wastes (seeds); namely date palm seeds (DPSAC), peach seeds (PSAC) and apricot seeds (ASAC). The prepared activated carbon will be used as PRB to remediate copper from polluted groundwater. It is noteworthy to highlight that the activated carbon has been used as a media for PRB, in the current study, because it has been demonstrated to be a powerful adsorbent for the elimination of extensive diversity of organic and inorganic contaminants from water and wastewater [43]. Additionally, activated carbon could be prepared through low-cost and simple processes [43].

2. Experimental Work

2.1. Materials and methods

Plant seeds, which have been collected from agricultural wastes, were initially cleaned and cut into small pieces (about 2 mm in both length and width). Then, these pieces were dried using an electrical oven at temperature 105 °C for two hours, and grinded using a household blender. The production of activated carbon from the mentioned seeds was carried out in the following stages: drenching, and carbonization and activation. Initially, the sliced seeds were placed in 1 L glass containers, and then phosphoric acid (1M) was decanted carefully into the containers at ratio of 4 ml of acid/2 g of seeds [44].

The solution was left for 24 hours at temperature of 25 °C. it is must be highlighted that both zinc chloride and phosphoric acids are used in the preparation of activated carbon, but the phosphoric acid is relatively safer than zinc chloride [45]. At the end of the 24 hours period, the drenched sliced of seeds were left in air for 24 hours, then it was dried using an oven at temperature 120 °C for two hour [44].

In the second step, the sliced seeds was carbonized by placing it on a metallic oven tray and heated at temperature of 500 °C for 60 min [46]. Then, the sliced seeds were washed with distilled water until pH of 7 was reached; then dried, using an electric oven, at temperature 120 °C for 60 min to remove moisture. The sliced seeds were grinded and sieved through 75 µm – 600 µm to get powdered activated carbon that will be used latter in the treatment of groundwater [44, 46]. Figure 1 shows plant seeds, used in this study, and the produced activated carbon.

Sandy soil, with grain size of 75 µm - 1 mm, was used as an aquifer. While the required concentration of copper was achieved by adding the required amount of $Cu(NO_3)_2$ salt, made by BDH-England, into the water samples.

(a) DPS.

(b) PS.

(c) AS.

Fig. 1. (1) Seeds before cutting and drying, (2) After drying, (3) Powdered in organic state, (4) After soaking, (5) Powdered activated carbon of DPS, PS and AS.

2.2. Batch experiments

The batch experiments, 3 sets for each experiment, were carried out at the conditions below. These experiments were carried out at different contact times (ranging from 20 to 40, 60, 80, 100 and 120 min). All experiments were carried out at the laboratory of environmental engineering at the University of Babylon. The following values were chosen according to the literature [39, 41, 47].

- The temperature was set to 25ºC to perform sorption isotherms.
- Contact time of 20, 40, 60, 80, 100 and 120 min
- pH values of 2, 4, 6, and 8.
- Sorbent dosages of 0.1, 0.25, 0.50, 1, 2, 3, 4 and 5 g activated carbon per each 100 ml were.
- Initial concentrations of copper ranging from 50 to 100, 150, 200 and 250 mg/L.
- Agitation speeds of 50, 100, 150, 200, and 250 rpm.

Batch experiments were carried out using five 250 ml flasks containing 100 ml of polluted water and 3 g activated carbon for concentration of copper. The flasks were firmly closed and shaken, using shaker incubator, for different times (20, 40, 60, 80, 100 and 120 min) [48]. The removal of copper was measured by taking 20 ml of solution, at intervals of 5, 10, 15, 20 and 25 hours, and filtered on filter papers (Teknik No.1.). The residual copper, in the filtrate, was measured using atomic absorption spectrophotometer (AAS). While the amount of copper held in the activated carbon (q_e) was calculated as follows [48]:

$$q_e = (C_o - C_e)\frac{V}{m} \tag{1}$$

where C_o and C_e are initial and balance contaminant concentration in solution (mg/L), V is the size of solution in the flask (L), and m is the mass of adsorbent (activated carbon) (g) [49]. Langmuir model (Eq. 2) and Freundlich model (Eq. 3) were used for the description of sorption data. Langmiur and Freundlich models were calculated by graphing the q_e against of the C_e at constant temperature. Langmiur and Freundlich models are expressed by the following equations [50]:

$$q_e = \frac{abc_e}{1+bc_e} \tag{2}$$

$$q_e = K_F {c_e}^{1/n} \tag{3}$$

where *a* is the maximum adsorption (mg/g), *b* is a constant (l/mg), K_F is the coefficient of Freundlich sorption (mg/g), and *n* is an empirical coefficient.

It is noteworthy to mention that Langmuir model and Freundlich isotherms models have been used in this study as they provide accurate description for the adsorption method [50].

2.3. Column tests

Figure 2 shows arrangement of the adsorption media that used in the present study. A Perspex column having height and diameter of 80 and 5 cm, respectively. The column is supplied with seven testing ports (valves) distributed at the 12 cm (port 1), 24 cm (port 2), 36 cm (port 3), 42 cm (port 4), 48 cm (port 5), 60 cm (port 6), 70 cm (port 7) from the bottom of the column. These valves are made from stainless-steel. Sampling process was carried out at the specified periods from these valves using syringe that inserted into the centre of the column.

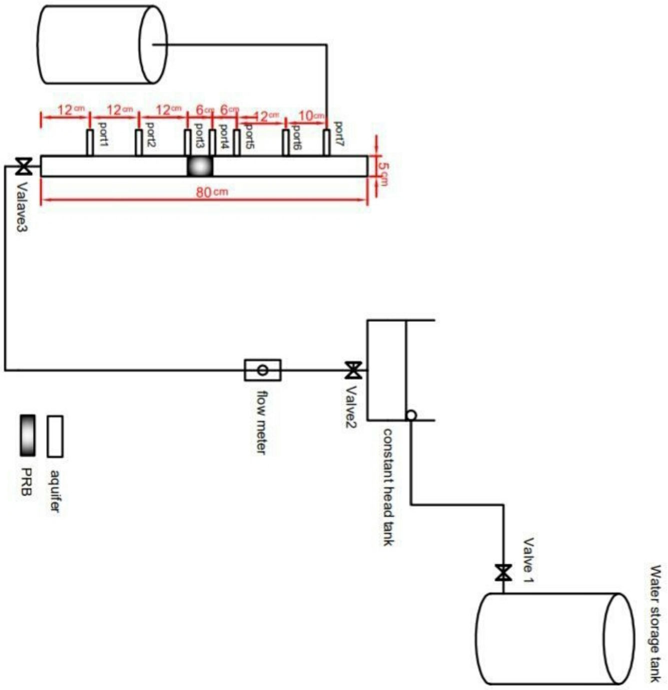


Fig. 2. Schematic diagram of the laboratory-scale column.

A 36 cm soil layer, in a dry condition, was placed in the bottom of the column. Then, activated carbon layer, 6 cm in height, was place on the top of the soil layer followed by a 180 cm soil layer. The copper solution was pumped into the column from the storage reservoir at constant head flow. The pumping process was also controlled using a flowmeter and three controlling valves. The influence of flow rate was investigated at two values, namely 5 and 10 ml/min. Removal of copper was monitored, along the column length, by collecting samples of the testing ports at intervals of 5, 10, 15, 20 and 25 hours.

Additionally, a tracer test was performed to calculate the coefficient of longitudinal dispersion(D_L) for both sandy soil and activated carbon. The tracer test was performed by pumping saline solution, 1 g of NaCl dissolved in 1.0 L distilled water, continuously into the column at different flow rates (5, 10 and 15 mL/min). Electrical conductivity was measured with time, as an indicator of salt concentration, using a conductivity meter installed at port 7. Value of D_L was calculated using the following formula [51]:

$$D_L = \frac{1}{8}\left[\frac{(z_o - Vt_{0.16})}{(t_{0.16})^{0.5}} - \frac{(z_o - Vt_{0.84})}{(t_{0.84})^{0.5}}\right]^2 \qquad (4)$$

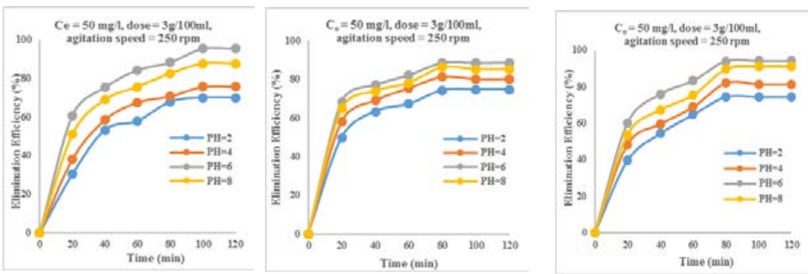
where V is the average pore velocity of seepage, $t_{0.16}$ and $t_{0.84}$ are the required time to reach C/C_o = 0.16 and 0.8, respectively.

3. Results and Discussion

3.1. Batch experiments

3.1.1. Influence of contact time and pH value

The influence of contact time of the removal of copper has been investigated at different periods. Figure 3 shows the influence of contact time and pH value on the removal of copper. These experiments were carried out using 3g of DPSAC, PSAC and ASAC (per each 100 ml of copper solution at 25ºC).This figure indicated that the adsorption rate has significantly increased with the increase of the contact time, until it reaches the equilibrium time (= 100 min for DPSAC and 80 min for PSAC and ASAC). This could be attributed to the fact that the majority of adsorption sits on the surface of the sorbent are occupied by the copper ions during the early stage of treatment, which in turn decreases the adsorption rate due to formation of repulsive forces between the metals on the solid surfaces and in the liquid phase [52]. Additionally, it can be seen from Fig. 3 that neutral level of pH is favourable for the removal of copper. The reduction the removal of copper in the acidic and alkaline environments could be explained by the competition between copper ions and protons, OH^-, and H_2 for the available adsorption sites. It is obvious from Fig. 3 that the higher removal efficiency of copper was attained at pH of 6.

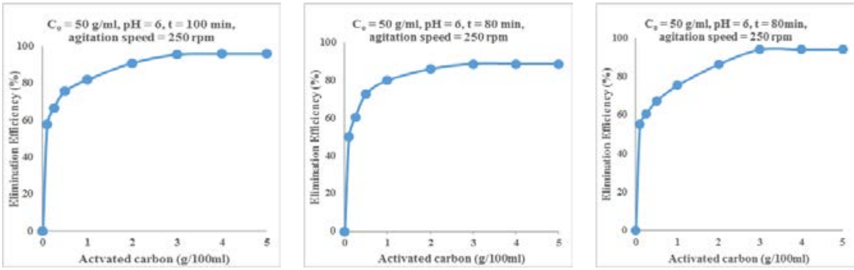


(a) (b) (c)

Fig. 3. Removal of copper by (a) DPSAC (b) PSAC (c) ASAC as a function of contact time and pH.

3.1.2. Influence of sorbent dosage

The influence of sorbent dosage on the removal of copper was investigated by changing the added quantity of activated carbon from 0.1 to 5 g per 100 mL of solution. Figure 4 shows that increasing the activated carbon dosage from 0.1 to 3 g, at initial copper concentration of 50 mg/L, has significantly enhanced the removal efficiency. This enhancement is attributed to the increase of the number of adsorption sits that are readily available for copper removal [52].

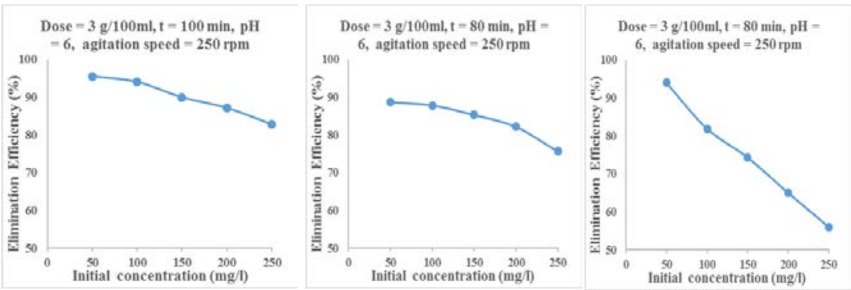


(a) **(b)** **(c)**

Fig. 4. The influence of (a) DPSAC, (b) PSAC and ASAC dosages on elimination efficiencies of Copper.

3.1.3. Influence of initial concentration of copper

Figure 5 proves that the removal efficiency of copper is inversely proportional to the initial concentration of copper. It shows that when the initial concentration of copper increased from 50 to 250 mg/L, the removal efficiency decreased from 95.54% to 82.84% for DPSAC 88.64% to 75.71% for PSAC, and 94.0% to 56.01% for ASAC, respectively. This could be attributed to the fact that, at low initial concentration, the number of adsorption sites was enough to remove the majority of copper ions. While at higher concentration, the adsorption sits will not be enough to removal the high number of coper ions, which decreases the removal efficiency [53].

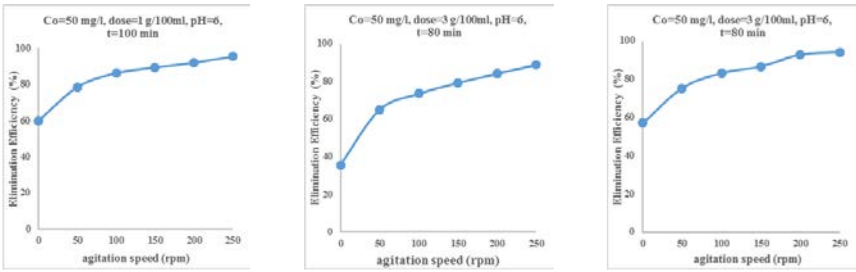


(a) **(b)** **(c)**

Fig. 5. Influence of copper concentration on the removal efficiency by (a) DPSAC, (b) PSAC and (c) ASAC as adsorbents.

3.1.4. Influence of agitation speed

The influence of agitation speed on the removal of copper from water has been investigated by carrying out several tests at different agitation speed, ranging from 0 to 50, 100, 150, 200, and 250 rpm. The obtained results, Fig. 6, indicated that when the agitation speed increased from 0 to 250 rpm, the removal of copper has been increased from 60.15 %, 35.69% and 57.05% to 95.52%, 88.86% and 94% for DPSAC, PSAC and ASAC, respectively. This could be explained by the fact that increasing the agitation speed improves the diffusion of copper towards the surface of the absorption medium (activated carbon) that increases the contact between the binding sites and the copper ions, which enhances the removal efficiency [54].



(a) **(b)** **(c)**

Fig. 6. Influence of agitation speed on the removal of copper by (a) DPSAC, (b) PSAC and (c) ASAC as adsorbents.

3.2. Sorption isotherms

The parameters that give the higher removal efficiency of copper by activated carbon were pH of 6, agitation speed of 250 rpm, activated carbon dosage of 3 g/100ml, and an contact time of 100 min for DPSAC and 60 min for both PSAC and ASAC (the best contact time obtained from the experimental work). The results of the sorption experiment were fitted with the previously described linearized forms of Langmuir and freundlich models. The fitted limits and coefficient of determination (R^2) for Langmuir and freundlich models are represented in Table 1. In comparison with the other models, Langmuir model provided the highest correction for sorption of copper on activated carbon; it also showed a good ability to describe the process of copper sorption on activated carbon (governs the migration of copper in one-dimensional column).

Table 1. Parameters of Langmuir and Freundlich models for sorption of copper onto activated carbon.

Adsorbent	Langmuir constants			Freundlich constants		
	a(mg/g)	b(l/mg)	R^2	a(mg/g)	b(l/mg)	R^2
PDPAC	8.475	0.108	0.9935	1.264	0.496	0.9305
PPAC	9.524	0.036	0.9904	0.569	0.613	0.9597
APAC	4.950	0.087	0.9933	0.402	0.402	0.9665

3.3. Sorption isotherms

Table 2 presents the results of the measurement of D_L at different flow rates (V), which was calculated as follows:

$$D_L = 35.046\ V + 0.0262 \quad \text{for soil} \quad R^2 = 0.9998 \tag{4}$$

$$D_L = 7.8397\ V + 0.0125 \quad \text{for DPSAC} \quad R^2 = 0.9119 \tag{5}$$

$$D_L = 5.198\ V + 0.0064 \quad \text{for PSAC} \quad R^2 = 0.9121 \tag{6}$$

$$D_L = 10.467\ V + 0.0128 \quad \text{for ASAC} \quad R^2 = 0.997 \tag{7}$$

These equations could be summarized by the following general form:

$$D_L = D_{mesh} + \tau\, D_o \tag{8}$$

Where D_{mesh} is the coefficient of mechanical dispersion and D_o is the coefficient of effective molecular diffusion.

Table 2. Measured values of the longitudinal dispersion coefficient D_L as a function of flow rate.

Flowrate (ml/min)		5	10	15
PDPAC	V (cm/s)	0.0131	0.0262	0.0393
	D_L (cm^2/s)	0.1336	0.181	0.339
	α_L (cm)		7.8397	
PPAC	V (cm/s)	0.013	0.0262	0.0393
	D_L (cm^2/s)	0.0862	0.1181	0.223
	α_L (cm)		5.198	
APAC	V (cm/s)	0.0122	0.0244	0.0367
	D_L (cm^2/s)	0.1446	0.26	0.401
	α_L (cm)		10.467	
Sandy soil	V (cm/s)	0.0119	0.0238	0.0357
	D_L (cm^2/s)	0.4399	0.867	1.274
	α_L (cm)		35.046	

3.4. Modeling application

Advection dispersion process is the cause of copper migration in a porous medium, so that the one-dimensional system of copper migration in the porous media can be represented by the following equations.

$$D_z \frac{\partial^2 C_{Cu}}{\partial z^2} - V_z \frac{\partial\, C_{Cu}}{\partial z} = \frac{\partial\, C_{Cu}}{\partial t} + \frac{\rho_b}{n} \frac{\partial (q)}{\partial t} \tag{9}$$

where C_{Cu} = copper mass concentration in water, V_z = speed of flow, D_z = coefficient of longitudinal dispersion in the z direction, ρ_b = bulk density of dry adsorbing material, and q = copper concentration on solid, the subsequent term (q).

For verification of model, parameters and constants related to the soil and activated carbon were evaluated either through laboratory tests and through approximation from relevant literature data [39, 47] (Table 3).

Table 3. Parameters, constants, boundary and initial conditions used in the transport modeling of copper in pilot plant column.

Item	Location	Type/Value
Aquifer characteristics	Sandy soil	Porosity (nA) = 0.44 Sandy soil depth before PRB(cm) = 36 Sandy soil depth after PRB (cm) = 32 Longitudinal dispersivity (αL, cm) = 35.046 Bulk density (g/cm^3) = 1.47415
	DPSAC, PSAC, and ASAC	Porosity (nB) = 0.41, 0.40 and 0.40 Barrier bed depth (cm) = 6 Longitudinal dispersivity (αL, cm) = 7.8397, 5.198 and 10.467 Bulk density (g/cm^3) = 0.55988, 0.67688, 0.64513
Initial condition	The initial concentration of Cu^{+2} (mg/L) = 0	
Boundary conditions	Concentration of Cu^{+2} at distance =0 (mg/L) = 50 Advection flux $(\frac{\partial c}{\partial z})$ at distance =60 cm = 0	

Figure 7 shows the normalized concentration lines of copper in the soil, which were determined using the COMSOL software. These values were calculated with and without the presence of permeable reactive barrier at a flow rate of 5 mL/min after 5, 10, 15, 20 and 25 hours. This figure demonstrates the potential role of the permeable reactive barrier in hindering the spreading of copper ions, where it can be seen that the change in copper concentration after 0.4 m from the bottom of the column became very slow.

A comparison between the theoretical (COMSOL solution) and experimental results for copper concentrations at 5, 10, 15, 20 and 25 hours and flow rate of 5 ml/min along the test column are shown in Fig. 8. It can be obviously noticed, from this figure, that the predicted and experimental results are highly agreed. Additionally, the root-mean squared error (RMSE) was used as a statistical tool to discovery the grade of contract between these results [55]. The calculated RMSE was less than 0.1%, which confirms the agreement between the predicted and experimental results.

Finally, it is noteworthy to mention that the obtained results from the current study are in a good agreement with the previous studies, such as the study of Chamanchi, et al. [56] and El-Said, et al. [57].

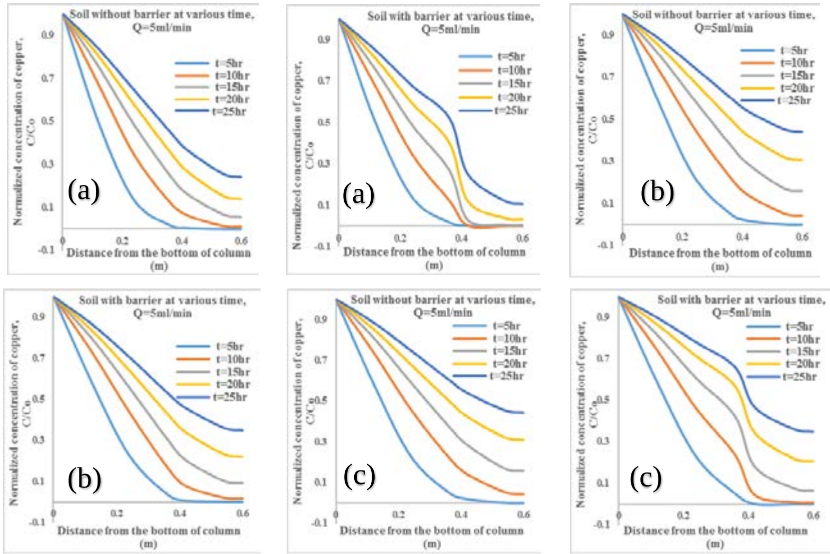


Fig. 7. The normalized concentrations of copper as a function of the distance from the bottom of the column in (a) DPSAC, (b) PSAC and (c) ASAC.

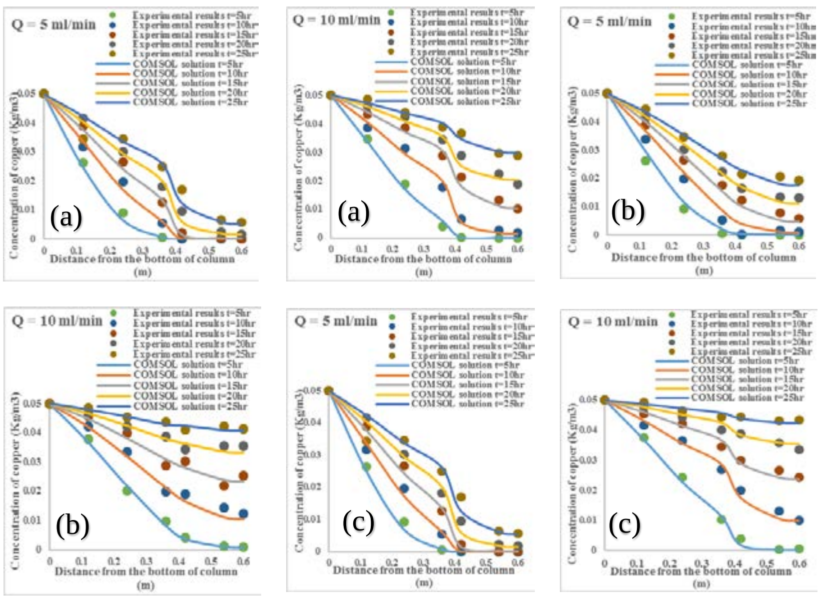


Fig. 8. Comparison between predicted (COMSOL solution) and experimental results for copper concentrations on (a) DPSAC, (b) PSAC and (c) ASAC at two values of flow rates.

4. Conclusions

The current study attempted to investigate the possibility of preparing of cost-effective activated carbon from seeds, namely date palm seeds, peach seeds, and apricot seeds. The results of the experiments evidenced the following facts:

- Removal of copper using activated carbon is positively influenced by increasing the contact time, agitation speed and dosage of activated carbon. However, it is negatively influenced by increasing the copper concentration.
- Neutral pH level is very favourable for copper removal by activated carbon.
- Sorption process of copper on the DPSAC, PSAC and ASAC could be efficiently described by Langmuir isotherm model.
- Generally, the experimental results proved that the activated carbon that prepared from wasted seeds is a cost-effective and efficient media for the removal of copper from contaminated groundwater.

Nomenclatures

a	the capability of maximum adsorption (mg/g)
b	the constant (l/mg)
C/C_o	normalized concentration
C_e	balance concentration, mg/L
Co	initial concentration of Cu^{+2}, mg/L
D_L	the Coefficient of longitudinal dispersion t, m^2/sec
D_{mesh}	the coefficient of mechanical dispersion, m^2/sec
D_o	the coefficient of effective molecular diffusion, m^2/sec
D_z	dispersion coefficient in the direction z, m^2/sec
K_F	the coefficient of Freundlich sorption (mg/g)
m	mass of activated carbon in the flask, g
n	porosity
q_e	quantity of solute eliminated from solution, mg/kg
R^2	constant of determination
V	size of solution in the flask, L
V_z	speed of flow in the direction z, m/sec
D_{mesh}	The coefficient of mechanical dispersion.
D_o	Coefficient of effective molecular diffusion

Greek Symbols

τ	Tortuosity factor
α_L	longitudinal dispersivity, cm
ρ_b	bulk density, g/cm^3

Abbreviations

RMSE	Root-mean squared error
AS	apricot seeds
ASAC	activated carbon from apricot seeds
Cu^{+2}	copper
1D	One-dimensional
DPS	date palm seeds
DPSAC	activated carbon from date palm seeds
PRB	Permeable reactive barrier

PS	peach seeds
PSAC	activated carbon from peach seeds

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Evaluating the effects of the flow direction on the performance of the rapid sand filter

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Abstract
The rapid sand downflow filter is widely used in water treatment plants. On the other hand, this filter has some drawbacks included the significant development of the head loss via the filter media because most of the rejected particles are removed by the upper layers. As well, the filter particles are redistributed during the backwash process causing the settling of fine particles on the upper part of the filter media, and this needs to increase the number of backwash processes. For these reasons, the cost of the produced water increases. The aim of the present study is to explore the possibility of using the upflow sand filter (UF-Filter) as a good alternative to the downflow sand filter (DF-Filter). To achieve the aims of the present study, a comparison was made between the performance of both filters through simultaneous experiments under different operating conditions. These conditions included changing of the filtering velocity from 5 m/h to 10 m/h and the initial water turbidity with a range of (10 – 200) NTU. The sand media with sizes of (0.6 - 1mm) and with 63 cm of depth was used. Experimental results show that the turbidity removal efficiency of the DF-Filter is of about 1.1 times that of the UF-Filter. On the other hand, the UF-Filter has higher turbidity removal efficiency than the DF-Filter by about 1.1 times when the initial turbidity of the influent water is greater than 150 NTU and the filtration velocity is equal to 10 m/hr. These differences in the removal efficiency between both filters can be considered as few values. The average filtration efficiency of the UF-Filter operated with the filtration velocity of 5 and 7.5 m/h is higher than that of the DF-Filter operated with the filtration velocity of 7.5 and 10 m/h, respectively under the same operating conditions. The filtration efficiency of both filters increases when the backwash was carried out before each experimental process instead of replacing the filter media. Also, the head loss of the DF-Filter is significantly increased due to redistribution of the sand media taking place during the backwash cycle, while the head loss of the UF-Filter is not affected. The head loss of the UF-filter at the end of each experimental run is less than that of the DF-Filter by about (18.18 % - 45.31 %) when the filter medium is replaced and this range is increased to about (53.31 % -

62.34 %) when the backwash is performed prior to the start of the experimental work. Thus, the decrease in head loss leads to an increase in the filter running time and decrease the number of backwash process.

Keywords: upflow filter, rapid sand filter, head loss, filtration rate, water turbidity treatment

1. Introduction

A lot of the water turbidity is removed by a sequence of processes which are coagulation, flocculation, and sedimentation. As well as, further removal of the suspended particles is obtained by the filtration process to get pure waters within the standard specifications of the public health [1, 2].

Rapid downflow sand filter extensively used in the treatment of water. The range of its effective sizes (ES) and its uniformity coefficients (UC) are of (0.45 - 0.7) mm and (1.3 - 1.7) mm, respectively [3]. As the water flows through a granular filter bed, the suspended particles attach to the granules of the filtering media causing clogging of some pores, reducing the size of pores channels, and rising the head loss of the filter. If the head loss exceeds the critical value or the filtration quality reaches below the permitted value during filtration, the filter stops serving and the backwashing process begins. Backwashing basically involves reversing and raising the water flow through the filter to clean the filter from the contaminants that accumulate in the filter media, and this requires a substantial volume of washing water up to 10% of the filtered water amount [4]. This type of filter has some drawbacks. The major drawback is the reduction of the operating duration of the filter, thereby increase the number of washing processes. As most of the water impurities are removed close to the upper part of the sand layer leaving most of the filter thickness unused, the filter pores are early clogged, especially at the high water turbidity levels [5, 6]. Also, the stratification that occurs in the sand layer during the backwash process, makes the fine particles of sand settled on the upper face of the sand layer and reducing the size of pores of this face. Accordingly, the head loss dramatically increases during the operation of the filter, which leads to the need for further repeated backwash processes [7, 8].

The common solution to overcome this problem is of using a dual-media rapid filter that consists of an anthracite layer settled over a sand layer [9, 10] . So, the direction of flow moves from a coarse layer to a fine layer. Hence, the head loss development is delayed and the duration of filter run is increased if the suitable sizes are chosen for both media layers. However, anthracite is not always readily available, it is not the most economical option in certain cases. This is particularly right in the many of developing states, and in the rural regions around the world.

Most of the global and local studies focus on the rapid downflow filters (DF-Filters), but there is still some lack of studies of the rapid upflow filters. Furthermore, there are no local studies of rapid upflow filters (UF-Filters). So, further researchs on the granular upflow filter is important to solve particular problems in the water treatment.

The use of UF-filters which can be considered as a better alternative to DF-Filters to improve the performance of the filtration processes in terms of the development of head loss and filter operating time that is a goal of the study as well as saving energy, and reducing effort and cost in the water treatment. Unlike DF-Filter, the important feature of filtering water flowing from coarser to finer gradient is guaranteed in the UF-Filter even after the backwash, which it can achieve a consistent distribution of captured particles over the entire depth of filter, a significant storage capacity of solids in the coarse gradient, a longer run period and a lower head loss [11]. The authors [12] showed that the effect of gravity on the direct filtering process gave higher initial efficiency for the DF-Filter than the UF-Filter. [13] improved the ripening process using ETSFW (Extended Terminal Sub-Fluidized Wash) technique with cationic polymer in washing water for the DF-Filter and the UF-Filter. Nevertheless, the head loss increases during the ripening of the DF-Filter and this leads to increase the removal of the prevailing surface resulting in shorter run ultimately. On the contrary, the UF filter has a less head loss development and a long filter run. This idea helps to make the up-flow filter more acceptable. Therefore, this study is conducted to compare the performance of both the upward and downward filters. Since the filtration rate and the initial water turbidity mainly affect the granular filtration process [10], their effects on the two filters are investigated in the present study.

2. Materials and Methods

In the present study, a pilot plant that consists of two columns of filters, the upflow and the downflow filters, was designed and constructed to study simultaneously the filtration efficiency of each filter type under different operating conditions. The schematic diagram of the pilot plant used is shown in Figure 1.

2.1 Pilot plant components

1. **Feeding tank of Synthetic Turbid Water:** Two polyethylene plastic tanks are installed in the experimental running unit, the volume of the first and second tanks are 1000 L and 500 L, respectively. The first tank is placed on the ground as shown in Figure 1, while the second tank is

placed 4 m above the ground level to achieve the constant head required for water flow. Tanks are filled with turbid water and they are used as storage and feed tanks of the turbid water for the pilot units. A submersible pump was used inside each tank to recirculate turbid water to keep it homogeneous along the tank. In addition, water is supplied from the first feeding tank to the second one via a feed pump. Thereafter, the turbid water is supplied from elevated tank to the pilot plant by gravity.

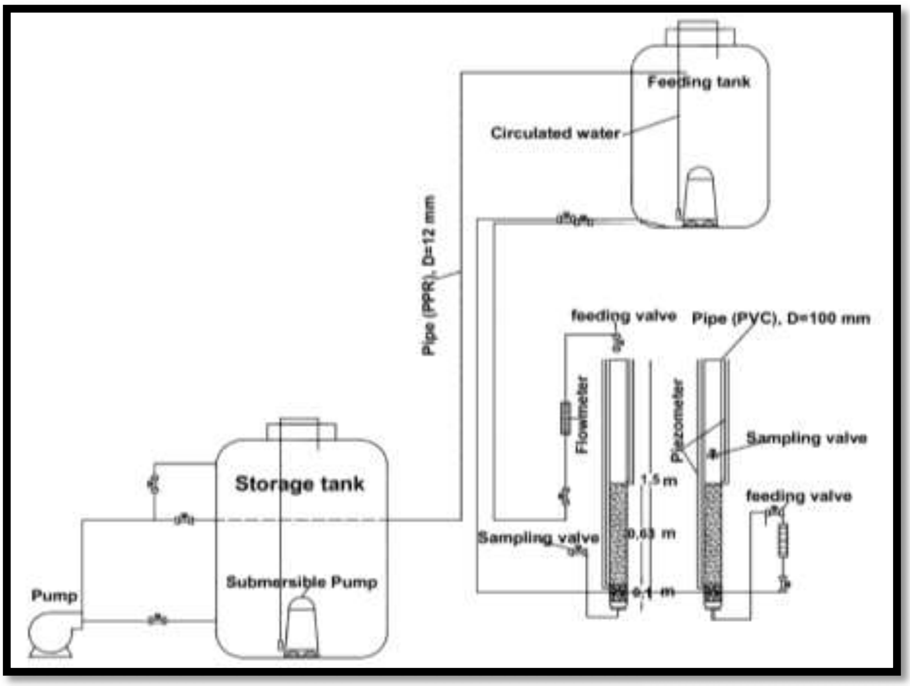

Figure 1. Schematic diagram of the pilot filtration units used

2. **Flow meters:** The flow meters are installed on the feeding pipes of each filter to measure the flow rate of turbid water.
3. **Pipes and valves of the pilot plant:** The polypropylene type pipes (PPR) of 12mm diameter are used to deliver synthetic turbid water between tanks and the pilot plant filters. Valves have been utilized in the pilot plant to perform various services including maintaining and controlling the flow rate passing through the flow meters towards filtration columns and collecting samples of filtered water.
4. **Columns of filtration:** Two columns were designed and installed to run in two parallel patterns which are downflow and upflow directions as shown in the Figure 1. The filtration

columns were made of PVC material of 150 cm high and 10 cm in diameter. A perforated disc made of stainless steel placed at the bottom of filtration columns to support the media of the filter, and distribute the backwash water and the influent turbid water. The perforated disc that is of 0.1 cm thickness has holes of 0.2cm diameter uniformly distributed over its entire area. In order to measure the head loss that occurs due to filtration of turbid water throughout the filter media, two–transparencies plastic tube each of 10mm diameter are installed on the inlet and outlet of each filter column.

2.2 Filter Media

The materials of the filter media used in the current study is of uniform sand with size gradations of (0.6 – 1) mm, effective size of 0.63 mm, and uniformity coefficient of 1.29. The sand is placed on the top of the gravel layer. The filtration media layer is of 63 cm height for all filters utilized. The sand is carefully washed with water to remove impurities, dirt, and salts before placing it in the filter columns. The gravel layer is of 10cm depth, and its particles size ranges between 2.5mm and 6.5mm. The gravel is used as a support layer located directly under the filter media to prevent particles of the filter media from clogging the underdrain orifice. Also, the gravel layer permits the turbid water to easily flow from the underdrain orifice during upflow and backwash processes [14].

3. Results and Discussion

Twenty-one experimental runs were carried out to study in removing of the water turbidity and reducing of the head loss. In the present study, the average efficiency of water treatment was assessed for turbidity in each filtration cycle. The effluent turbidity of the DF-Filter and the UF-Filter were measured each hour during running of the pilot plant. The running time of each filter was about 11 hours of every run. Synthetic raw water was used instead than river water in order to carry out a wide range of water turbidity which had been required in experimental tests with more controlled method. The overall range of the turbidity of synthetic raw water varies between 10 NTU and 200 NTU. Filtration velocities that have been studied were 5, 7.5, and 10 m / h. The pressure drop (head loss) was recorded for both filters by the piezometers at the first hour and the end time of each run. The filtering media is replaced before each operation to maintain the same conditions and get an accurate comparison of the results for different cases of each run. Except of the runs NO.9 and NO. 16, the backwashing of the filtration media was carried out before filters run to observe the changes taking place.

3.1 Experimental Study Results

Both filters were tested under the same operational conditions which are the influent water turbidity, the running time, and the filtration rate. Average initial turbidities of (10, 20, 40, 70, 100, 150 and 200 NTU) were used in the runs Nos. (1, 2, 3, 4, 5, 6, and 7), in the runs Nos. (8, 9,10, 11, 12, 13, and 14), and in the runs Nos. (15, 16, 17, 18, 19, 20, and 21) respectively. The experimental operations were divided into three groups as follows:

3.1.1 First group (Run NO. 1 – Run NO. 7)

The results of the first group of experiments under the filtration velocity of 5 m/h show that the DF-Filter gives slightly higher removal efficiency rate than that of the UF-Filter for each run as presented in Figure 2. The reason of this is due to gravity effect on the removal efficiency of particles for downflow direction via sedimentation mechanism which leads to increase the capture of particles by the DF-Filter and this is in a good agreement with the study of [15]. The highest turbidity removal rate of the DF-Filter and the UF-Filter are 87.37 % and 83.07 %, respectively for run NO. 4 and the lowest turbidity removal rate are 77.43 % and 69.98 %, respectively for run NO. 1. The values of turbidity removal of the DF-Filter are of about (1.11, 1.19, 1.08, 1.05, 1.09, 1.1, and 1.07) times that of the UF-Filter for run Nos. 1, 2, 3, 4, 5, 6, and 7, respectively by an average value of 1.1 times. Thus, these differences in the removal efficiency of water turbidity of both filters can be considered as few values.

3.1.2 Second group (Run NO. 8 – Run NO. 14)

In this runs, the filtration velocity of 7.5 m/h is utilized. It is found that the average removal efficiency of the DF-Filter is higher than that of the UF-Filter under the same conditions, except under the initial turbidity level of 200 NTU, the average removal efficiency of water turbidity of both filters is significantly close to each other as shown in Figure 2. The maximum average removal efficiency of water turbidity of the DF-Filter and the UF-Filter is 77.69 % and 72.88 %, respectively for the run NO. 11, and the minimum average removal efficiency is 58.27 % and 56.5 %, respectively for the run NO. 14. The removal efficiency rate of turbidity of the DF-Filter is about (1.1, 1.1, 1.1, 1.07, 1.1, 1.07, and 1.03) times that of the UF-Filter for runs Nos. 8, 9, 10, 11, 12, 13, and 14, respectively by an average value of 1.08 times, and they can be considered as few values.

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3.1.3 Third group (Run NO. 15 – Run NO. 21)

The filtration velocity of 10 m/h is used in each run. It is found that the DF-Filter has higher removal efficiency rate of water turbidity than the UF-Filter when the average values of the initial turbidity are 10, 20, 40, 70 NTU. Also, the results show that the removal efficiency rate of water turbidity of the DF-Filter is approximately close to the UF-Filter under the initial turbidity of 100 NTU, but the UF-Filter has a removal efficiency rate of turbidity greater than that of the DF-Filter when the values of water turbidity are 150 and 200 NTU as presented in Figure 2. It is also found that the maximum average filtration efficiency of the DF-Filter and the UF-Filter is 68.97 % and 62.22 %, respectively for run NO.16 and the minimum average filtration efficiency of the DF-Filter is 44.82 % for run NO. 21, whereas the minimum average filtration efficiency of the UF-Filter is 46.72 % for run NO.15. Also, the average removal efficiency of water turbidity of the DF-Filter is about (1.23, 1.11, 1.11, 1.14, and 1.04) times that of the UF-Filter of runs Nos. 15, 16, 17, 18, and 19, respectively by an average of 1.13 times. On the other hand, the average removal efficiency of water turbidity of the UF-Filter is about (1.09, 1.08) times that of the DF-Filter of runs Nos. 20 and 21, respectively by an average of 1.1 times. This may be due to the high filtration rate and the increase of influent turbidity that leads to an increase in the amount of suspended particles that flow into the two filtration columns and reduce the retention time pf each filter, So the chances of the particles capture reduce in the granule bed by the mechanism of particles removal especially the sedimentation mechanism that differs between the DF-Filter and the UF-Filter and this is in a good agreement with the study of [16]. Consequently, the filtration efficiency of the DF-Filter decreases due to the decreasing of the effect of the particle's removal mechanism by the gravitational sedimentation, while the filtration efficiency of the UF-Filter increases due to the increasing of the effect of the filtration depth, and this is in a good agreement with the study of [13]. Thus, the removal efficiency of water turbidity of the UF-Filter is greater than that of the DF-Filter for runs Nos. 20 and 21.

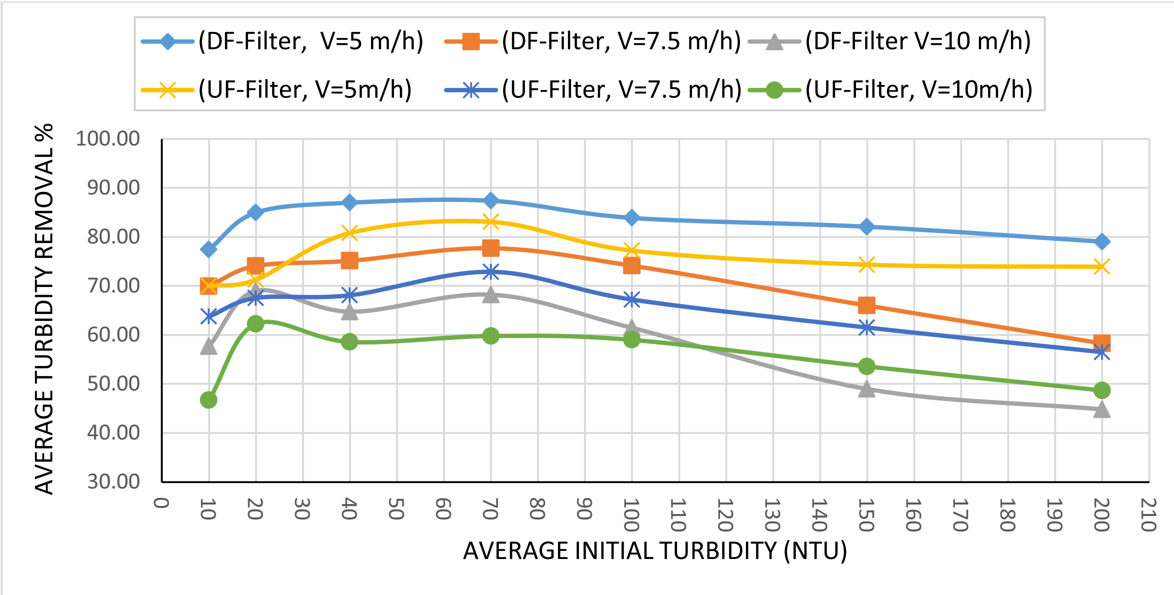

Figure 2. The relation between the average turbidity removal efficiency and the average initial turbidity of both filters of groups Nos. 1, 2 and 3 ~~at~~ under three filtration rates and a running time of 11 h.

3.2 Effects of the Filtration Rate

the effect of filtration velocity on the average filtration efficiency and the total head loss for DF-Filter and UF-Filter is presented in Figure 2 and Figure 3, respectively. Average removal efficiency and total head loss are usually calculated at the end of each experimental run. Generally, it is found that the increasing of the filtration rate leads to decrease the efficiency of filtration process (i.e. effluent turbidity increased) and increase the head loss of both types of filters. At the higher filtration velocities, the more amount of suspended particles flow to the filtration bed, and the contact time of suspended particles with the media grains decreases. Hence, some of these particles get out with the effluent water without any filtration mechanism such as interception, collision, and sedimentation. Therefore, the quality of the effluent water decreases and this result meets the data reported by [16]. On the other hand, increasing of the flow rate increases the collision between the suspended particles and the filter grains, it also increases fluid shearing force on captured particles, so particulate detachment can occur when the adhesive force between the suspended particles and the filter grains is less than the shear force. Thus, the effluent turbidity increases, and this is in a good agreement with the study of [13].

In the second group, the average removal efficiency of turbidity is less than that of the first group by (7.49, 10.88, 11.85, 9.67, 9.74, 16.07 and 20.75) % with an average of 12.35 % for the DF-Filter and by (6.23, 3.72, 12.71, 10.19, 9.99, 12.82 and 17.41) % with an average of 10.44 % for the UF-Filter in runs Nos. 8, 9, 10, 11, 12, 13, and 14, respectively. In the third group, the average removal efficiency of turbidity is also less than that of the second group by (12.25, 5.11, 10.38, 9.48, 12.68, 17.03 and 13.45) % with an average of 11.48 % for the DF-Filter and by (17.04, 5.32, 9.53, 13.09, 8.22, 7.94 and 7.82) % with an average of 9.85 % for the UF-Filter in runs Nos. 15, 16, 17, 18, 19, 20, and 21, respectively. Therefore, the removal efficiency of turbidity of the DF-Filter is affected by the increasing of the filtration rate more than that of the UF-Filter.

Under the same influent turbidity, it is also found that the average filtration efficiency of water turbidity of the UF-Filter under the filtration velocity of 5 and 7.5 m/h is higher than that of the DF-Filter under the filtration velocity of 7.5 and 10 m/h, respectively. On the other hand, the average removal efficiency of water turbidity of the UF-Filter of runs Nos. 9 and 16 under initial turbidity of 20 NTU is slightly less than that of the DF-Filter because the filter media was not replaced in both filters before starting a new run. As well as the backwash process redistributes the particles of the filter media and makes the settling of fine particles on the top zone of the filter media layer. Thus, the average removal efficiency of water turbidity of both filters increases as presented in Figure 2.

The results shown in Figure 3 reveals that the increasing of the filtration rate leads to increase the head loss of both filters and this in turns leads to decrease the running time of each filter. In the second group, the head loss is greater than that of the first group by (42.9, 58.4, 38.3, 37.1, 34.9, 32.3, and 31.0) % with an average of 39.3 % for the DF-Filter and by (18.5, 20.7, 28.6, 31.0, 29.8, 28.0, and 29.6) % with an average of 26.6 % for the UF-Filter in runs Nos. 8, 9, 10, 11, 12, 13, and, 14, respectively. In the third group, the head loss is also greater than that of the second group by (23.4, 15.4, 13.0, 17.3, 20.3, 21.7, and 19.3) % with an average of 18.6 % for the DF-Filter and by (22.9, 31.0, 31.4, 23.6, 19.0, 19.4, and 16.9) % with an average of 23.4 % for the UF-Filter in runs Nos. 15, 16, 17, 18, 19, 20, and 21, respectively.

It can also be seen that the head loss of the DF-Filter increased significantly when the backwash was performed before the starting of the experimental run in runs Nos. 9, 16 due to stratification of the sand media that takes place during the backwash cycle. The fine sand grains settle on the top zone of the filter media layer, so the porosity of the top zone of the filter media layer reduces and this leads to get a high removal efficiency of turbidity in top layer of the DF-Filter. Hence, the head loss of the DF-Filter increases and this is agreed with the conclusion found by [17]. On the other hand, it is found that there is no noticeable effect of the head loss of the UF-Filter because this filter maintains the gradient of the media grains from coarse to fine even after backwashing and this is consistent with the study results of [13]. It can be concluded that if the backwash is carried out before each filtration process in the present study, the values of the filtration efficiency of both filters and the head loss of the DF-Filter increase while the head loss of the UF-Filter is not affected.

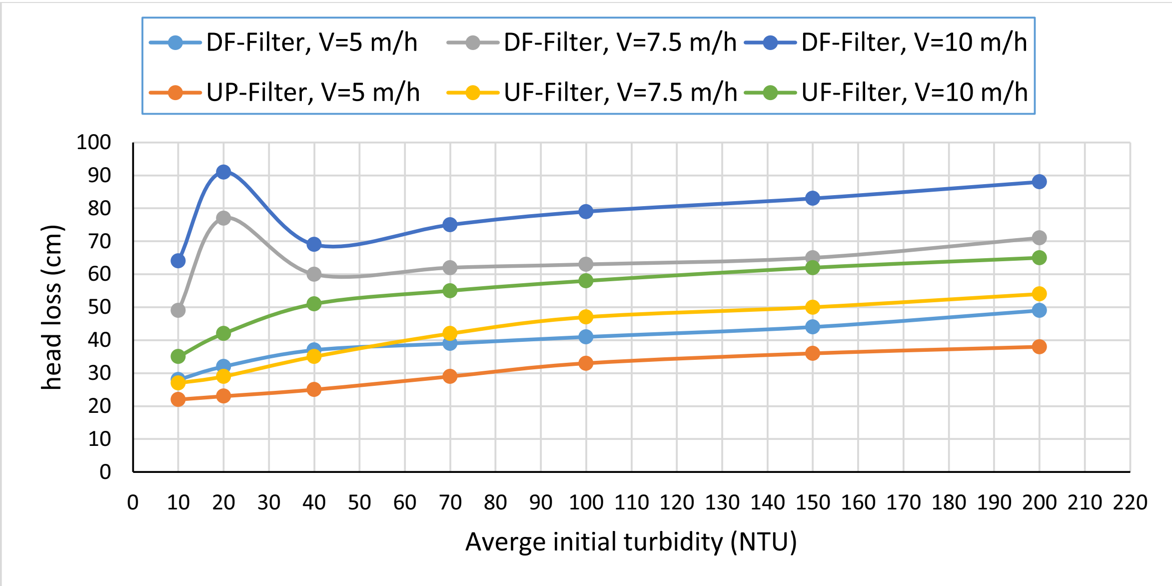

Figure 3 The relation between the total head loss and the average initial turbidity of both filters of groups Nos. 1, 2 and 3 under three filtration rates and the running time of 11 h.

3.3 The effect of the flow direction on the head loss

Based on the data collected from experimental work it can be concluded that the development of head loss of the UF-filter (i.e. pressure drop through filter media) is slower than that of the DF-Filter as shown in Table 1, 2, and Table *3*. In particular, the head loss of the DF-Filter significantly occurs because most of the suspended particles of the turbid water do not penetrate the filter media deeply, while the head loss of the UF-Filter slowly occurs due to the efficient diffusion of these particles within the depth of the filter media. Hence, the decrease of the head loss leads to an increase in the running time of the filter and this is compatible with the results obtained by [18].

Table 1. The head loss development of both filters for the first group under the filtration rate of 5 m/h and the running time of 11 h.

Run NO.	initial Turbidity average (NTU)	time (h)	DF-Filter	UF-Filter	The difference at the end of the run %
			development head loss (cm)	development head loss (cm)	
1	10	(1 - 11)	28 - 28	21 - 22	21.43
2	20	(1 - 11)	29 - 32	21 - 23	28.13
3	40	(1 - 11)	31 - 37	22 - 25	32.43
4	70	(1 - 11)	33 - 39	23 - 29	25.64
5	100	(1 - 11)	34 - 41	26 - 33	19.51
6	150	(1 - 11)	36 - 44	27 - 36	18.18
7	200	(1 - 11)	37 - 49	28 - 38	22.45

Table 2. The head loss development of both filters for the second group under the filtration rate of 7.5 m/h and the running time of 11 h.

Run NO.	initial Turbidity average (NTU)	time (h)	DF-Filter	UF-Filter	The difference at the end of the run %
			development head loss (cm)	development head loss (cm)	
8	10	(1 - 11)	41 - 49	26 - 27	44.90
9	20	(1 - 11)	48 - 77	27 - 29	62.34
10	40	(1 - 11)	42 - 60	27 - 35	41.67
11	70	(1 - 11)	47 - 62	32 - 42	32.26
12	100	(1 - 11)	48 - 63	34 - 47	25.40

13	150	(1 - 11)	50 - 65	35 - 50	23.08
14	200	(1 - 11)	51 - 71	38 - 54	23.94

Table 3. The head loss development of both filters for the third group under the filtration rate of 10 m/h and the running time of 11 h.

Run NO.	initial Turbidity average (NTU)	time (h)	DF-Filter	UF-Filter	The difference at the end of the run %
			development head loss (cm)	development head loss (cm)	
15	10	(1 - 11)	52 - 64	33 - 35	45.31
16	20	(1 - 11)	65 - 91	37 - 42	53.85
17	40	(1 - 11)	54 - 69	36 - 51	26.09
18	70	(1 - 11)	58 - 75	43 - 55	26.67
19	100	(1 - 11)	60 - 79	45 - 58	26.58
20	150	(1 - 11)	63 - 83	47 - 62	25.30
21	200	(1 - 11)	65 - 88	51 - 65	26.14

3.4 Effect of Influent Turbidity Concentration

The analysis of results show that the increasing of an average initial turbidity leads to increase the turbidity of effluent water. On the other hand, it is also found that the average filtration efficiency increases with increasing of the turbidity of influent water up to 70 NTU, but it decreases under the turbidity of influent water of 100, 150, and 200 NTU. This may be attributed to the aggravation of the detachment of the accumulated deposits on the surface of the media grains, and this detachment considerably depends on the increase of the amount of influent turbidity. Therefore, the average filtration efficiency reduces at a high initial turbidity as shown in Figure 2. When the initial turbidity was increased, the head loss increased for both filters at the same operating conditions in all groups as shown in Figure 3. Thus, the high turbidity of the effluent water or the high head loss of the filter will decrease the filter runtime. These conclusions are in a well agreement with the results concluded by [19, 20].

Conclusions

The conclusions of the present study are drawn below:

1. Under the filtration velocities, 5, 7.5, and 10 m/hr, the maximum average efficiency of turbidity removal of the DF-Filter is 87.37%, 77.69%, and 68.97%, respectively, and of the UF-Filter is 83.07%, 72.88%, and 62.22%, respectively.
2. It was concluded that the removal efficiency of water turbidity of the DF-Filter is about 1.1 times that of the UF-Filter. On the other hand, the UF-Filter has the turbidity removal efficiency greater than the DF-Filter by 1.1 times under the values of the initial turbidity greater than 150 NTU and the filtration velocity of 10 m/h. these differences in the removal efficiency of water turbidity of both filters can be considered as few values.
3. Under the filtration velocity of 7.5 m/h, the filtration efficiency value of turbidity of the DF-Filter and the UF-Filter decreases by about 12.35% and 10.44 %, respectively than their values under the filtration velocity of 5 m/h. Also, under the filtration velocity of 10 m/h, the filtration efficiency value of turbidity of the DF-Filter and the UF-Filter decreases by about 11.48 % and 9.85 %, respectively than their values under the filtration velocity of 7.5 m/h. This indicates that the DF-Filter was more affected by increasing the velocity of filtration.
4. Under the same operating conditions, the average filtration efficiency of turbidity of the UF-Filter under the filtration velocity of 5 and 7.5 m/h is higher than that of the DF-Filter under the filtration velocity of 7.5 and 10 m/h, respectively.
5. It could be concluded that under the same operational conditions, if the backwash is carried out before each filtration process in the present study, the values of the filtration efficiency of both filters and the head loss of the DF-Filter increase, while the head loss of the UF-Filter is not affected.
6. The head loss of the UF-filter at the end of each experimental run is less than that of the DF-Filter by about (18.18 % - 45.31 %) when the filter media is replaced and this range is increased to about (53.31 % - 62.34 %) when the backwash is performed prior to the start

of the experimental work. Thus, the decrease in head loss leads to an increase in the filter running time and decrease the number of backwash process.

7. It is found that the average filtration efficiency increases with the increasing of the turbidity of influent water up to 70 NTU, but it decreases under the turbidity of influent water of 100, 150, and 200 NTU.

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Assessing the Influence of Climate Change on Water Treatment Efficiency in Baghdad, Iraq

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Abstract

Predictions for the future indicate that climate change may worsen the water problem in Iraq. The impact of climate change on water supplies, the environment, and the economy, particularly the agricultural sector, is one of the region's most significant challenges. This paper analyzes the impact of climate change on water parameters, and the implications for station operation and performance.

The data was taken from the Al- Qadisiya water treatment plant in Baghdad city for 2022. This research is the only one that discusses the design of water treatment plants using the GPS-X to design and simulate the plants and show the effect of climate change on plant operation. The results of evaluating the operational performance of water treatment plants indicate that the concentrations of all contaminants in the effluent water have consistently followed the established Iraqi standards in all scenarios. Some consequences of these variables (pH, turbidity, TDS, color, alkalinity, and hardness).

The modeling and simulation of the water treatment plant, conducted using GPS-X, confirmed an acceptable level of performance characterized by a high degree of efficiency. The model was subjected to three scenarios, which showed that the concentrations of the pollutant parameters in the treated water stayed within the allowed limits.

Keywords: Water Treatment, Climate Change, GPS_x, Plants, Simulation.

Introduction

The two primary goals of water treatment plants are to remove contaminants that are harmful to health and to eliminate contaminants that give water an unpleasant appearance, taste, or odor. Since many harmful toxins cannot be seen, smelled, or tasted, early water treatment operations focused on enhancing the water's appearance or consumer appeal, as many harmful toxins are odorless, tasteless, and invisible. (Dey et al., 2021)

An evaluation of the performance of a water treatment plant can be used to improve the way it works. The drinking water treatment process involves the elimination of contaminants and the deactivation of potentially harmful microorganisms present in untreated water, resulting in the manufacture of water that is sufficiently clean for human consumption and free from any possible health risks in both the immediate and longer term. Various methods are used to remove contaminants, including physical treatments like settling and filtering, chemical procedures like coagulation and disinfection, and slow sand filtration. In the context of municipal drinking water treatment, several treatments are implemented globally, considering factors like the season, the presence of pollutants, and the specific compounds found in the untreated water.(Wang et al., 2011)

Water resources have had significant impacts from climate change, population expansion, and heightened human activity. These factors provide major challenges for organizations responsible for providing drinking water, particularly in developing nations. The effect of climate change is causing alterations in the quantity and caliber of water resources available to both human populations and ecological systems globally.(Bates et al., n.d.)

The effect of climate change is causing alterations in the quantity and caliber of water resources available to both human populations and ecological systems globally. The rise of risks and expenses for individuals, ecosystems, agricultural practices, energy generation, industrial operations, recreational activities, and the natural surroundings is visible. A water treatment facility's primary function is to ensure the provision of potable water to the public while eliminating any detrimental substances present in either a dissolved or suspended state. The removal of harmful chemicals is of greatest importance. The assessment of the operational efficiency of a water treatment facility has the potential to enhance its functionality. (Baruth et al., 2005)

Climate and water have close relationships on Earth. Involved in a large-scale exchange of mass and heat between the atmosphere, ocean, and land surface, water influences and is affected by climate. Every change in the climatic system affects the hydrologic system. The possible effects on water sources have received a lot of attention, but it is important to recognize the changes in water quality that are also present. The mobility and dilution of pollutants may be impacted by predicted variations in precipitation and temperature, as well as by changes in river flow. Higher water temperatures will change the speed of chemical reactions and when combined with a drop in water quality, the ecological status of freshwater. (Andrade et al., 2018)

Climate change is not the only factor affecting water quality. Within the context of global change, the evolution of land use, deforestation, urbanization, and the carrying out of waterproofing measures in some regions may also contribute to the decline in water quality. However, it is frequently observed that urban, industrial, and agricultural human activities are primarily responsible for water pollution. as a result of these actions, the effect of climate change on surface water quality may cause deterioration. When the reduction of point source pollution occurs in several nations, climate change effects may lead to a rise in diffuse pollution. This increase may be due to various factors, such as urban or agricultural runoff, even if wastewater treatment facilities operate at their maximum capacity. (Bates et al., n.d.).

In this paper, using the GPS-x program to design and simulated the water treatment plants. Numerous domestic and international researchers investigated the capability of the GPS-X program to model and simulate any wastewater and water treatment system component or entire facility to achieve their research objectives(hatch, 2022). After calculating the complete sample results, plant data was utilized to construct and calibrate GPS-X models. Additionally, the current facility utilizes the GPS-X to increase capacity, operational efficiency, and effluent quality. They discovered that the calibrated model produces exact results that closely resemble the actual outcomes of the program (Mhashhash et al., 2018) . Simulations were done under various scenarios to examine the effects of related operational variables on the plant's capacity and performance regarding ultimate effluent quality. We can control the flow and any parameter that needs to change by the input section in the simulation.

Area of Study and data

These papers take data from the AL Qadisiya water treatment station in the Karkh region. Al-Qadisiya station is a surface station located in the Karkh region with an area of about (48000 m2). The station serves the Al-Qadisiya area with drinking water and has a purification capacity of roughly 100,000 m3/day, making up about 8% of all the stations in Baghdad's purification capacity. Provide clear water to this region. The capacity of this station is divided into two branches; an old project with a capacity of about (149760 m3) was created, and A new project with a capacity of about (86400 m3) since 1976, the data taken from 1/1/2022 to 31/12/2022.

Numerous variables must be considered when selecting the optimal water treatment procedures for a specific water source. Several considerations must be considered, including the quantity of water requiring purification, the availability of suitable facilities, suitable operators and administrators, and the total number of consumers involved. (Clark et al., 2012) figure 1 show the location of AL Qadisiya plants by Google map.

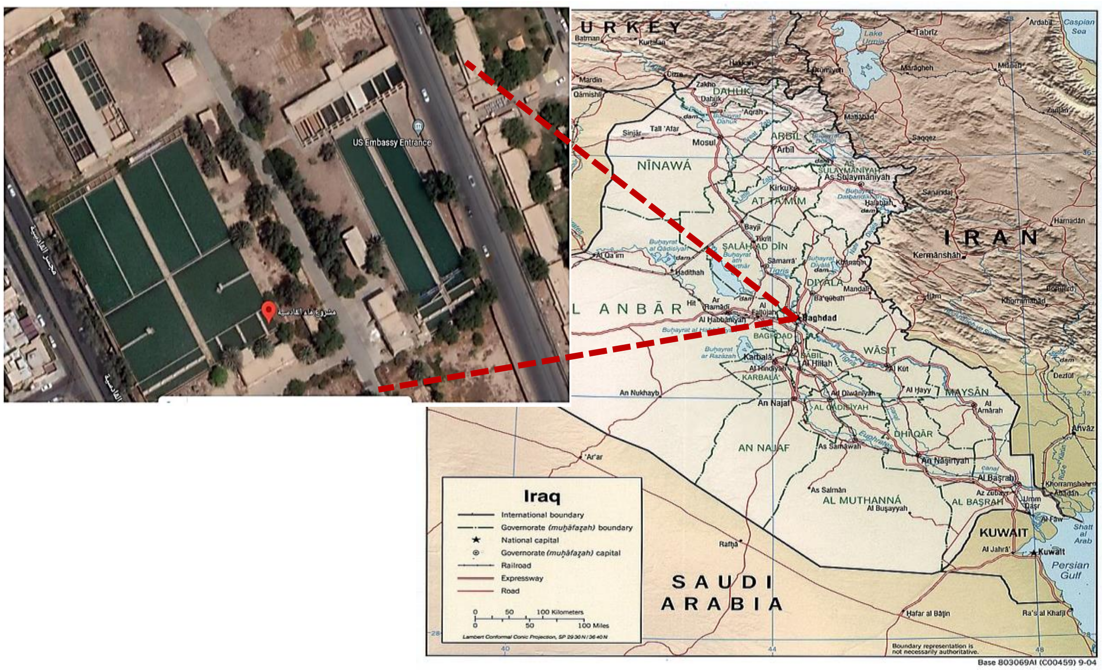


Figure (1): location of al-Qadisiya water treatment plants(by use google map)

The optimal water treatment plants consist of, **(**Coagulation, flocculation, sedimentation, filtration, and disinfection). During the coagulation and flocculation processes, the electrostatic charge of unsettled solids is neutralized or decreased. This process sets up the van der Waals force of attraction, leading to the gathering of particles by adding the chemical dosage, such as alum (Abbasi et al., 2021).Furthermore, During the flocculation stage, physical processes transform the tiny floc particles created by the rapid mix into larger floc aggregates; the clustering rate is determined by the velocity at which the particles collide, Additional chemicals might be applied to enhance the settling or filtering properties of the coagulated material.

Anionic polymers are frequently employed to speed up the development of excellent flocs for settling; they can also increase the flocs' strength, weight, and density.

Separated and resolved clusters that have undergone flocculation and coagulation in water as part of the process under consideration. The flocs cluster and gather as refuse at the sedimentation tank's bottom. As the flocs settle to the bottom of the sedimentation tank, the effluent water is discharged through the tank's upper collecting basins. (Abbasi et al., 2021) the last step of water treatment is filtration and disinfection, Sand filtration is a widely used technique for purifying drinkable water, specifically targeting removing relatively large suspended particles. Water treatment often employs two primary categories of sand filters: rapid sand filters (RF) and slow sand filters (SF). (Al-Ansari, 2013) the figure2 show the treatment process.

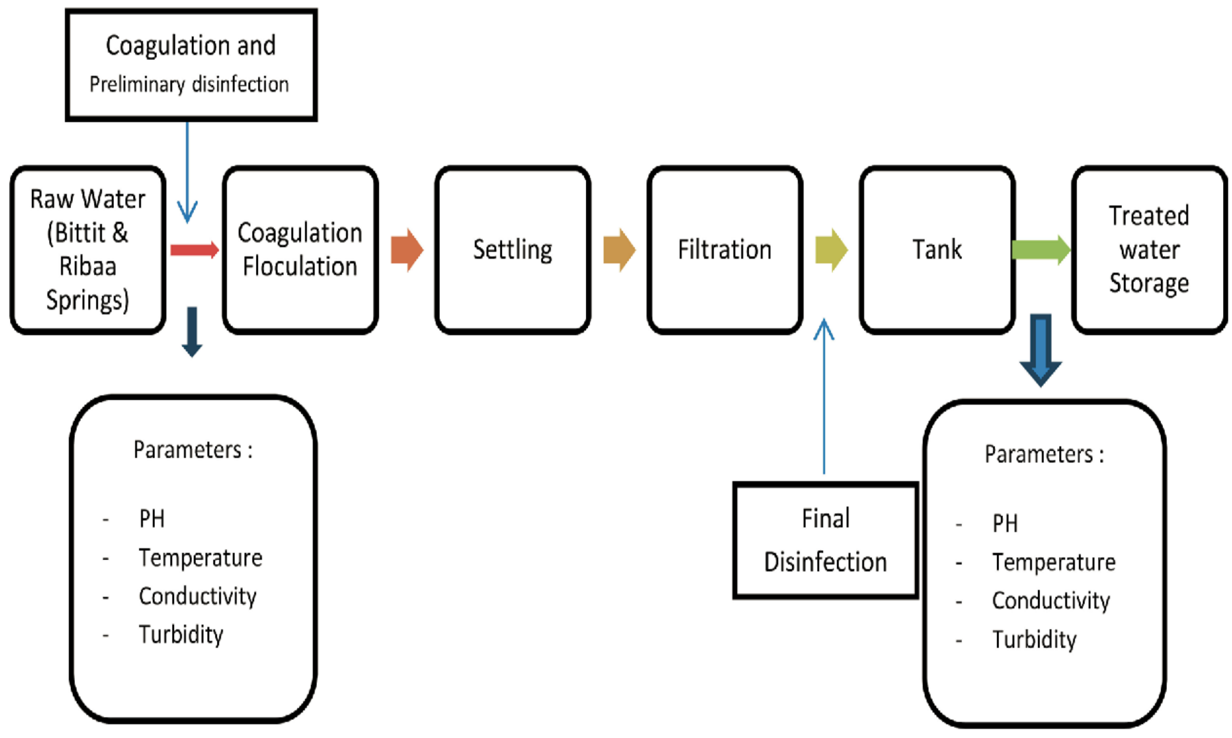


Figure (2): water treatment process

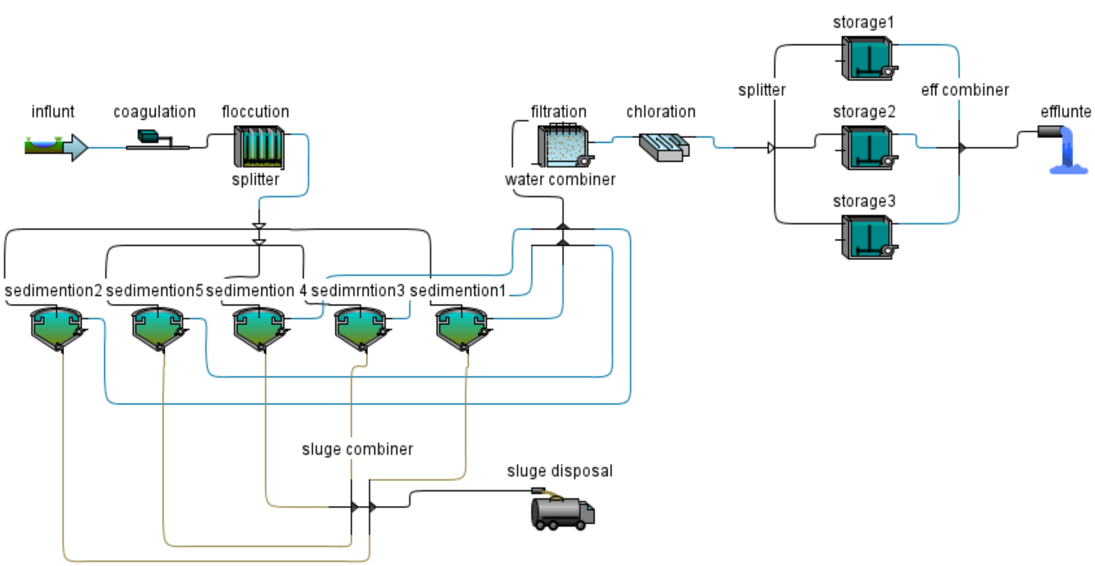
Some of the data that collected from the station are (the volume of tanks and the number of tanks, Ph, turbidity, alkalinity, total dissolved solids and total suspended solids) to get the best result of effluent water that matches Iraqi standards. Three scenarios were applied in the water plane to show the effect of climate change on the plant operation by changing the number of tanks and parameters.

Table 1: some parameter uses in simulation

Parameter	**Value**
Temperature	14.75 C
Turbidity	19 NTU
Alkalinity	195.75mg/l
Hardness as CaCO3	294.75 mg/l
Calcium as Ca	70.5 mg/l
Chloride as CL	59.75 mg/l
Magnesium as Mg	25.25mg/l
pH	7.8
Color Hazen	<5
Total dissolve solids	549.75mg/l
Suspended solids	36mg/l
Nitrite as NO2	0.0043mg/l
Nitrate as NO3	0.8525mg/l

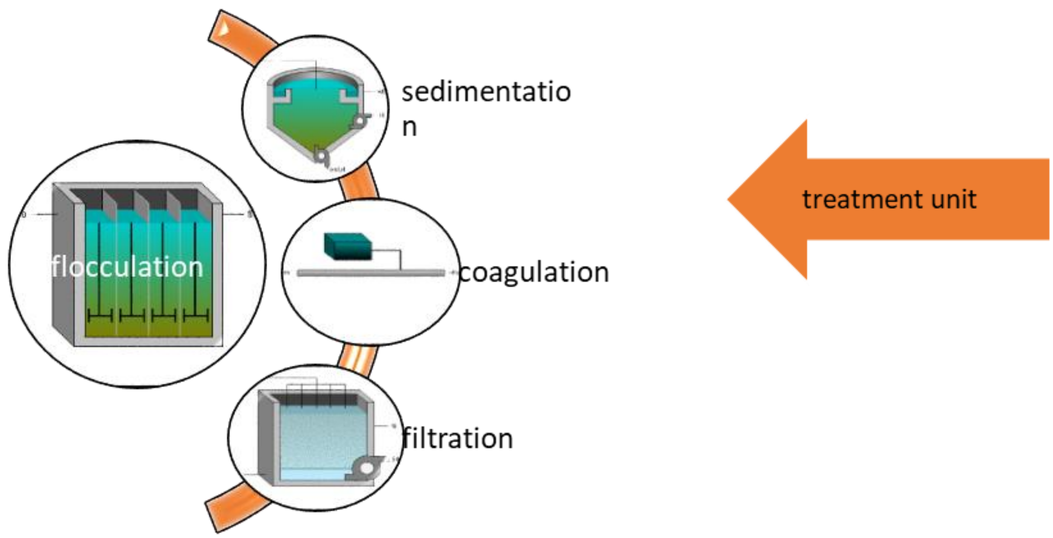
Different simulation software for water and wastewater treatment facilities, such as SIMBA, GPS-X, AQUASIM, Bio Win, STOAT, FOR, and WEST, promote these models. Simulation and modelling tools evaluate process methods, optimize designs, and conduct cost analyses. The GPS-X is the best software program to design and simulate the water treatment plan. In addition, it is the first version used for water treatment. (Al-Ansari, 2013) The GPS-X program is generally regarded as a useful software tool for evaluating the preliminary design of water and wastewater treatment plants (WTPs). Moreover, this software assists in explaining the efficacy of the plant in different situations. A conclusion may be made that validating development plans is a complex task. (*The Greenhouse Gas-Induced Climate Change Over the Indian Subcontinent as Projected by General Circu*, n.d.)

GPS X is a modular, multipurpose modelling environment for simulating municipal wastewater treatment plants. Enables investigating the complex interactions between various units' processes in the plant interactively and dynamically. The GPS-X program is generally regarded as a useful software tool for evaluating the preliminary design of wastewater treatment plants (WTPs). Moreover, this software assists in explaining the efficacy of the plant in different situations. The water treatment facilities of Al Qadisiya include two flocculation tanks, six sedimentation tanks with two branches, and eight filtration tanks. Figure 3 shows the layout of the water treatment facility as determined by the program, where scenario 1 (average flow) and scenario 2 (maximum flow) use the same number of tanks but differing parameter values. In addition, use half as many containers in scenario three's minimum flow. This scenario is used to control the impact of climate change on water sources by decreasing or increasing the flow rate and the amount of polluted particles.



Figure(3): layout of water treatment by GPS-X

Figure 4 describes the water treatment unit used in GPS-X. This unit displays the quantity of water that passes through each unit and the necessary parameters (TSS, TDS, HRT for each tank, turbidity, color, TSS removal, pH, and hardness).



Figure(4): treatment unit

Martial and methods

Climate change is not the only determinant impacting water quality, Incorporated within the framework of global change, the process of land use evolution, deforestation, urban expansion, and the implementation of waterproofing measures in some areas may also play a role in the deterioration of water quality. (Kundzewicz, 2008) According to previous research, there is much uncertainty about the predicted changes in precipitation and temperature over the period to come. According to estimates, the average global temperature increased by 0.8 C over the past century due to greenhouse gas emissions. In addition, scientists have determined that recent years have been the hottest in the past century. Due to the increase in global temperature in recent years, there has been non-uniformity in precipitation changes. (Guchi, 2015) description of changes includes temperature, precipitation, sea level, river flow, soil moisture, groundwater evaporation, and cryospheric features. The water cycle accelerates with time, as seen by growing evaporation and precipitation rates. (Ahmed et al., 2020) The two factors that effects on the climate change:

Temperature

The first thing to remember is that temperature (generally) significantly impacts nearly all physical-chemical equilibriums and biological responses. Evaporation and complexation are a few examples of water-related changes or actions that will be accelerated by raising water temperature. This widespread occurrence generates concentration. The quality of the water is greatly impacted by temperature changes and changes in the amount of dissolved compounds in the water. The concentration of some pollutants is reduced due to low water velocity (nutrient uptake and adsorption by aquatic plants, complexation of heavy metals on suspended particles, and settling). (Murdoch et al., 2000)

Increasing air temperatures affect the timing and seasonality of snowfall and discharge, resulting in more precipitation during the winter. As opposed to snow, melting occurs earlier in the winter and spring. These modifications will likely affect the magnitude and timing of seasonal peak flows, including shifting spring runoff peak periods forward and decreasing summer low flows. Air temperature increases impact water quality, including biogeochemical cycling, primary production, solubility, reaction rates, and bacteria survival. (Amanullah et al..,2020)

Increases in water temperature impede the capacity of surface waters to store oxygen, which may reduce the productivity of streams already affected by biological oxygen demand (BOD). The duration and intensity of stratification significantly affect seasonal changes in surface water quality. (Xia et al., 2015)

Precipitation:

Researchers have discovered a significant positive correlation between river nutrient loading and elevated volumes of nutrients originating from outside sources. Warmer temperatures would accelerate soil processes, such as the decomposition of organic matter, increasing nutrient concentrations in rivers. Due to stream soil erosion, more frequent and intense rainfall events will also result in greater concentrations of suspended particles. When stream flow is reduced, there is less capacity for dilution, which results in higher nutrient concentrations entering reservoirs from point pollution sources. The effect of climate change on streamflow, lake levels, and groundwater recharge is primarily determined by precipitation. (Ling et al., 2013)

Results

Analyses of raw and treated water samples were conducted to determine the efficacy of this facility in treating and removing pollutant components from water. This model uses actual station data that has been calibrated to approximate the actual situation as possible. Then, compare the results with the water standard to ensure the station's performance and determine how much these WTP plans can be reliable.

Changes in flow rate and the concentration of polluted particulate in water result from climate change for plants. The station data will be divided into four seasons to show the impact of changes in climate on the water parameter and the WTP planet. The outcome of this scenario is displayed below. After calibration and adjustment, the parameter and chemical dose make the program's results more accurate than the actual data figure 4 show the different between actual and simulated parameter that indicted the simulation data more effaced that actual. As a result, it conforms to Iraqi water standards. The figure 5 clarify that a simulation model's efficiency for removing total dissolved solid, NO2, NO3, and conductivity is more effective than actual plans.

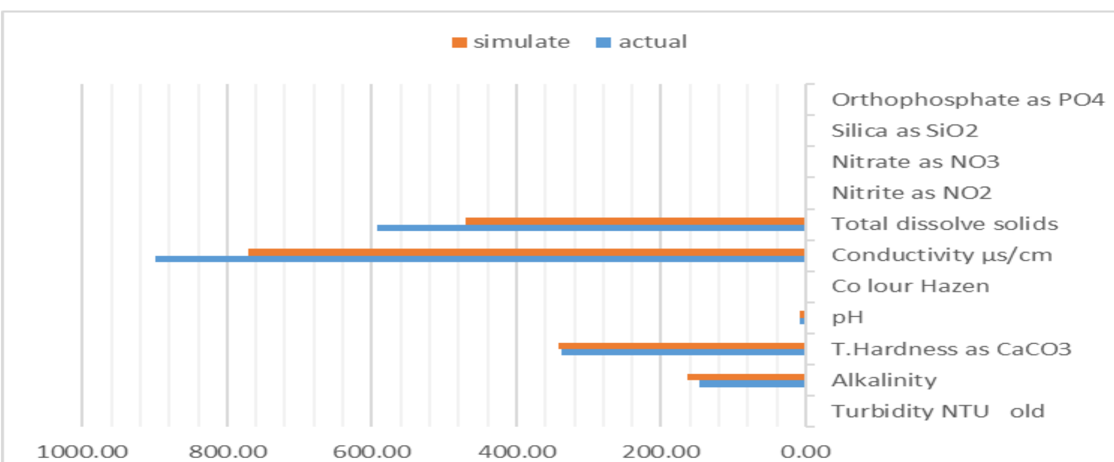


Figure (5): different between actual and simulated date

In scenario one for winter season, the river's discharge will increase, as a result increasing pollution particles. the increase in water discharge rate significantly impacted water quality. During the heavy rainfall, the concentrations of metals, certain organic compounds, faecal coliform bacteria, and nitrates increased. In addition, floods can cause the displacement of pollutants between polluted soils and sediments, And the soil erosion brought on by flooding brings a significant amount of nutrients, pathogens, and pollutants into the aquatic environment.

The figure 6 shows the relationship between parameter and time, the figure showed that the parameter changes constantly with the change of time and change in season. the result in this scenario matches the Iraq standard and global requirement for water treatment, allowing this scenario to be used in all water station cases. It illustrates the relationship between total suspended solids and time. Consequently, the variation in the quantity of TSS is considered with the variation in simulation duration. This analysis specifies the time but also considers the effluent flow in relationship to the treatment procedure duration. The time calculation is based on the population of Al Qadisiya in 2022 based on the data. For instance, the relationship between the duration of the procedure and the quantity of solids is illustrated. Consequently, the modelling results indicated that increasing the simulation duration increased the removal of TSS, so the overall efficiency of the treatment system also increased.

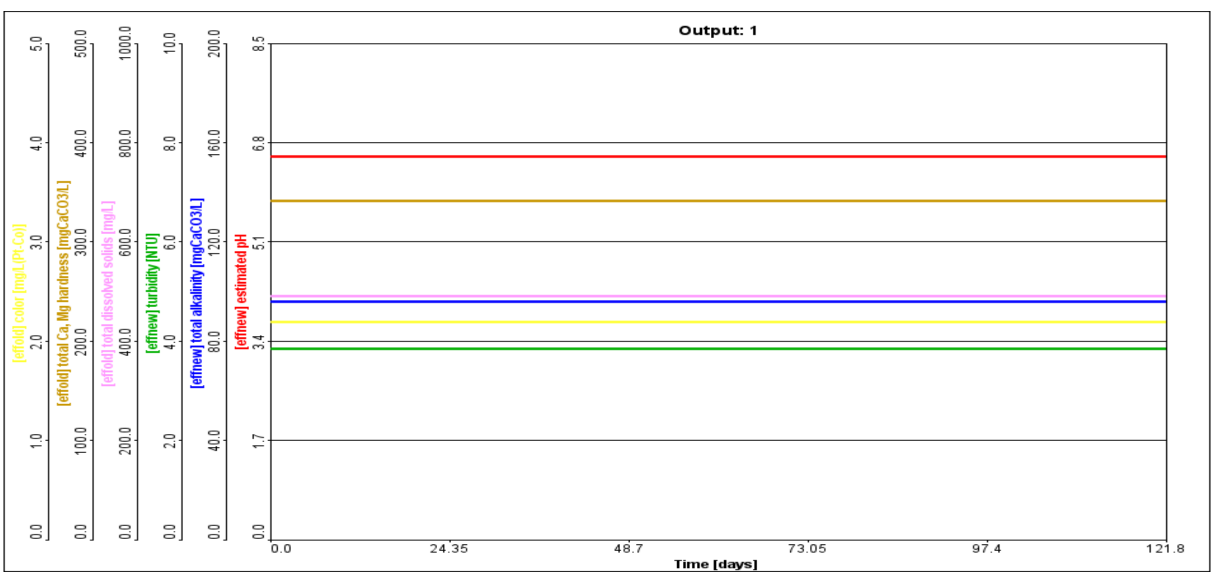


Figure (6): relationship between treated parameter and time

From simulation of water plants, the hydraulic retention time for flocculation unit is (39.1 - 87.71) min for both parts. the typical range for HRT in flocculation is 20-60 minutes, depending on the qualities of the raw water, and the temperature of the water. (Xia et al., 2015) Furthermore, the HRT for the sedimentation tank from the simulation is about (5-10 hours) for each tank to get the best result for settling all suspended particles, that not removal by flocculation process. otherwise, The HRT requirement for a sedimentation tank is between 4 and 9 hours in the summer and autumn. Even though the facility retains large quantities of sludge that must be handled, this standard improves the removal process's efficacy. Low levels of dissolved oxygen in the water during a dry season may have contributed to the rising temperature observed by the researchers. Additionally, higher alkalinity during the summer is believed to accelerate the decomposition rate. (Ling et al., 2013)

the figure 7 show the different between for season, the flow in autumn is the highest value compared with another season. It can conclude from the graph below that the highest possible concentration of a parameter under warm conditions will impact the growth of aquatic vegetation. However, heated water can eliminate adjacent plant life and pathogens.

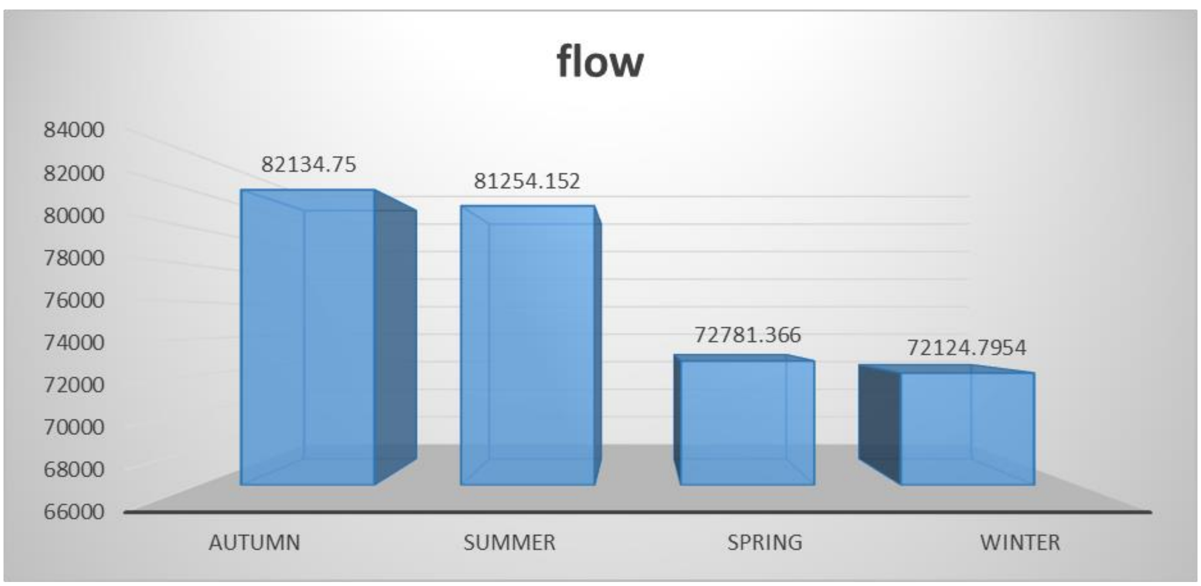


Figure (7): flow in different season

Figure 8 clarifies the difference in total dissolved solids, and total alkalinity for each season. It shows that the total dissolved solid increases in summer and spring when water temperature increases. Low levels of dissolved solids in the water during a dry season may have contributed to the researchers' observation of an increased temperature. Additionally, elevated alkalinity during the summer is believed to accelerate the decomposition rate. The decrease in turbidity following the monsoon season occurs more significantly at higher levels of suspended particles than at higher levels of total dissolved solids in ponds or the discharge of organic from residences or local effluents.

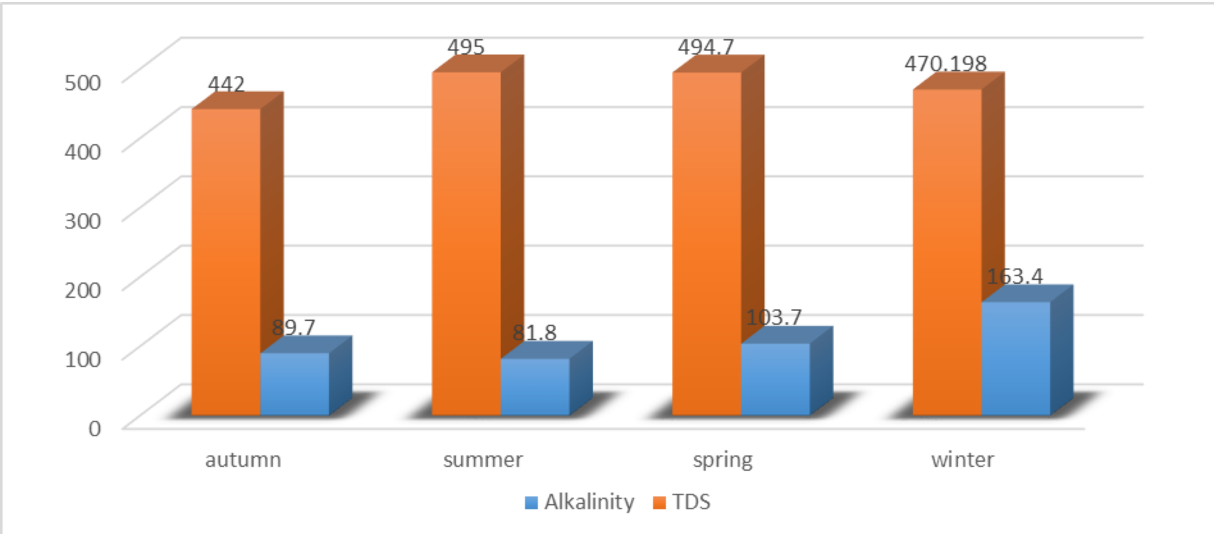


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Figure (8): alkalinity and TDS in four seasons

The other two scenarios can be used to represent the impact of climate change on the operation of plants during different seasons. The difference between the three scenarios is the parameter and number of basins after calibrating and validation of the parameter to assure the reliability of this model. It concludes that climate change affects water by altering the discharge and quantity of Polluted particles in unfiltered water. This simulation can be used to achieve the best water treatment results. It can use this simulation in average, maximum, and minimum flow. Figure 9 shows the difference between the three scenarios. The flow rate in scenario two is the highest value compared with another scenario, about 94021m3 /day in summer and spring.

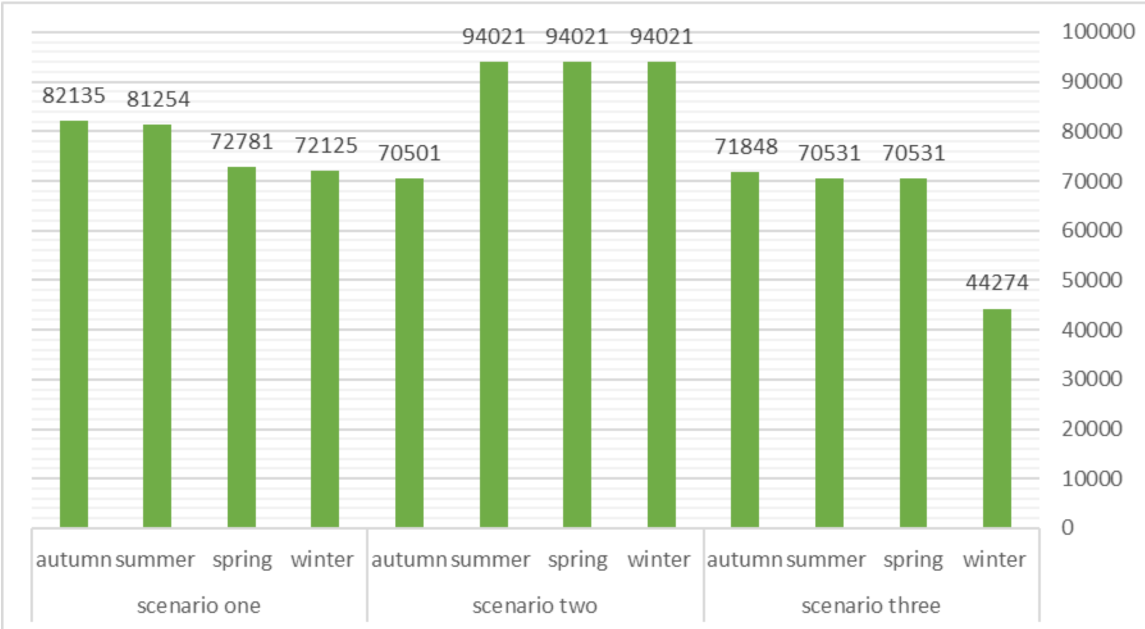

Figure (9):the flowrate in three scenarios

Figure 10 represents a meticulous diagram of the entire design of the Al-Qadisiya water treatment facility.

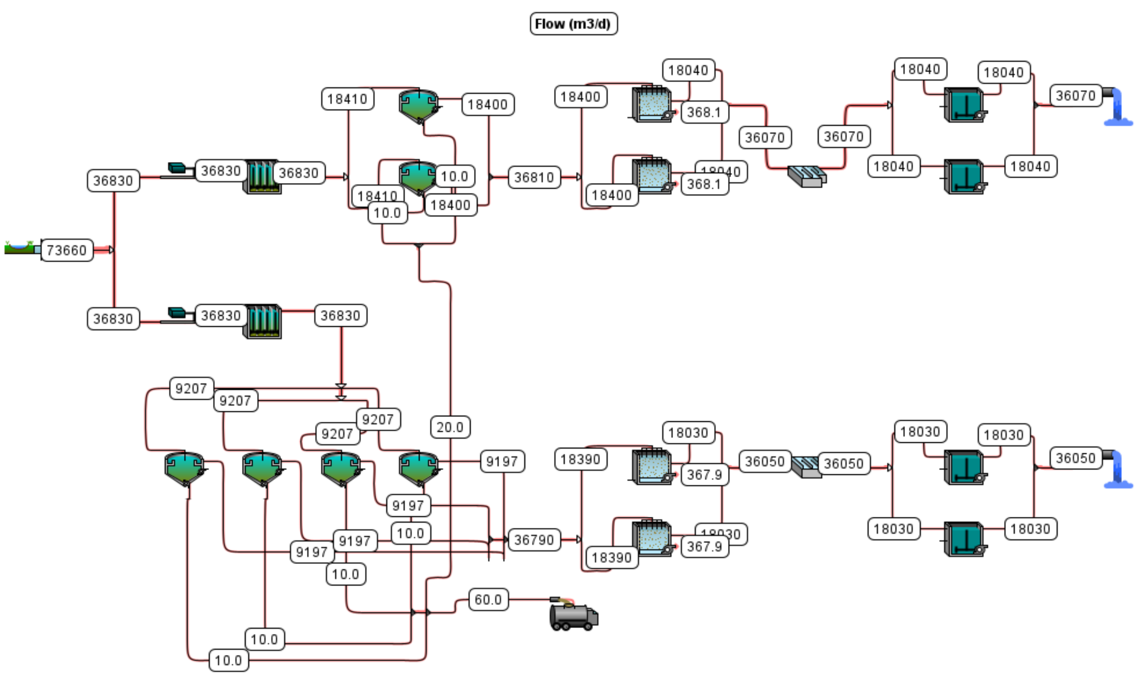

Figure (10): flowrate in al-Qadisiya water plants

Conclusion

To protect water, it is necessary to eliminate contaminants sufficiently through water treatment. Thus, Al-Qadisiya WTP is one of the Iraqi facilities whose operation needs to be completed. Therefore, the design must consider certain parameters in the influent that must be controlled to increase the plant's efficacy. The water undergoing treatment at the facility in 2022 satisfies the specified requirements for effluent concentrations. This observation suggests that the facility has satisfactory operational efficiency.

There are recommendations for improved performance regarding the design criteria, management issues, and operational issues. The excess flow rate must be treated by introducing a new idea to improve the plant's organic and suspended solid removal. It can Use GPS-X to solve the water problem and use the program with different situations to simulate the water plant with different scenarios to get the best simulation result.

Lastly, monitoring and maintenance should be performed, and the operator responsible for maintaining the treatment facility. The frequent maintenance of plant units is essential for keeping their function, preventing damage, and ensuring efficient operation. As long as relying on a single line is not harming the plant's performance, it is recommended to undertake maintenance activities regularly, which will be reduced.

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MODELING INITIAL VELOCITY PROFILES FOR CONTINUOUS FREE-VIBRATING BEAMS USING DISTRIBUTED IMPULSE LOADING

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ABSTRACT

The purpose of this paper is to develop an analysis method to solve the free vibration response for a continuous system subjected to an initial velocity profile using an initial velocity approximation based on an equivalent impulse load. It has been shown that for a single degree of freedom system, the initial velocity can be applied as an impulsive loading with a very short duration. The proposed analysis method in this paper is done for a continuous system to show that this approximation works not only for a single degree of freedom system, but for a continuous system as well. The assumed initial velocity profile is from a case of interest to the authors. The available analytical solution for a continuous system such as a simply supported beam subjected to an initial velocity is compared with the finite element solution determined from SAP 2000 using the initial velocity approximation. The SAP2000 solution using the proposed approximation showed an excellent agreement to the analytical solution. Finally, this method can be used to find the dynamic response of complex frames subjected to an initial velocity profile, where the analytical solution for such cases is difficult to find.

Keywords: free vibration, initial velocity, SAP2000, FEM.

1. INTRODUCTION

In general, the analytical solution of a structural frame subjected to an initial velocityprofiledoesnotexist.Thisproblemisabitesotericandthusisnotcovered in traditional structural dynamics texts [1,2,3,4]. For that purpose, this paper provides a solution for a structural frame subjected to an initial velocity profile using a distributed impulse load in SAP2000.

SAP2000 is a finite element program commonly used by structural engineers [8]. Unfortunately, there is no direct way to find the dynamic response for a structure subjected to an initial velocity profile within this program. Therefore, the initial velocity profile has to be converted to an impulse load.

According to the authors in Reference [5], for a single degree of freedom system, animpulsive loading could be applied as an initial velocity. When this is done an accurate result has been achieved for a very small ratio of the load duration time to the natural period of the system. In this work, we will convert the initial velocity profile of a continuous system such as a simply supported beam into a distributed impulse load using SAP2000 and verify the results with the available analytical solution.

The analytical solution for a continuous system such as a simply supported beam subjected to an initial velocity profile is available in References [1, 2, 3, 4]. Once the results have been confirmed against the available analytical solution, the proposed method will be used to find the response of a structural frame subjected to an initial velocity profile.

2. METHODS

2.1 Initial velocity approximation

Consider a single degree of freedom system subjected to a forcing function *F(t)* with a mass of *m* and a linear spring with stiffness *k* where damping is ignored as shown in Figure-1.The well-known equation of motion for the system shown in Figure-1 is given by [1,2,3,4]:

$$m\ddot{u} + ku = F(t) \tag{1}$$

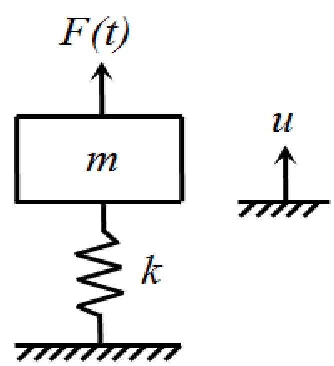

Figure-1. Single degree of freedom system.

It has been shown by the authors in Reference [5] that an impulsive loading could be applied as an initial velocity. Equation (1) is rearranged as:

$$\ddot{u} = \frac{F(t)}{m} - \frac{ku}{m} \tag{2}$$

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Nominal axial and flexural strengths of high-strength concrete columns

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Abstract. The ACI building code is allowing for higher strength reinforcement and concrete compressive strengths. The nominal strength of high-strength concrete columns is over predicted by the current ACI 318 rectangular stress block and is increasingly unconservative as higher strength materials are used. Calibration of a rectangular stress block to address this condition leads to increased computational complexity. A triangular stress block, derived from the general shape of the stress-strain curve for high-strength concrete, provides a superior solution. The nominal flexural and axial strengths of 150 high-strength concrete columns tests are calculated using the proposed stress distribution and compared with the predicted strength using various design codes and proposals of other researchers. The proposed triangular stress model provides similar level of accuracy and conservativeness and is easily incorporated into current codes.

Keywords: high-strength concrete; flexural and axial strengths; triangular stress block; interaction curve; column; beam

1. Introduction

The use of high-strength concrete (HSC) in buildings and transportation industry has increased in worldwide popularity. HSC has the advantages over normal-strength concrete (NSC) in strength and durability (Myers, 2008). HSC offers reduction in section size for columns when used in high-rise buildings. This gives a strong motivation to examine the current ACI 318 (2014) provisions for nominal strength calculations for HSC columns because they are developed based on NSC columns tests (Bae and Bayrak 2013, ACI 441.1R 2018). Several researchers conducted tests to study the behavior of HSC columns reported that the axial and flexural strengths of HSC columns could be over predicted by the current ACI 318 (2014) rectangular stress block expressions (Wahidi 1995, Ibrahim and MacGregor 1996, Lloyd and Rangan 1996). While the calculation of nominal strength is addressed, the lack of attention to the effects on the design strength lead to solutions where proposed modifications to strength reduction factors minimize the benefits of using high-strength concrete.

Khadiranaikar and Awati (2012) conducted experimental tests of plain concrete columns, reinforced concrete members such as eccentrically loaded columns, and beams in pure flexure. Based on the test results, stress-block parameters for wide range of concrete strength have been developed. Yang *et al*. (2013) proposed a generalized equivalent stress block model that works for both light and normal weight HSC. The coefficients used in the proposed stress block were formulated based on a nonlinear regression analysis through an extensive database of test data.

Recently, Al-Kamal (2019), the author of this paper, proposed a triangular stress distribution to calculate the flexural strength of high-strength concrete beams. Extending this concept, the triangular stress distribution is suggested in this paper to calculate the nominal axial and flexural strengths of HSC columns.

The shape of the ascending part of the stress-strain curve for HSC remains linear up to a stress closer to peak stress than the curve for NSC. Hence a triangular stress distribution is better suited for HSC (Wahidi 1995). In this research, the triangular stress distribution is studied thoroughly and validated using large database consisting of 150 tested HSC columns with concrete strengths above 55 MPa (8,000 psi) and up to 130 MPa (18,800 psi). In addition, the results obtained by using the triangular stress block is compared with the results of recent studies on the equivalent rectangular stress block for HSC columns, i.e., ACI 318 (2014), CEB-FIP Model Code (2010), NZS 3101 (2006), CSA A23.3 (2004), EN 1992 (2004), Mertol *et al*. (2008), Bae and Bayrak (2003), Ozbakkaloglu and Saatcioglu (2004), Ibrahim and MacGregor (1997), Azizinamini *et al*. (1994). Based on the comparison results, a change to the stress block parameters of various codes is examined.

2. Research significance

The current ACI 318-14 provisions allow an equivalent rectangular stress block for calculation of member strength. The shape of the stress-strain curve is adjusted by the factor β_1 to account for the higher strength. Above 55 MPa (8,000 psi) there is no further change in this value, in part because higher strength tests were not available when the limit was established. While other design codes and individuals have proposed alternative stress block models for calculating strength of HSC members, there is no universal agreement

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Nominal flexural strength of high-strength concrete beams

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Abstract. The conventional ACI rectangular stress block is developed on the basis of normal-strength concrete column tests and it is still being used for the design of high-strength concrete members. Many research papers found in the literature indicate that the nominal strength of high-strength concrete members appears to be over-predicted by the ACI rectangular stress block. This is especially true for HSC columns. The general shape of the stress-strain curve of high-strength concrete becomes more likely as a triangle. A triangular stress block is, therefore, introduced in this paper. The proposed stress block is verified using a database which consists of 52 tested singly reinforced high-strength concrete beams having concrete strength above 55 MPa (8,000 psi). In addition, the proposed model is compared with models of various design codes and proposals of researchers found in the literature. The nominal flexural strengths computed using the proposed stress block are in a good agreement with the tested data as well as with that obtained from design codes models and proposals of researchers.

Keywords: beams; flexural strength; high-strength concrete; triangular stress block

1. Introduction

The use of high-strength concrete (HSC), f_c'>55 MPa (8,000 psi), has become the most widely used and most consumable building material in the world in recent years. HSC offers reduction in section size, span length, and weight of concrete structural elements when used in high-rise buildings and bridges. In most design codes, the traditional stress block that is developed for normal-strength concrete (NSC) is still being used for the design of HSC elements. This gives a strong motivation to examine the current ACI 318 (2014) provisions for nominal strength calculations for HSC members because they are developed based on NSC columns tests (Bae and Bayrak 2013, ACI 441.1R 2018). Several stress block alternatives to calculate the strength for high-strength concrete members have been proposed; i.e., CEB-FIP Model Code (2010), Mertol *et al*. (2008), NZS 3101 (2006), CSA A23.3 (2004), EN 1992 (2004), Bae and Bayrak (2003), Ozbakkaloglu and Saatcioglu (2004), Ibrahim and MacGregor (1997), Azizinamini *et al*. (1994).

Recently, some researchers have proposed stress block models based on a tested data of HSC beams and columns. Khadiranaikar and Awati (2012) have developed stress-block parameters for wide range of concrete strength. The experimental program includes testing of plain concrete columns, reinforced concrete members such as eccentrically loaded columns, and beams in pure flexure. A generalized equivalent stress block model that works for both light and normal weight HSC is proposed by Yang *et al*. (2013). The coefficients used in the proposed stress block were formulated based on a nonlinear regression analysis through an extensive database of test data.

Designing of HSC members requires a stress block model that best represents the concrete stress-strain characteristics. In this research, the stress block model is determined from the shape of the stress-strain curve of HSC. For the stress-strain relationship of HSC, as the concrete strength increases, the strain increases and reaches a peak value of 0.003. The shape of the ascending part of the relationship becomes more linear and steeper. Similarly, the slope of the descending branch becomes steeper. The general shape of the stress-strain relationship for HSC is similar to a triangle. Hence, a triangular stress distribution is better suited for HSC (Wahidi, 1995). Wahidi (1995) used the experimental results of nine HSC columns tests to compare the triangular stress block and other stress blocks with a proposed modified rectangular stress block. The triangular stress block was slightly more conservative than the modified rectangular stress block. Extending this concept, a triangular stress block is suggested in this paper to calculate the nominal flexural strength of HSC beams possessing a concrete strength above 55 MPa (8,000 psi). The results obtained by using the triangular stress block is compared with the results by using stress blocks of various codes and proposals of researchers. The comparison is done by using test results of 52 tested singly reinforced high-strength concrete beams having concrete strength above 55 MPa (8,000 psi).

2. Research significance

The current ACI 318-14 provisions use a rectangular stress block for all concrete strength. The shape of the stress-strain curve is adjusted by the factor β_1 to account for the higher strength. Above 55 MPa (8,000 psi) there is no further changes in this value. In addition, some design

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Estimating Elastic Buckling Load for an Axially Loaded Column Bolted to a Simply Supported Plate using Energy Method

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Abstract

This paper deals with the elastic stability of a column bolted at its mid-height to a simply supported square plate and subjected to a concentrated load, using energy method. A uniform homogeneous column is assumed to be pinned at both ends. From symmetry considerations, half of the column is modeled by making the plate acting as a torsion spring on the column at its mid-height. The column length and cross-section, plate dimensions and thickness, and the material properties for the column and the plate catch the interest of the author. The problem is solved by using energy method and ultimately, the elastic buckling load is found. The analytical elastic buckling load is compared with a numerical solution obtained from finite element method using SAP2000. The numerical results agree with the analytical solution. The finite element model is refined to catch the actual effect of the bolted plate on the elastic buckling load. It has been found that the elastic buckling load is increased due to the increase in the rotational stiffness provided from the plate.

Keywords: Column, Elastic Buckling, Axial Load, Energy Method, FEM.

1. Introduction

Buckling is an important consideration in structural design. In some cases, it governs the design before the strength criterion does especially when the member is slender and lightweight [1]. There are two general approaches in finding the elastic buckling load: a) the vector approach and (b) the energy approach [2,3].

Solutions of simple cases of buckling are given by Timoshenko and Gere [4]. Wang et al. [1] use the vector approach to give exact solutions for buckling of various structural members. In contrary, some exact solutions for columns with variable cross-section are provided in terms of Lomel functions by Elishakoff and Pelligrini [5,6].

Atay and Coskun [7] analyze Euler columns with a continuous elastic restraint using variational iteration method (VIM). However, Basbuk et al. [8] use the homotopy analysis method (HAM) to find the critical buckling load for Euler columns with elastic ends restraints. Also, the HAM method was used by Eryilmaz [9] to find the buckling load of Euler columns with a continuous elastic restraint.

Sampaio et al. [10] gives the solution for buckling behavior of inclined beam-column, using energy method. Similarly, the energy approach was used by Zdravkovic et al. [11] to study the buckling load of a three-segment stepped column subjected to an axial load. Rychlewska [12] provide numerical solutions for axially functionally graded Euler-Bernoulli beam for various boundary conditions. In this paper, the energy approach is used to find the elastic buckling load of a column with both ends pinned and bolted to a simply supported plate at its mid-height. The exact solution from this work is compared with the analytical solution provided by Wang et al. In addition, a finite element solution is performed in this paper to compare the results and to study the effect of the bolted plate on the buckling load.

2. Problem Definition

The case studied in this paper is shown in Figure (1-a). The column is bolted to a simply supported plate at its mid-height. The column length is ($2L$) and the plate is assumed square with a dimension (a). For the purpose of simplicity in calculations shown later, the plate dimension is assumed equal to ($1.2L$). The column and the plate materials are assumed to be the same. The modulus of elasticity of the material is (E). The column cross-section is shown in Figure (1-b). For the purpose of mathematical simplicity, the plate thickness is assumed to be the same as the column width (b).

The problem is simplified by taking advantage of symmetry and considering the plate effective in the x-direction only and acting as a torsion spring at the middle of the column. Therefore, the stiffness of the torsion spring is determined by shrinking the y-direction of the plate to a width equal to the column depth (h) and treats the plate as a simply supported beam in the x-direction. Based on the above assumption and since the thickness of the plate is taken as the column width (b), the plate and the column is now having the same moment of inertia (I). Note that buckling is governed by the weak-axis buckling; therefore, the moment of inertia is ($hb^3/12$). To get the

Progressive Collapse Assessment for Concrete Multi-Story Buildings – Review

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ABSTRACT

Progressive collapse is a catastrophic partial or complete failure of a structure that occurs when a primary structural component or more, such as a column or any vertical load-bearing component, is lost or damaged. This loss may be caused by a car accident, an airplane crash, a service system explosion, a missile used in a military operation, a bomb used in a crime or building destruction, a hurricane, a tornado, or an earthquake, as well as other natural disasters. Because of the numerous collapses that have happened since the turn of the century, the progressive collapse has become a popular research topic. Therefore, numerous international structural codes and standards have begun to pay attention to the resistance of facilities to progressive collapse and have formulated guidelines to limit this phenomenon.

Keywords: Progressive collapse, RC structures, Multi-story buildings, GSA guidelines, DoD guidelines, Review

1. Introduction

Progressive collapse is a series of failures triggered by the sudden loss of a single or a few sustaining parts. When a part of a structure fails, the structure must have a backup load-bearing path and move the weight that part was carrying to other parts. The release of stored internal energy as a consequence of the failure of a structural member result in an increase in the dynamic internal forces exerted by surrounding members.

Following the redistribution of the load through a structure, each structural component supports a separate set of loads, which includes the additional internal forces as well. A local failure can occur if any redistributed load surpasses the bearing capacity of adjacent uninjured components, resulting in another local collapse. Such sequential failures have the potential to propagate from one element to the next, eventually affecting the entire structure or a significant piece of the structure disproportionately. In most cases, the progressive collapse occurs in a couple of seconds or less. The concept of disproportionate collapse may be included in the definition of progressive collapse, which means the final failure does not correspond to the events that precipitated it in the first instance [1]. The United States General Services Administration's definition of progressive collapse (GSA) [2] as " a situation where a local failure of a primary structural component leads to the collapse of adjoining members which, in turn, leads to additional collapse. Hence, the total damage is disproportionate to the original cause."

Nair [3] has also defined the "progressivity" of a collapse as a "the ratio of the total collapsed area or volume to the area or volume damaged or destroyed directly by the triggering event".

The American Society of Civil Engineer (ASCE) [4] defines progressive collapse as "The spread of an initial local failure from element to element resulting eventually in the collapse of an entire structure or a disproportionately large

ASSESSMENT OF A REINFORCED CONCRETE MULTI-STORY BUILDING AGAINST PROGRESSIVE COLLAPSE

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ABSTRACT

The progressive collapse of reinforced concrete structures occurs when one or more vertical load-bearing elements are eliminated due to man-made or natural hazards. The building's weight transfers to neighboring columns in the structure, causing the failure of adjacent members and, ultimately, the failure of a portion or the entire structure. In which the collapsing system continuously searches for alternate load paths in order to survive. This study examines progressive collapse in RC structures caused by instantaneous column removal. To investigate the collapse, typical columns are removed individually and analysis and design are continued. An eight-story reinforced concrete frame structure was considered for the study. The software ETABS V20 is used to perform a linear static analysis on a model of a regular reinforced concrete (RC) frame structure. Here, three types of column removal cases are examined: corner column removal, exterior column removal, and interior column removal. Then, the calculation of Demand Capacity Ratio (DCR) for both beams and columns are considered and compared to the GSA's acceptance criteria. The obtained DCR values indicate that columns are safe and strong enough to resist progressive collapse in all cases, whereas beams for corner column removal case are not safe for progressive collapse.

Keywords: Progressive collapse; Iraq seismic code; DCR values; RC structure; General Services Administration (GSA).

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1. INTRODUCTION

The term "progressive collapse" can be defined in a straightforward manner as the ultimate failure or proportionately large failure of a portion of a structure as a result of the spread of a local failure from element to element throughout the structure. This can be thought of as the ultimate failure or proportionately large failure of a portion of a structure. The beginning of a progressive collapse may be brought on by causes that are manmade, natural, intentional, or unintentional. A progressive collapse failure can be caused by a number of different types of disasters, including fires, explosions, earthquakes, or anything else that causes large amounts of stress and the failure of a structure's support elements. [1- 4] Progressive collapse is a complex dynamic process in which the collapsing system redistributes loads to prevent the loss of essential structural members. Beams, columns, and frame connections must therefore be designed to accommodate the possible redistribution of large loads. The collapse of the World Trade Center towers due to a terrorist attack, the bombing of the Murrah Federal Building in Oklahoma City, and the collapse of the Ronan Point building due to a gas explosion are notable examples of progressive collapse phenomena. Progressive collapse failures can be better prepared for and possibly avoided in the future as a result of studies such as the one presented

To the University of Wyoming:

The members of the Committee approve the dissertation of Mustafa Kamal Mahmood Al-Kamal presented on April 26, 2016.

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Al-Kamal, Mustafa Kamal Mahmood, Design For Prestressed Concrete Flexural Members Against Progressive Collapse, Ph.D., Civil and Architectural Engineering Department, May, 2016.

Presented in this work are the possible collapse mechanisms initiated by a precast flexural member dropping on a lower member. The ultimate goal of this research is to develop design guidelines and advice to prevent progressive collapse in such cases. The problem is complicated due to the dynamic analyses involved in the dropping, the impact, and the resulting vibration.

Analytical solutions and numerical solutions were developed to solve three possible collapse scenarios: perfectly plastic, inelastic, and elastic. These impact scenarios should provide a reasonable understanding of the dynamic behaviour for the member after impact. The analytical solution involves using Fourier series and the numerical solution involves a developed method of converting an initial velocity profile to an impulse load using SAP2000. The members are from typical parking garages.

The first solutions developed were for the perfectly plastic and elastic impact scenarios based on assumed initial velocity profiles. The resulting reactions from the impact were evaluated against ACI provisions. It has been found that a shear failure can be prevented by providing some shear reinforcement. However, the resulting bending moment is high and the member is prone to fail under flexure.

The second solutions developed were for perfectly plastic impact based on the pre-impact velocity profile of the top beam. The post-impact velocity profiles were not assumed. SAP2000 was used to calculate the post-impact velocity profiles for the upper and lower beams. The resulting shear and bending moment for the perfectly plastic scenario were extremely high and caused the member to fail. However, the resulting shear and bending moment for the case of inelastic impact did not cause failure.

Finally, a simulation of the impact using the finite element analysis COMSOL Multiphysics program was performed. When simulating impact, the COMSOL documents caution the user to check conservation of momentum and energy to ensure that the results are reasonable. Conservation of momentum has been checked and found not to be satisfied. Therefore, COMSOL Multiphysics is not recommended for this type of analysis.

DESIGN FOR PRESTRESSED CONCRETE FLEXURAL MEMBERS AGAINST PROGRESSIVE COLLAPSE

by

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Performance of Semi-Rigid Steel Connections under Monotonic and Cyclic Loadings: A Review

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Abstract: Since the turn of the century, numerous articles have been published with analysis of semi-rigid connections in steel structures. This paper offers a comprehensive survey of major recently published research work dealing with the behaviour of semi-rigid beam-column connections under various configurations of fasteners and welding lines under both monotonic and cyclic loads. The review has two main respects: the first is the moment versus curvature behaviours of semi-rigid steel connections, while the second involves finite element analysis of such connections under monotonic and cyclic loads. The main conclusions concerning the dynamic behaviours of semi-rigid steel connections emerge with regard to the vital influence of beam-column connections on the global seismic performance of steel frame structures. Developing semi-rigidity should thus be considered an effective way to achieve the required performance.

1. Introduction

An uncountable number of structures are now made of steel expressing the enormous possibilities that this material offers. Some of justifications for the choice of steel to build a structure or its elements, include its high strength to volume ratio, its reliability, and its ability to adapt to almost any architectural form, offering a wide range of possible applications, these are supported further by the availability of a large number of standardised parts.

Owing to their high ductility and energy dissipation abilities, semi-rigid steel connections have been favoured in recent moment-resisting steel frames exposed to gravitational monotonic loading alongside lateral or vertical cyclic excitations. Adequate design of members' end-to-end connections is thus required to allow these steel structures to perform well in sustaining such loads. Yet the conventional analysis of steel framed structures supposes one of the two well-known idealised extremities: the rigid joint or pinned joint hypotheses. However, currently prevalent steel frame connections are most likely to display semi-rigid responses, contributing significantly to overall member stress distribution. In general, steel structures can be formed from any combinations of simple or composite pieces joined together in a design that adequately resists forces and moments together.

DESIGN OF A STEEL SPECIAL MOMENT FRAME SUSCEPTIBLE TO HIGH SEISMIC RISK

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Abstract

This paper deals with the design of a 2-D steel special moment frame vulnerable to high seismic risk using the ASCE 7-10 Code equivalent lateral force method (ELF). The equivalent lateral force method uses an approximate procedure to find the natural period of the system to get the total base shear before the design. In this paper, the actual natural period is computed after designing a 2-D steel special moment frame and the base shear is recalculated accordingly. For this purpose, the base shear from ELF is first used to design the 2-D frame according to the drift limitations as per ASCE 7-10 Code. The direct analysis method (DAM) of AISC 360 is then used to check the strength of the steel members. The new natural period of the 2-D frame is calculated using SAP2000 finite element program. The SAP2000 natural period is used to find the new base shear. It has been found that the SAP2000 natural period increases the total base shear by 62%. Consequently, a redesign for the steel special moment frame members should be considered to account for the difference in the base shear.

Keywords: Steel special moment frame; ELF; base shear; DAM; natural period; SAP2000.

1. INTRODUCTION

Seismic design requirements are given in chapter 12 of the ASCE7-10 Code [1]. For computing the base shear of a building using the equivalent lateral force method, the code gives an alternative way to compute the natural period of the system before the design. However, the validity of this procedure needs to be checked for structures prone to high seismic risks. Therefore, in this paper the actual natural period is found to get the total base shear for a 2-D steel special moment frame (SMF) in high seismic zones.

Steel special moment frames are often used as a part of the seismic-force resisting systems in buildings designed to resist earthquakes with substantial inelastic energy dissipation [2]. Design requirements for steel special moment frames can be found in a series of U.S. building codes. ASCE 7-10 sets the basic load requirements for special moment frames with associated lateral drift limits. AISC 360 (see Reference [3]) is the main AISC specification that provides design and detailing requirements for all steel buildings. In addition, AISC 341-05 (see Reference [4]) gives detailed design requirements related to materials, framing members, connections, and construction quality assurance and quality control.

It is worth mentioning that the ASCE 7-10 permits to use three types of analyses to determine member design forces and design drifts namely: equivalent lateral force, modal response spectrum, and seismic response history analysis. Equivalent lateral force analysis is the simplest procedure; however, it can lead to a conservative design [1].

According to the authors in Reference [2], "In many cases, exact analysis will determine a substantially longer building period than that determined by the approximate methods. As a result, substantial reduction in base shear forces often can be obtained by calculating building periods using the more exact". Therefore, the purpose of this work is to calculate the natural period for a steel special moment frame after the design and check whether this period increases or decreases the base shear.

2. PROBLEM DEFINITION

The SMF is a part of a six story office building located in San Jose, CA, USA. Three special moment frames (SMFs) are considered for the east-west direction of the building. Braced frames will be used in the north-south direction. For the purpose of this research, only the east-west direction is considered in the design. The middle SMF is designed here in this research. The building geometry is shown in Figure -1-. The bay width in the east-west direction is 30 ft (9.15 m) while it is 40 ft (12.2 m) for the north-south direction. A typical 13 ft-6 in. (4.15 m) floor-to-floor heights is considered. The first story height is 17 ft-0 in. (5.2 m).

The occupancy type is planned to be offices with a design load of 50 psf (2.4 kN/m^2) plus a 20 psf (0.96 kN/m^2) allowance for partition walls. The design live load is 80 psf (3.83 kN/m^2) to account for corridors. Live load reductions will be considered. The roof has a mechanical penthouse with an equipment load of 120 psf (5.75 kN/m^2) and an additional structural self-weight equivalent to 40 psf (1.92 kN/m^2). The location is over the centerline on the north edge. The size is assumed to be 20 ft (6.1 m) east-west x 10 ft (3.05 m) north-south.

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MODELING INITIAL VELOCITY PROFILES FOR CONTINUOUS FREE-VIBRATING BEAMS USING DISTRIBUTED IMPULSE LOADING

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ABSTRACT

The purpose of this paper is to develop an analysis method to solve the free vibration response for a continuous system subjected to an initial velocity profile using an initial velocity approximation based on an equivalent impulse load. It has been shown that for a single degree of freedom system, the initial velocity can be applied as an impulsive loading with a very short duration. The proposed analysis method in this paper is done for a continuous system to show that this approximation works not only for a single degree of freedom system, but for a continuous system as well. The assumed initial velocity profile is from a case of interest to the authors. The available analytical solution for a continuous system such as a simply supported beam subjected to an initial velocity is compared with the finite element solution determined from SAP 2000 using the initial velocity approximation. The SAP2000 solution using the proposed approximation showed an excellent agreement to the analytical solution. Finally, this method can be used to find the dynamic response of complex frames subjected to an initial velocity profile, where the analytical solution for such cases is difficult to find.

Keywords: free vibration, initial velocity, SAP2000, FEM.

1. INTRODUCTION

In general, the analytical solution of a structural frame subjected to an initial velocityprofiledoesnotexist.Thisproblemisabitesotericandthusisnotcovered in traditional structural dynamics texts [1,2,3,4]. For that purpose, this paper provides a solution for a structural frame subjected to an initial velocity profile using a distributed impulse load in SAP2000.

SAP2000 is a finite element program commonly used by structural engineers [8]. Unfortunately, there is no direct way to find the dynamic response for a structure subjected to an initial velocity profile within this program. Therefore, the initial velocity profile has to be converted to an impulse load.

According to the authors in Reference [5], for a single degree of freedom system, animpulsive loading could be applied as an initial velocity. When this is done an accurate result has been achieved for a very small ratio of the load duration time to the natural period of the system. In this work, we will convert the initial velocity profile of a continuous system such as a simply supported beam into a distributed impulse load using SAP2000 and verify the results with the available analytical solution.

The analytical solution for a continuous system such as a simply supported beam subjected to an initial velocity profile is available in References [1, 2, 3, 4]. Once the results have been confirmed against the available analytical solution, the proposed method will be used to find the response of a structural frame subjected to an initial velocity profile.

2. METHODS

2.1 Initial velocity approximation

Consider a single degree of freedom system subjected to a forcing function *F(t)* with a mass of *m* and a linear spring with stiffness *k* where damping is ignored as shown in Figure-1.The well-known equation of motion for the system shown in Figure-1 is given by [1,2,3,4]:

$$m\ddot{u} + ku = F(t) \tag{1}$$

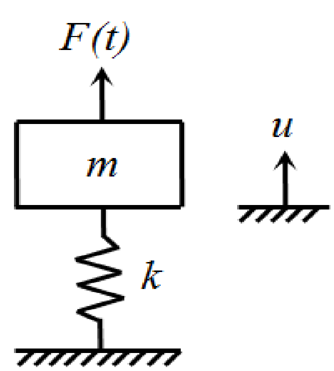

Figure-1. Single degree of freedom system.

It has been shown by the authors in Reference [5] that an impulsive loading could be applied as an initial velocity. Equation (1) is rearranged as:

$$\ddot{u} = \frac{F(t)}{m} - \frac{ku}{m} \tag{2}$$

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Nominal axial and flexural strengths of high-strength concrete columns

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Abstract. The ACI building code is allowing for higher strength reinforcement and concrete compressive strengths. The nominal strength of high-strength concrete columns is over predicted by the current ACI 318 rectangular stress block and is increasingly unconservative as higher strength materials are used. Calibration of a rectangular stress block to address this condition leads to increased computational complexity. A triangular stress block, derived from the general shape of the stress-strain curve for high-strength concrete, provides a superior solution. The nominal flexural and axial strengths of 150 high-strength concrete columns tests are calculated using the proposed stress distribution and compared with the predicted strength using various design codes and proposals of other researchers. The proposed triangular stress model provides similar level of accuracy and conservativeness and is easily incorporated into current codes.

Keywords: high-strength concrete; flexural and axial strengths; triangular stress block; interaction curve; column; beam

1. Introduction

The use of high-strength concrete (HSC) in buildings and transportation industry has increased in worldwide popularity. HSC has the advantages over normal-strength concrete (NSC) in strength and durability (Myers, 2008). HSC offers reduction in section size for columns when used in high-rise buildings. This gives a strong motivation to examine the current ACI 318 (2014) provisions for nominal strength calculations for HSC columns because they are developed based on NSC columns tests (Bae and Bayrak 2013, ACI 441.1R 2018). Several researchers conducted tests to study the behavior of HSC columns reported that the axial and flexural strengths of HSC columns could be over predicted by the current ACI 318 (2014) rectangular stress block expressions (Wahidi 1995, Ibrahim and MacGregor 1996, Lloyd and Rangan 1996). While the calculation of nominal strength is addressed, the lack of attention to the effects on the design strength lead to solutions where proposed modifications to strength reduction factors minimize the benefits of using high-strength concrete.

Khadiranaikar and Awati (2012) conducted experimental tests of plain concrete columns, reinforced concrete members such as eccentrically loaded columns, and beams in pure flexure. Based on the test results, stress-block parameters for wide range of concrete strength have been developed. Yang *et al*. (2013) proposed a generalized equivalent stress block model that works for both light and normal weight HSC. The coefficients used in the proposed stress block were formulated based on a nonlinear regression analysis through an extensive database of test data.

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Recently, Al-Kamal (2019), the author of this paper, proposed a triangular stress distribution to calculate the flexural strength of high-strength concrete beams. Extending this concept, the triangular stress distribution is suggested in this paper to calculate the nominal axial and flexural strengths of HSC columns.

The shape of the ascending part of the stress-strain curve for HSC remains linear up to a stress closer to peak stress than the curve for NSC. Hence a triangular stress distribution is better suited for HSC (Wahidi 1995). In this research, the triangular stress distribution is studied thoroughly and validated using large database consisting of 150 tested HSC columns with concrete strengths above 55 MPa (8,000 psi) and up to 130 MPa (18,800 psi). In addition, the results obtained by using the triangular stress block is compared with the results of recent studies on the equivalent rectangular stress block for HSC columns, i.e., ACI 318 (2014), CEB-FIP Model Code (2010), NZS 3101 (2006), CSA A23.3 (2004), EN 1992 (2004), Mertol *et al*. (2008), Bae and Bayrak (2003), Ozbakkaloglu and Saatcioglu (2004), Ibrahim and MacGregor (1997), Azizinamini *et al*. (1994). Based on the comparison results, a change to the stress block parameters of various codes is examined.

2. Research significance

The current ACI 318-14 provisions allow an equivalent rectangular stress block for calculation of member strength. The shape of the stress-strain curve is adjusted by the factor β_1 to account for the higher strength. Above 55 MPa (8,000 psi) there is no further change in this value, in part because higher strength tests were not available when the limit was established. While other design codes and individuals have proposed alternative stress block models for calculating strength of HSC members, there is no universal agreement

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Nominal flexural strength of high-strength concrete beams

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Abstract. The conventional ACI rectangular stress block is developed on the basis of normal-strength concrete column tests and it is still being used for the design of high-strength concrete members. Many research papers found in the literature indicate that the nominal strength of high-strength concrete members appears to be over-predicted by the ACI rectangular stress block. This is especially true for HSC columns. The general shape of the stress-strain curve of high-strength concrete becomes more likely as a triangle. A triangular stress block is, therefore, introduced in this paper. The proposed stress block is verified using a database which consists of 52 tested singly reinforced high-strength concrete beams having concrete strength above 55 MPa (8,000 psi). In addition, the proposed model is compared with models of various design codes and proposals of researchers found in the literature. The nominal flexural strengths computed using the proposed stress block are in a good agreement with the tested data as well as with that obtained from design codes models and proposals of researchers.

Keywords: beams; flexural strength; high-strength concrete; triangular stress block

1. Introduction

The use of high-strength concrete (HSC), f_c'>55 MPa (8,000 psi), has become the most widely used and most consumable building material in the world in recent years. HSC offers reduction in section size, span length, and weight of concrete structural elements when used in high-rise buildings and bridges. In most design codes, the traditional stress block that is developed for normal-strength concrete (NSC) is still being used for the design of HSC elements. This gives a strong motivation to examine the current ACI 318 (2014) provisions for nominal strength calculations for HSC members because they are developed based on NSC columns tests (Bae and Bayrak 2013, ACI 441.1R 2018). Several stress block alternatives to calculate the strength for high-strength concrete members have been proposed; i.e., CEB-FIP Model Code (2010), Mertol *et al*. (2008), NZS 3101 (2006), CSA A23.3 (2004), EN 1992 (2004), Bae and Bayrak (2003), Ozbakkaloglu and Saatcioglu (2004), Ibrahim and MacGregor (1997), Azizinamini *et al*. (1994).

Recently, some researchers have proposed stress block models based on a tested data of HSC beams and columns. Khadiranaikar and Awati (2012) have developed stress-block parameters for wide range of concrete strength. The experimental program includes testing of plain concrete columns, reinforced concrete members such as eccentrically loaded columns, and beams in pure flexure. A generalized equivalent stress block model that works for both light and normal weight HSC is proposed by Yang *et al*. (2013). The coefficients used in the proposed stress block were formulated based on a nonlinear regression analysis through an extensive database of test data.

Designing of HSC members requires a stress block model that best represents the concrete stress-strain characteristics. In this research, the stress block model is determined from the shape of the stress-strain curve of HSC. For the stress-strain relationship of HSC, as the concrete strength increases, the strain increases and reaches a peak value of 0.003. The shape of the ascending part of the relationship becomes more linear and steeper. Similarly, the slope of the descending branch becomes steeper. The general shape of the stress-strain relationship for HSC is similar to a triangle. Hence, a triangular stress distribution is better suited for HSC (Wahidi, 1995). Wahidi (1995) used the experimental results of nine HSC columns tests to compare the triangular stress block and other stress blocks with a proposed modified rectangular stress block. The triangular stress block was slightly more conservative than the modified rectangular stress block. Extending this concept, a triangular stress block is suggested in this paper to calculate the nominal flexural strength of HSC beams possessing a concrete strength above 55 MPa (8,000 psi). The results obtained by using the triangular stress block is compared with the results by using stress blocks of various codes and proposals of researchers. The comparison is done by using test results of 52 tested singly reinforced high-strength concrete beams having concrete strength above 55 MPa (8,000 psi).

2. Research significance

The current ACI 318-14 provisions use a rectangular stress block for all concrete strength. The shape of the stress-strain curve is adjusted by the factor β_1 to account for the higher strength. Above 55 MPa (8,000 psi) there is no further changes in this value. In addition, some design

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Estimating Elastic Buckling Load for an Axially Loaded Column Bolted to a Simply Supported Plate using Energy Method

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Abstract

This paper deals with the elastic stability of a column bolted at its mid-height to a simply supported square plate and subjected to a concentrated load, using energy method. A uniform homogeneous column is assumed to be pinned at both ends. From symmetry considerations, half of the column is modeled by making the plate acting as a torsion spring on the column at its mid-height. The column length and cross-section, plate dimensions and thickness, and the material properties for the column and the plate catch the interest of the author. The problem is solved by using energy method and ultimately, the elastic buckling load is found. The analytical elastic buckling load is compared with a numerical solution obtained from finite element method using SAP2000. The numerical results agree with the analytical solution. The finite element model is refined to catch the actual effect of the bolted plate on the elastic buckling load. It has been found that the elastic buckling load is increased due to the increase in the rotational stiffness provided from the plate.

Keywords: Column, Elastic Buckling, Axial Load, Energy Method, FEM.

1. Introduction

Buckling is an important consideration in structural design. In some cases, it governs the design before the strength criterion does especially when the member is slender and lightweight [1]. There are two general approaches in finding the elastic buckling load: a) the vector approach and (b) the energy approach [2,3].

Solutions of simple cases of buckling are given by Timoshenko and Gere [4]. Wang et al. [1] use the vector approach to give exact solutions for buckling of various structural members. In contrary, some exact solutions for columns with variable cross-section are provided in terms of Lomel functions by Elishakoff and Pelligrini [5,6].

Atay and Coskun [7] analyze Euler columns with a continuous elastic restraint using variational iteration method (VIM). However, Basbuk et al. [8] use the homotopy analysis method (HAM) to find the critical buckling load for Euler columns with elastic ends restraints. Also, the HAM method was used by Eryilmaz [9] to find the buckling load of Euler columns with a continuous elastic restraint.

Sampaio et al. [10] gives the solution for buckling behavior of inclined beam-column, using energy method. Similarly, the energy approach was used by Zdravkovic et al. [11] to study the buckling load of a three-segment stepped column subjected to an axial load. Rychlewska [12] provide numerical solutions for axially functionally graded Euler-Bernoulli beam for various boundary conditions. In this paper, the energy approach is used to find the elastic buckling load of a column with both ends pinned and bolted to a simply supported plate at its mid-height. The exact solution from this work is compared with the analytical solution provided by Wang et al. In addition, a finite element solution is performed in this paper to compare the results and to study the effect of the bolted plate on the buckling load.

2. Problem Definition

The case studied in this paper is shown in Figure (1-a). The column is bolted to a simply supported plate at its mid-height. The column length is ($2L$) and the plate is assumed square with a dimension (a). For the purpose of simplicity in calculations shown later, the plate dimension is assumed equal to ($1.2L$). The column and the plate materials are assumed to be the same. The modulus of elasticity of the material is (E). The column cross-section is shown in Figure (1-b). For the purpose of mathematical simplicity, the plate thickness is assumed to be the same as the column width (b).

The problem is simplified by taking advantage of symmetry and considering the plate effective in the x-direction only and acting as a torsion spring at the middle of the column. Therefore, the stiffness of the torsion spring is determined by shrinking the y-direction of the plate to a width equal to the column depth (h) and treats the plate as a simply supported beam in the x-direction. Based on the above assumption and since the thickness of the plate is taken as the column width (b), the plate and the column is now having the same moment of inertia (I). Note that buckling is governed by the weak-axis buckling; therefore, the moment of inertia is ($hb^3/12$). To get the

Progressive Collapse Assessment for Concrete Multi-Story Buildings – Review

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ABSTRACT

Progressive collapse is a catastrophic partial or complete failure of a structure that occurs when a primary structural component or more, such as a column or any vertical load-bearing component, is lost or damaged. This loss may be caused by a car accident, an airplane crash, a service system explosion, a missile used in a military operation, a bomb used in a crime or building destruction, a hurricane, a tornado, or an earthquake, as well as other natural disasters. Because of the numerous collapses that have happened since the turn of the century, the progressive collapse has become a popular research topic. Therefore, numerous international structural codes and standards have begun to pay attention to the resistance of facilities to progressive collapse and have formulated guidelines to limit this phenomenon.

Keywords: Progressive collapse, RC structures, Multi-story buildings, GSA guidelines, DoD guidelines, Review

1. Introduction

Progressive collapse is a series of failures triggered by the sudden loss of a single or a few sustaining parts. When a part of a structure fails, the structure must have a backup load-bearing path and move the weight that part was carrying to other parts. The release of stored internal energy as a consequence of the failure of a structural member result in an increase in the dynamic internal forces exerted by surrounding members.

Following the redistribution of the load through a structure, each structural component supports a separate set of loads, which includes the additional internal forces as well. A local failure can occur if any redistributed load surpasses the bearing capacity of adjacent uninjured components, resulting in another local collapse. Such sequential failures have the potential to propagate from one element to the next, eventually affecting the entire structure or a significant piece of the structure disproportionately. In most cases, the progressive collapse occurs in a couple of seconds or less. The concept of disproportionate collapse may be included in the definition of progressive collapse, which means the final failure does not correspond to the events that precipitated it in the first instance [1]. The United States General Services Administration's definition of progressive collapse (GSA)

[2] as " a situation where a local failure of a primary structural component leads to the collapse of adjoining members which, in turn, leads to additional collapse. Hence, the total damage is disproportionate to the original cause."

Nair [3] has also defined the "progressivity" of a collapse as a "the ratio of the total collapsed area or volume to the area or volume damaged or destroyed directly by the triggering event".

The American Society of Civil Engineer (ASCE) [4] defines progressive collapse as "The spread of an initial local failure from element to element resulting eventually in the collapse of an entire structure or a disproportionately large

ASSESSMENT OF A REINFORCED CONCRETE MULTI-STORY BUILDING AGAINST PROGRESSIVE COLLAPSE

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ABSTRACT

The progressive collapse of reinforced concrete structures occurs when one or more vertical load-bearing elements are eliminated due to man-made or natural hazards. The building's weight transfers to neighboring columns in the structure, causing the failure of adjacent members and, ultimately, the failure of a portion or the entire structure. In which the collapsing system continuously searches for alternate load paths in order to survive. This study examines progressive collapse in RC structures caused by instantaneous column removal. To investigate the collapse, typical columns are removed individually and analysis and design are continued. An eight-story reinforced concrete frame structure was considered for the study. The software ETABS V20 is used to perform a linear static analysis on a model of a regular reinforced concrete (RC) frame structure. Here, three types of column removal cases are examined: corner column removal, exterior column removal, and interior column removal. Then, the calculation of Demand Capacity Ratio (DCR) for both beams and columns are considered and compared to the GSA's acceptance criteria. The obtained DCR values indicate that columns are safe and strong enough to resist progressive collapse in all cases, whereas beams for corner column removal case are not safe for progressive collapse.

Keywords: Progressive collapse; Iraq seismic code; DCR values; RC structure; General Services Administration (GSA).

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1. INTRODUCTION

The term "progressive collapse" can be defined in a straightforward manner as the ultimate failure or proportionately large failure of a portion of a structure as a result of the spread of a local failure from element to element throughout the structure. This can be thought of as the ultimate failure or proportionately large failure of a portion of a structure. The beginning of a progressive collapse may be brought on by causes that are manmade, natural, intentional, or unintentional. A progressive collapse failure can be caused by a number of different types of disasters, including fires, explosions, earthquakes, or anything else that causes large amounts of stress and the failure of a structure's support elements. [1- 4] Progressive collapse is a complex dynamic process in which the collapsing system redistributes loads to prevent the loss of essential structural members. Beams, columns, and frame connections must therefore be designed to accommodate the possible redistribution of large loads. The collapse of the World Trade Center towers due to a terrorist attack, the bombing of the Murrah Federal Building in Oklahoma City, and the collapse of the Ronan Point building due to a gas explosion are notable examples of progressive collapse phenomena. Progressive collapse failures can be better prepared for and possibly avoided in the future as a result of studies such as the one presented

To the University of Wyoming:

The members of the Committee approve the dissertation of Mustafa Kamal Mahmood Al-Kamal presented on April 26, 2016.

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Presented in this work are the possible collapse mechanisms initiated by a precast flexural member dropping on a lower member. The ultimate goal of this research is to develop design guidelines and advice to prevent progressive collapse in such cases. The problem is complicated due to the dynamic analyses involved in the dropping, the impact, and the resulting vibration.

Analytical solutions and numerical solutions were developed to solve three possible collapse scenarios: perfectly plastic, inelastic, and elastic. These impact scenarios should provide a reasonable understanding of the dynamic behaviour for the member after impact. The analytical solution involves using Fourier series and the numerical solution involves a developed method of converting an initial velocity profile to an impulse load using SAP2000. The members are from typical parking garages.

The first solutions developed were for the perfectly plastic and elastic impact scenarios based on assumed initial velocity profiles. The resulting reactions from the impact were evaluated against ACI provisions. It has been found that a shear failure can be prevented by providing some shear reinforcement. However, the resulting bending moment is high and the member is prone to fail under flexure.

The second solutions developed were for perfectly plastic impact based on the pre-impact velocity profile of the top beam. The post-impact velocity profiles were not assumed. SAP2000 was used to calculate the post-impact velocity profiles for the upper and lower beams. The resulting shear and bending moment for the perfectly plastic scenario were extremely high and caused the member to fail. However, the resulting shear and bending moment for the case of inelastic impact did not cause failure.

Finally, a simulation of the impact using the finite element analysis COMSOL Multiphysics program was performed. When simulating impact, the COMSOL documents caution the user to check conservation of momentum and energy to ensure that the results are reasonable. Conservation of momentum has been checked and found not to be satisfied. Therefore, COMSOL Multiphysics is not recommended for this type of analysis.

DESIGN FOR PRESTRESSED CONCRETE FLEXURAL MEMBERS AGAINST PROGRESSIVE COLLAPSE

by

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Performance of Semi-Rigid Steel Connections under Monotonic and Cyclic Loadings: A Review

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Abstract: Since the turn of the century, numerous articles have been published with analysis of semi-rigid connections in steel structures. This paper offers a comprehensive survey of major recently published research work dealing with the behaviour of semi-rigid beam-column connections under various configurations of fasteners and welding lines under both monotonic and cyclic loads. The review has two main respects: the first is the moment versus curvature behaviours of semi-rigid steel connections, while the second involves finite element analysis of such connections under monotonic and cyclic loads. The main conclusions concerning the dynamic behaviours of semi-rigid steel connections emerge with regard to the vital influence of beam-column connections on the global seismic performance of steel frame structures. Developing semi-rigidity should thus be considered an effective way to achieve the required performance.

1. Introduction

An uncountable number of structures are now made of steel expressing the enormous possibilities that this material offers. Some of justifications for the choice of steel to build a structure or its elements, include its high strength to volume ratio, its reliability, and its ability to adapt to almost any architectural form, offering a wide range of possible applications, these are supported further by the availability of a large number of standardised parts.

Owing to their high ductility and energy dissipation abilities, semi-rigid steel connections have been favoured in recent moment-resisting steel frames exposed to gravitational monotonic loading alongside lateral or vertical cyclic excitations. Adequate design of members' end-to-end connections is thus required to allow these steel structures to perform well in sustaining such loads. Yet the conventional analysis of steel framed structures supposes one of the two well-known idealised extremities: the rigid joint or pinned joint hypotheses. However, currently prevalent steel frame connections are most likely to display semi-rigid responses, contributing significantly to overall member stress distribution. In general, steel structures can be formed from any combinations of simple or composite pieces joined together in a design that adequately resists forces and moments together.

DESIGN OF A STEEL SPECIAL MOMENT FRAME SUSCEPTIBLE TO HIGH SEISMIC RISK

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Abstract

This paper deals with the design of a 2-D steel special moment frame vulnerable to high seismic risk using the ASCE 7-10 Code equivalent lateral force method (ELF). The equivalent lateral force method uses an approximate procedure to find the natural period of the system to get the total base shear before the design. In this paper, the actual natural period is computed after designing a 2-D steel special moment frame and the base shear is recalculated accordingly. For this purpose, the base shear from ELF is first used to design the 2-D frame according to the drift limitations as per ASCE 7-10 Code. The direct analysis method (DAM) of AISC 360 is then used to check the strength of the steel members. The new natural period of the 2-D frame is calculated using SAP2000 finite element program. The SAP2000 natural period is used to find the new base shear. It has been found that the SAP2000 natural period increases the total base shear by 62%. Consequently, a redesign for the steel special moment frame members should be considered to account for the difference in the base shear.

Keywords: Steel special moment frame; ELF; base shear; DAM; natural period; SAP2000.

1. INTRODUCTION

Seismic design requirements are given in chapter 12 of the ASCE7-10 Code [1]. For computing the base shear of a building using the equivalent lateral force method, the code gives an alternative way to compute the natural period of the system before the design. However, the validity of this procedure needs to be checked for structures prone to high seismic risks. Therefore, in this paper the actual natural period is found to get the total base shear for a 2-D steel special moment frame (SMF) in high seismic zones.

Steel special moment frames are often used as a part of the seismic-force resisting systems in buildings designed to resist earthquakes with substantial inelastic energy dissipation [2]. Design requirements for steel special moment frames can be found in a series of U.S. building codes. ASCE 7-10 sets the basic load requirements for special moment frames with associated lateral drift limits. AISC 360 (see Reference [3]) is the main AISC specification that provides design and detailing requirements for all steel buildings. In addition, AISC 341-05 (see Reference [4]) gives detailed design requirements related to materials, framing members, connections, and construction quality assurance and quality control.

It is worth mentioning that the ASCE 7-10 permits to use three types of analyses to determine member design forces and design drifts namely: equivalent lateral force, modal response spectrum, and seismic response history analysis. Equivalent lateral force analysis is the simplest procedure; however, it can lead to a conservative design [1].

According to the authors in Reference [2], "In many cases, exact analysis will determine a substantially longer building period than that determined by the approximate methods. As a result, substantial reduction in base shear forces often can be obtained by calculating building periods using the more exact". Therefore, the purpose of this work is to calculate the natural period for a steel special moment frame after the design and check whether this period increases or decreases the base shear.

2. PROBLEM DEFINITION

The SMF is a part of a six story office building located in San Jose, CA, USA. Three special moment frames (SMFs) are considered for the east-west direction of the building. Braced frames will be used in the north-south direction. For the purpose of this research, only the east-west direction is considered in the design. The middle SMF is designed here in this research. The building geometry is shown in Figure -1-. The bay width in the east-west direction is 30 ft (9.15 m) while it is 40 ft (12.2 m) for the north-south direction. A typical 13 ft-6 in. (4.15 m) floor-to-floor heights is considered. The first story height is 17 ft-0 in. (5.2 m).

The occupancy type is planned to be offices with a design load of 50 psf (2.4 kN/m^2) plus a 20 psf (0.96 kN/m^2) allowance for partition walls. The design live load is 80 psf (3.83 kN/m^2) to account for corridors. Live load reductions will be considered. The roof has a mechanical penthouse with an equipment load of 120 psf (5.75 kN/m^2) and an additional structural self-weight equivalent to 40 psf (1.92 kN/m^2). The location is over the centerline on the north edge. The size is assumed to be 20 ft (6.1 m) east-west x 10 ft (3.05 m) north-south.

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Numerical Analysis of Shear Strength Behavior of self-compact reinforced concrete Two-way Bubble Deck Slab with Shear Reinforcement

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Abstract. Bubble Deck is a new construction technology uses hollow plastic balls to eliminate the concrete in the middle part of the solid slab which has a little effect on the performance of the structure. So, this part significantly decreases the self-weight of the structure. Usually, the most critical point in the design of the bubbled slab is the design of a slab-column connection due to the concentration of loads and moments. This paper presents a numerical analysis by ABAQUS/2018 program through using the damage plasticity model to simulate the influence of the cavities due to using the plastic balls on the punching behavior and the effect of strengthening the punching zone by using different shear reinforcement systems on the maximum punching load and deformation capacity. Three slab specimens from the numerical analysis model have been simulated against the experimental results. The calculation of error in the model lies between 4% and 6%. Parametric of study have also been accomplished to realize the effect of the changes in shear reinforcement ratio with bubble slab. It has found that the ultimate strength and deformation capacity have increased when shear reinforcement ratio.

1. Introduction

The slab is one of the most important structural members in creating a space in addition to its largest consumption of the concrete [1]. The first limitation when design a reinforced concrete slab is the span between columns while designing large spans between the columns leads to use of very thick slabs and/ or support beams and increase the dead weight of the structure [2].

Many tries have been prepared for creating biaxial hollow slabs to reduce the weight. Many tries used a fewer weighty material like expanded polystyrene which is laid between the top and bottom of reinforcement, such as waffle slabs/ grid ones. Only waffle slabs have a certain usage in the market, however its use is very limited because of less resistances to fire, local punching and even shear[3]. Bubbled reinforced concrete slab system has been recently introduced in Europe. It was invented by the Danish engineer, Jorgen Breuning in the 1990's [4]. This structural system might optimize the size of vertical members such as columns and walls by reducing the weight of slabs [5].

In this paper, a theoretical analysis to predict the (ultimate load, deflection and crack pattern) of both solid and bubble slab specimens were performed, using a nonlinear finite element (ABAQUS/2018) program based on three reinforced concrete slab tested by Harba and Hammed (2018) [6].

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Behavior of Self Compacting Reinforced Concrete One Way Bubble Deck Slab

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Abstract

Reinforced concrete slab with plastic voids (Bubbled Deck system) is a new type of slabs which has two-dimensional arrangement of voids within the slab that is developed to decrease the slab self-weight while maintaining approximately the same load carrying capacity as compared with the solid slabs. Plastic voided slabs have the ability to reduce concrete amount by about 30 percent and this reduction is so important in terms of cost saving and enhancement the structural performance. In this research paper investigation is carried out to study the shear strength behavior of one-way bubble deck slab using self-compacting reinforced concrete. The experimental program consists of testing thirteen one-way slabs with dimensions of (1700 length, 700 width and 150 thick) mm. One of the tested slabs is a solid slab (without balls) is used as a reference, the remaining twelve bubbled slabs with ball diameter (73, 60) mm are divided into five groups according to the parameters of the experimental work, the parameters of the experimental work include: type of slab (bubble and solid slabs), ball diameter (73, 60) mm, shear reinforcement and spacing between balls. The experimental results showed that the bubbled slabs without shear reinforcement have a decrease in the ultimate load as compared to solid slab by about 3.7% to 14.3% and an increase in the deflection at ultimate load by about 10% to 22%, at the same time the first crack load decreases by about 15.3% to 42.4% as compared to solid slab due to decreases of moment of inertia of bubble slab compared to solid slab. Also, the results showed that the bubbled slabs withe shear reinforcement (multi-leg) have an increase in the ultimate load as compared to solid slab by about 35.4% to 57.3% and an increase in the deflection at ultimate load by about 1% to 15%, at the same time the first crack load decreases by about 2.8% to 27.4% as compared to solid slab.

Keywords: Self Compacting, Reinforced Concrete, Shear Behavior, Deck Slab.

1. Introduction

Slab is very important structural member to make a space in the building, it is the most member that consuming concrete. In addition, when the span of a building increases the deflection of slabs increases also. Therefore, the slab thickness is increases. The increase of slab thickness makes slab heavier and it leads to increase column and foundation size. Thus, it makes buildings consume more materials such as concrete and steel [1]. In the past various attempts have been developed to reduce the weight of concrete slab with maintaining the slab flexural strength as it was reducing the slab weight would reduce deflection and makes larger span lengths achievable. The waffle, hollow core and beam-block slab systems were and are still used to reduce the slab self-weight [2]. Bubbled reinforced concrete slab system, also known as voided slab system, has been recently introduced in Europe. It was invented by the Danish engineer, Jorgen Breuning in 1990[3]. This type of slab contains hollow plastic bubbles cast into the concrete to form a mesh of void shapes within the slab [3]. These bubbles will decrease the dead weight up to (35%) compared to a solid slab of an

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Flexural behavior of self-compacting damaged reinforced concrete box beams strengthening with CFRP

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Abstract. Fibre Reinforced Polymer (FRP) materials appear to offer an acceptable solution for the upgrading and repair of concrete structures based on the advantages associated with these compounds. This paper presents an experimental analysis of strengthening in damaged R.C. box beams based on gluing CFRP sheets to the members. The main objective was to study the flexural behaviours of damaged R.C. box beams strengthened with CFRP sheets, and ten simply supported box beam specimens were thus tested under a monotonic two-line load. Variables investigated included the configuration of CFRP sheets used and the damage ratios (45%, 60%, and 75%). The tested box beams were designed according to ACI 318M-14 to ensure flexural failure. The study showed that adding composite fibre sheets used as External Bonding (EB) technology can offer a convenient and effective strengthening method for damaged concrete structures. The results further showed that side strengthening (extending the sheet under the beam with both sides facing each other) provided an effective tool for increasing the ultimate load capacity by over 28% on average as compared to other methods, while increasing the deflection ratio by over 40%. The behaviour of each box beam was examined with respect to the first crack load, ultimate load, crack pattern, and load-deflection, and carbon fabrics were shown play a major role in the repair of box beams.

Keywords: CFRP, Strengthening, Damage, Box beam, Self-compacting, Flexural behaviour.

1. Introduction

The rapid development of concrete and construction techniques have led to new types of concrete, such as self-compacting concrete (SCC), emerging. This technique allows self-flowing concrete without the need for any mechanical vibration; the quality of SCC thus depends on liquidity without segregation, and this type of concrete can be used in places where it is difficult or impossible to use mechanical pressure, such as for underwater formwork, site stack foundations, columns, machine bases, or walls with crowded reinforcement (**Khayat et al. [1]**). SCC mixtures contain similar components to those

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Effect of Strengthening With Two Systems on The Behavior of Cellular Beams With Different Web-opening Shapes

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Abstract— The current research consists of experimental and numerical study to investigate the behavior of cellular steel beams with different opening shapes and study the effect of the strengthening methods using square steel bar around the openings and welding around the openings. IPE 250 hot-rolled I-section steel beam used to produce Nine prototypes beams; divided into three groups of openings shapes (Cellular, Castellated, Elliptical), each group including 3 prototypes beams; one specimens will be used as reference and one study the effect of strengthening by welding around the openings , the last one strength by square steel bar around the openings. The openings size for circular openings (180) mm, while the openings height for castellated shape openings was (170) mm and for the elliptical openings shape was (270) mm as openings width. The expansion in depth ratio of (1.2), span length (1760) mm with five openings in each prototype beams. The first technique of strengthening by welding around the openings improved the load capacity by 25.6%,26.5% and 7.7% for castellated, cellular and elliptical shape in comparison with the first prototype (without strengthening) beam from each group. In the other hand, the second technique of strengthening by square steel bar around the openings improve the load carrying capacity by 48.1%,64.5% and 61.2% for castellated, cellular and elliptical in compare with the first prototype (without strengthening) beam from each group.

Keywords-component; Cellular Steel Beams (CL), Castellated Steel Beams (CB), Elliptical Steel Beams (EB), Parent Beam, Square Steel Bar, Ultimate load capacity (ULC), Web post-buckling and Vierendeel mechanism.

I. Introduction

Nowadays structural buildings are widely used due to its various properties such as the better satisfaction with flexible architectural, high-quality strength, durability, high ductility, economy, lower weight, decrease the overall cost and save environment due to steel uniform shapes manufacture. The cellular steel beam is one of the most profitable solutions in order to improve the steel members to produce a lightweight beam with high strength and low-cost. Cellular beams fabrication process starts with a double cutting in a regular pattern with semicircular path along the web panel of parent beams then, re-joining and welding these parts to produce beam with a different opening shape. so deeper beam section can be achieved to increase their strength. The final shape after these cutting and re-welding processes, total beam depth increases in the other hand, increase in the capacity of the original section. The presence of the openings may cause different cases of failure such as Vierendeel mechanism, welded joint rupture and the web post-buckling that result by shear forces additional to failure cases which occurred in the solid web of the steel beams such as the flexural

A Review-Behavior of Reinforced Concrete Exterior Beam-Column Connections under Cyclic Loading

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Abstract. In many seismically active regions worldwide, massive reinforced concrete (RC) structures built before the 1970s existed. These older RC buildings, in countries having seismic history, were designed for gravity loads only. Anyway, the beam-column connections influence the structures where the functions of connection shortage by transport the forces like shear, moment, and torsion through the beam to the column. Also, it could behave in a ductile manner to help the structure resist the seismic, as simulate the seismic loading by high and low cyclic loading. Due to the failure of external joints more than the internal beam-column joints, this review focuses on the behavior of exterior beam-column joints under cyclic loading, consequently simulated the behavior under an earthquake and the reinforcement detailed.

Keywords: RC beam-column joint; cyclic loading; ductility; shear strength; hysteretic response.

Introduction

The high sensitivity of earthquake for beam-column connections in constructions established before 1980 results according to the fact that since the first provisions of seismic design for beam-column connections were provided in the 1960s, these provisions were not formally used within the limits of the significant design specifications for ductile frames in the late 1970s [1]. The edition of the Uniform Building Code (UBC) in1976 was the first code that involved the demands of seismic design like the demands of transverse reinforcement in the joint region [2]. Thereby, most buildings, if not all, constructed prior 1980s have suffered some kind of insufficient seismic design. Then, they are highly exposed to the danger of seismic failure through severe seismic. This matter is dangerous in the developing countries located in seismicity areas. Particularly when their ductile design code did not involve design requirements into the significant design until the late 1980s and sometimes 1990s [3]. Mosier [4] surveyed a comprehensive area of pre-1979 constructions in the US. This survey described connections like the absence of joint shear reinforcement, short lap splices, and strong beam-weak column design.

The behavior of Joints Subjected to Cyclic Loading

Beams and columns exposed to flexure and shear loading in a 2D structural frame controlled to earthquake loading. The forces could be predicted to develop in a 2D frame subjected to earthquake and gravity loading (as shown in Figure1a). It is supposed that the beams will advance flexural strength at the joint in modern frames subjected to extreme and moderate seismic loading, while columns will create moments that exceed the yield moment. Shear failure of columns and beams or flexural yield of columns can restrict beams from acquiring flexural strength in older frames: the predicted and resultant loads at the circumference of the joint area (see Figure 1b). The distribution of loading will lead to severely loaded inside the joint and the moment reversal in the beams and columns that result in high shear forces. Furthermore, high bond stresses inside the joint could be essential for stress reversals in the beam and, to some extent column, longitudinal steel (see Figure 2). A single concrete compression strut transmits joint shear in the first mechanism, pointed to as the strut mechanism (shown in Figure2a). It is supposed that the transverse steel in the joint increases the strut's deformation capacity. The second mechanism assumes a uniform bond stress distribution along beam and column reinforcements. In the truss mechanism (shown in Figure2b) a series of steel tension ties and concrete compressive struts transform the shear stress inside the joint. By estimating the

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Numerical Analysis of Reinforced Concrete Exterior Beam-Column Joints Under Limited Cycles of Repeated Loading

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ABSTRACT

The beam-column joints play an important role in the structures where the functions of connection shortage by transport the forces like shear, moment, and torsion from the beam to the column. So, this study represents an attempt to investigate the performance and the effect of limited cycles of repeated load on the strength of the exterior beam-column joint core. Therefore, 34 specimens have been investigated by using a numerical analysis that used the finite element method. To simulate these specimens, the concrete damage plasticity model was used to define the concrete materials and the nonlinear isotropic/kinematic (combined) hardening model for steel material definition. These models are involved in the ABAQUS software package, version 2020. This study involves key parametric studies on beam-column joints, which are summarized as changing the ratio of shear reinforcement of the joint core in addition to using two types of shear reinforcement. This study also includes the effect of flexural reinforcement of the beam as well as the beam's shear reinforcement effect on the strength of the beam-column joint. To calibrate the software to simulate a realistic result, three specimens have been used, which have been tested in previous studies. It has been found that this numerical model accurately predicts the experimental response under limited cycles of repeated loading. The ultimate load from modelling was compared with the experiment once, having a difference of less than 10% and the ultimate displacement having a difference of less than 11%. It has been found that increasing the ratio of the joint's shear reinforcement to double has no significant effect on the ultimate load. Otherwise, decreasing it to half leads to a decrease in the ultimate load compared with a specimen that is designed according to ASCE352-02R. This study has studied the effectiveness of increasing the shear reinforcement by adding an x-shape reinforcement. Also, the flexural reinforcement of the beam has found it has increased the ultimate load capacity by 48% Where the ratio of flexural reinforcement increased to 1.8%, the load bearing capacity was enhanced.

1. Introduction

The behavior of beam-column connections has long been identified as a critical part that usually plays a significant role in the overall behavior of Reinforced Concrete framed structures subjected to seismic loading. Even when considered separately, complicated interacting variables like shear, bond, confinement, and fatigue have an impact on how RC connections respond [1].

During earthquake the structure expose to repetitive application of a load (fluctuating stresses, forces, strains, forces, etc.) on a structural element degrades the material and eventually results in fatigue, these loads could be simulated as cycles loading. Cycles loading

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SHEAR AND FLEXURAL BEHAVIOR OF LIGHT-WEIGHT CONCRETE BEAMS CONTAINING HYBRID FIBERS

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Abstract

Due to the low density of lightweight concrete, work has been done in this research to develop it by adding fibers of more than one type to improve its properties. Basic tests were conducted to determine the properties of concrete before and after the addition of fibers. The variables of the models were beams in two groups (shear and flexural). The variables of these two groups included the type of fibers (steel and polypropylene) and the size of the added fibers 0 %, 0.05 %, 0.1 % for polypropylene fibers 0 %, 0.75 %, 1 % for steel fibers. This study presented an examination of 18 beam specimens and discussed the results, which included mechanical properties (air dry density, slump test, compressive strength, modulus of elasticity, flexural strength, and splitting tensile strength). The results showed that the addition of fibers had an effective effect on the compressive strength, and this led to an increase in the resistance to shear forces and flexural forces, as the highest load capacity was shown by adding polypropylene fibers at a rate of 0.1 % in both groups, and the fibers played an important role in reducing the width of cracks and controlling their spread due to modulus of elasticity of the fiber.

Keywords:

Reinforced concrete beams;
Flexural behavior;
Shear behavior;
Lightweight aggregate;
Hybrid fibers.

1 Introduction

A rise in the population necessitates a rise in the production of building materials, particularly concrete. Lightweight aggregate with high performance and strength has been used to replace the softer part of ordinary concrete, or lightweight foam has been introduced to reduce the structure's dead load and provide better thermal and acoustic insulation than normal concrete. These developments have been made because concrete is such an important part of construction [1].

Lightweight concrete's low density, often between 1350 and 1900 kg/m^3, and compressive strength, typically at least 17 MPa, is its most distinctive characteristics ACI 213R, 2003, [2]. Density reduction results in smaller element sizes, giving the designer more leeway in customizing the design and bringing down the cost [3].

Widodo et al. 2012 [4] the researcher experimentally verified the addition of polypropylene fibers and steel fibers in a hybrid manner to some of the properties of lightweight aggregate concrete, where the density, compressive strength, modulus of elasticity, and tensile strength of cleavage were examined. With high improvements in mechanical properties, the compressive strength of lightweight concrete can be raised proportionally up to 22.44 %, the modulus of elasticity can be increased per the addition of hybrid fiber up to 24.71 % and the modulus of rupture of lightweight concrete samples can be improved proportionally up to 187.46 %.

Bindiganavile et al. 2015 [5] studied the shear behavior of lightweight concrete members containing steel fibers at a rate of 1% without using stirrups. The ratio of depth to shear was 3 for each beam. The results showed an increase in compressive Strength and tensile Strength, which led to an increase in the bearing strength of the element for the loads applied during the test.

Khalil et al. 2015 [6] this research aims, through experimental work, to study some of the properties of high-strength (lightweight) porcelain aggregates reinforced with monofilament and hybrid

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A Review- strengthening of reinforced concrete beams with textile-reinforced concrete

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Abstract. Numerous problems that can occur during regular building use may necessitate the need for reinforced concrete RC members to be strengthened. An increase in live loads or structural damage is two examples. Various techniques can be used to increase load-carrying capability. Concrete reinforcement with textile-reinforced materials (TRC) is a more recent option. For almost all active forces, this strengthening procedure is appropriate. For bending, shear, torsion, or axial forces, strengthening is an option. Due to their many appealing qualities, characteristics as their high specific strength (i.e., strength to weight ratio), resistance to corrosion, the convenience of use, speedy installation, and little variation in cross-section, (TRC) have become more and more popular among structural engineers for strengthening and retrofitting projects The conclusions made from the experimental results of members made of reinforced concrete strengthened in shear suggest that textile-mortar composites greatly increase shear resistance, with the gain increasing with the number of layers. This review focuses on strengthening RC beams in flexure by textile-reinforced concrete. According to the authors, TRC jacketing is a very promising technique for increasing reinforced concrete components' confinement, in addition to their shear and bending capability, which is necessary for seismic retrofitting and strengthening.

1. Introduction

The need for structural retrofitting of older Reinforced Concrete (RC) structures is continually increasing due to problems like aging and insufficient concrete production, environmental degradation, neglect, and the requirement for more rigorous design standards [1], Additionally, the repair is required in the event of a visible crack to continue transporting loads and transferring them to the ground [2]. The mechanical and durability features can be improved by adding different types of fibers in the right amounts. [3]. Due to their advantageous characteristics fiber-reinforced Polymers (FRP) compositions are the most often utilized strengthening options for Reinforced Concrete elements due to factors including their extraordinarily high strength-to-width ratio, rapidity of application, and corrosion resistance [4]. where these fibers reinforced polymers (FRP) aimed at intended to improve shear strength in zones with insufficient transverse reinforcement [13]. Despite all of these benefits, there are some drawbacks to the FRP strengthening process, most of which are connected to the application of epoxy resins. These disadvantages include high costs, subpar performance in hot environments, applying to moist surfaces is not possible, the FRP separating from the concrete base, etc. To solve the previously mentioned problems, one alternative to the organic binder (usually epoxy) is an inorganic adhesive (cement mortar). As a result, the scientists have created Textile Reinforced Concrete (TRC), a unique material that blends cementitious matrix and

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STRENGTHENING OF REINFORCED CONCRETE BEAMS WITH TEXTILE-REINFORCED CONCRETE

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Abstract

Numerous problems that can occur during regular building use may necessitate the need for reinforced concrete RC members to be strengthened. An increase in live loads or structural damage is two examples. Various techniques can be used to increase load-carrying capability. Concrete reinforcement with textile-carbon fiber (TCF) is a more recent option. For almost all active forces, this strengthening procedure is appropriate. For bending, shear, torsion, or axial forces, strengthening is an option. The experimental work for this study examined the impact of textile carbon mesh in reinforced concrete with various numbers of layers and sikadure-330 as the bonding material with different damage ratio (0%, 45%, 55% and 70%). As well as the flexural behavior of reinforced concrete beams strengthened with TCF, by casting and testing 13 beams under the monotonic load, one of them represented the control beam, they designed according to ACI 318-14 to ensure flexural failure. From the results obtained in this study it was shown that the flexural capacity of all strengthened beams increased as a consequence of TCF strengthening. Therefore, TCF jacketing is a very promising technique for increasing reinforced concrete flexural capability, which is necessary for retrofitting and strengthening.

Keywords:

Reinforced concrete beams;
Strengthening of R.C. beams;
Flexural behavior;
Textile-carbon fiber TCF;
Sikadure-330 bond material.

1 Introduction

Depending on the demand for strengthening, many strengthening methods are available on the market. A structural member can be strengthened with textile-carbon fiber by utilizing various reinforcement materials, in various amounts, and with various matrix materials. Textile-reinforced concrete is a material with increased mechanical properties that can allow the production of lighter structural elements [1]. Textile-Reinforced Concrete (TRC) can produce novel structural techniques in civil engineering fields [2]. A cost-effective option depends on the materials' availability on the market and the simplicity of the strengthening technique's application. Additionally, the repair is required in the event of a visible crack to continue transporting loads and transferring them to the ground [3]. The mechanical and durability features can be improved by adding different types of fibers in the right amounts [4].

Textile-carbon fiber (TCF) is a relatively innovative and complex composite material. Carbon fiber reinforcement and a bonding matrix make up the majority of it, while other fiber materials, such as Alkali-resistant (AR) glass fiber textiles, may also be used as strengthening [5].

TCF is characterized by (non-corrosive textile concrete fiber reinforcing, TCF constructions are lightweight, creating thin structures, it uses less material than traditional concrete structures, TCF results in a significant reduction in both material use and expense and cracking behavior with very small crack widths) [6].

The objectives of the research:

• Examining experimentally the viability of enhancing the service flexural performance and the ultimate capacity of reinforced concrete beams using TCF systems.

• Comparing the effectiveness of reinforced concrete beams strengthened by TCF with non-strengthened beams.

• Investigate the effectiveness of repairing damaged reinforced concrete with TCF.

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Behavior of One Way Foamed Concrete Slabs Using Different Types of Reinforcement

Haneen E. A. AL-Saidi[1], Ibrahim S. I. Harba[2]

Abstract

This research included a study of the behavior of lightweight foam concrete and a study of the effect of adding lightweight aggregate (LECA) to some groups. The program also included an examination of the behavior of foam concrete for one-way slabs with and without adding LECA aggregate in different proportions and with two types of reinforcement (normal and GFRP).

This study aimed to Investigate the behavior of lightweight one-way foam concrete slabs reinforced with two types of reinforcement (Normal reinforcement and GFRP), performing an experimental investigation to produce lightweight foamed concrete and Investigate the effect of additional of LECA to improve the mechanical properties of LWFC.

Light-weight foam concrete was produced with compressive strength 35.2MPa and dry density 1830Kg/m3, and then adding LECA content to the fresh mixture (LWFC).The results were compared between the two mixtures (containing LECA aggregates and without LECA aggregates) to determine the effect of LECA on improving the mechanical properties of LWFC ,where was compressive strength 42MPa and dry density 1885 Kg/m3 at 28 days ,and note that the mechanical properties of LWFC with LECA achieved higher results for mechanical properties such as compressive strength, splitting strength, modulus of elasticity, and modulus of rupture increased by 16.19%,11.8%, 27.93%, and 29.7%, respectively ,and the flowability of the lightweight foamed concrete reduced by 25% compared to lightweight foam concrete without LECA. the results showed that ultimate load increases for the slabs that has the highest reinforcement ratio (ρmax.) and gradually decreases for the slabs that has an average (ρavg.) and minimum (ρmin.) reinforcement ratio, respectively. On the other hand, as the ratio of reinforcement increases, deflection decreases, and vice versa

also, presence of LECA also increased the ultimate load rate more than the slabs that did not contain LECA.

Keywords: *Reinforced concrete slab; Flexural behavior; Lightweight foamed concrete.*

1 Introduction

The foam concrete is the air-void based concrete in the mortar assisted by agent to support sustainability. In addition to its lightweight property, the foam concrete is considered the best concrete type to fire resistance (Ramamurthy et al., 2009). However, the low compressive strength and higher fluidity were observed. The production of lightweight concrete is affected by the material composition and the methods of

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Geotechnical properties of clayey soil improved by sewage sludge ash

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Geotechnical properties of gypseous soil contaminated with crude oil

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Abstract. Gypseous soils are extensively distributed and especially in Iraq where area of hot climate is extant. These soils may be contaminated by crude oil due to the multiple oil wells, the oil exploitation, damaged storage tanks and pipelines, natural seepage and the crude oil spills during the war. Therefore, this study presents the geotechnical properties of gypseous soils contaminated with crude oil and the possibility of using the crude oil as an improvement material. The soil used in this study has been brought from Haditha city at Al-Anbar Governorate in Iraq with (34%) average gypsum content and classified as silty sand (SM) according to unified soil classification system (USCS).
A series of laboratory tests included physical, chemical, shear strength, collapsibility test conducted on both clean and contaminated soil samples with crude oil. Compacted soil samples are prepared and three percentages of crude oil (3%, 6%, and 9%) are added to the gypseous soil samples and then tested. The results showed that the crude oil increases the liquid limit of the gypseous soils and changes the soil from non- plastic to plastic material, the crude oil also increased the maximum dry density (MDD) and decreases the optimum moisture content (OMC). The results also showed that using crude oil denotes good solution and appropriate alternate to improve the properties of gypseous soils by elimination the melting of gypsum when it comes in touch with water in addition to increase in stability and strength properties of gypseous soil by decreasing the collapse potential and increasing CBR values.

Keywords
Crude oil, Gypseous soil, mechanical properties, collapsibility, shear strength.

1. Introduction

The term "Gypseous soil" is used to identify “soils that contain gypsum". Gypseous soils are very hard when they dry due to the cementation and strengthening of soil particles with gypsum, but large losses in strength and sudden increase in compressibility occur when the soils are exposed to moisture or leaching because of the melting of gypsum between soil particles **(Nashat, 1990)**. Most types of gypseous soils are found in arid and semi-arid areas, and are considered as "problematic soils", and they exhibit unexpected behavior that can cause significant problems with civil works **(Petrukhin & Boldyrev, 1978)**. When collapsible soil under loading are saturated, sudden settlement and rapid failure will be held which leads to damages in the structures built on these soil. Gypseous soils are extensively distributed specially in Iraq when gypsum covers about 12% of its total area **(FAO 1990**, **Ismail 1994)** indicated that gypseous soils covers 31.7 of the whole area of Iraq. The estimated amount of gypsum can reach (80%) in the northern and mid parts of the Tigris and Euphrates beds, while the

Performance of High-Rise RC Structure with Soft storey subjected to the seismic load

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Abstract-

Recent earthquakes caused severe structural damage to a number of new structures, which highlights how crucial it is to prevent sudden changes in lateral stiffness and strength. Numerous existing reinforced concrete buildings are vulnerable to being damaged or even collapsing after a strong earthquake, as evidenced by recent earthquakes that occurred. While soft storey damage and collapse are most frequently seen in buildings, they may also occur in other kinds of structures. These kinds of structures will be vastly affected by earthquake or wind forces, where the stiffness of that particular floor is less. The stability of the earth is always disturbed due to internal forces and as a result of such disturbance. In the current study, four models of thirty-storey reinforced concrete buildings with a soft storey at the ground, tenth, twentieth and thirtieth level for seismic zone II to seismic zone V were studied by the response spectrum method to assess the performance of the soft storey buildings. The parameter considered for the analysis is displacement, storey drift and storey stiffness. ETABS18 was used in the current analysis. The results show that the models analysed with seismic zone II perform further than the models analysed with other seismic zones in terms of displacement. the location of soft storey floor plays a significant role in the response of the buildings. the model with the soft storey on the thirtieth floor shows a further response in terms of displacement, stiffness and storey drift. from the findings, it is recommended to provide sufficient lateral strength in the soft storey by the provision of stiffer columns to increase the stiffness of that particular storey.

Keywords – Soft storey buildings, dynamic analysis, Response spectrum method, seismic load

1. Introduction

A soft storey known as a weak storey is defined as a storey in a building that has substantially less resistance or stiffness or inadequate ductility (energy absorption capacity) to resist earthquake-induced building stresses [1]. Soft storey buildings are characterized by having a storey that has a lot of open space (Figure. 1) [2]. Parking garages, for example, are often soft stories, as are large retail spaces or floors with a lot of windows.

Curriculum Vitae

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Publications:

No.	Title	Journal	Year of publication
1	Experimental and Numerical Investigation of High Strength Reinforced Concrete Deep Beams with Web Openings under Repeated Loading	Al-Nahrain Journal for Engineering Sciences (NJES) 20 (2), 311-325	2017
2	Finite Element Analysis of RC Tapered Beams under Cyclic Loading	Al-Nahrain Journal for Engineering Sciences (NJES) 20 (2), 378-396	2017
3	Numerical Analysis of Two-Way Reinforced Concrete Slab with a Sawn up Opening strengthened by CFRP	GRAĐEVINAR 69 (7), 573-580	2017
4	Influence of Embedded Reinforcement in a High Strength Concrete on Ultrasonic Pulse Velocity and Core Test	Research Journal of Applied Sciences, Engineering and Technology 14 (1), 29-34	2017
5	Numerical Analysis of Two-Way RC Slab with a Sawn Up Opening Strengthened by CFRP	International Journal of Civil Engineering and Technology (IJCIET) 9 (8), 1159-1167	2018
6	Numerical Analysis of Reinforced Concrete Beam Strengthened by CFRP Subjected to Monotonic Loading	International Journal of Civil Engineering and Technology (IJCIET) 9 (10), 894-904	2018
7	Numerical Analysis of Reinforced Concrete Corbel Strengthening by CFRP Under Monotonic Loading	International Journal of Civil Engineering and Technology (IJCIET) 9 (10), 1554-1565	2018
8	Flexural behavior of self-compacting damaged reinforced concrete box beams strengthening with CFRP	IOP Conference Series: Materials Science and Engineering 1067 (1), 012051	2021
9	Numerical analysis of RC columns under cyclic uniaxial and biaxial lateral load	Građevinar 73 (10), 979-994	2021
10	Numerical analysis of high-strength reinforcing steel with conventional strength in reinforced concrete beams under monotonic loading	Open Engineering 12 (1), 817-833	2022
11	Numerical analysis of reinforced concrete circular columns strengthening with CFRP under concentric and eccentric loadings	Frattura ed Integrità Strutturale, 17, (63), 190-205	2023
12	Rehabilitation of Shear damaged Reinforced Concrete Beams with U-Wrapped Carbon Fiber Reinforced Polymer Sheets: Experimental study	Diyala Journal of Engineering Sciences, 16, (1), 34–43	2023
13	The behavior of reinforced lightweight concrete beams with initial cracks	Frattura ed Integrità Strutturale, 17, (66), 297-310	2023
14	Behavior of a Multi-Story Steel Structure with Eccentric X-Brace	Frattura ed Integrità Strutturale, 17, (66), 273-296	2023

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عنوان رسالة الماجستير:

Cost Optimization of Reinforced Concrete Building

دكتوراه هندسة الانشاءات/ قسم الهندسة المدنية / جامعة نوتنكهام	2013

عنوان اطروحة الدكتوراه:

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البحوث المنشورة

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EDUCATION

- **Ph. D. in Civil Engineering, 2020, Portland State University, Oregon, USA.**
- **M. Sc. in Civil Engineering, 2005, Baghdad University, Baghdad, Iraq.** (Nonlinear Analysis of Reinforced Fibrous Concrete Vierendeel Trusses)
- **B. Sc. Civil Engineering, 2001, Baghdad University, Baghdad, Iraq.**

ACADEMIC EXPERIENCE

2020 – Present: Lecturer at Civil engineering department, Nahrain University

- **Taught Courses:**
  Engineering Mechanics (Static & Dynamic)
  English Language III
  Computer programming (with MatLab)
  Mathematics (III & IV)
  Reinforced Concrete Design III
  Computer Application in Civil Engineering
  Numerical Analysis

- **Supervised projects for undergraduate end academic year:**
  - "Ultrasonic Wave Propagation Analysis in Concrete Structures", Ahmed Ali Hmood, Haider Fakher Kazem, and Mustafa Ahmed Qasim, June 2023.
  - "Implementation and Comparison of Different Numerical Models Using Python", Hussein Abdul Razzaq Jassim, and Zainab Adnan, June 2023.
  - "Non-Destructive Tests: Vision and Applications", Ranya Salah Aldin Jassim, June 2022.
  - "Complete Design Steps for a Swimming Pool", Gadeer Yousif, June 2022.

2013 – 2020: Ph. D. candidate at Portland state university.

2006 – 2013: Assist. Lecturer at Civil engineering department, Nahrain University

- **Taught Courses:**
  Computer programming (q-basic, Visual basic, C++)
  Steel Design
  Theory of structures
  Engineering Mechanics

- **Taught Laboratories:**
  Mechanics of material
  Soil Mechanics
  Sanitary
  Surveying
  Engineering Drawings

- **Supervised projects for undergraduate end academic year:**

- “Analysis and Design of Vierendeel Steel Truss”, Ghada H. Abid, June 2010.
- “Structural Analysis and Design of the Steel Mobile Crane System for a typical River Sub-regulator”, Estabraq H. Ali, June 2011.

ADMINISTRATION EXPERIENCE

- 2006-2008: Editorial Secretary of Nahrain University, College of Engineering Journal (NUCEJ)
- 2009-2010: Secretary of Scientific Promotion Committee
- 2011-2012: Vice head of Civil Eng. Dept. for graduate student affair

MEMBERSHIP IN SCIENTIFIC AND PROFESSIONAL SOCIETIES

2004-present: Iraqi Engineers Union

PUBLISHED PAPERS

- Hameed, Alaa W. (2008). Earthquake and safety of building. *Symposium: Disaster management and safety of buildings in Arab countries Conference, Kingdom of Saudi Arabia*.
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- Hameed, Alaa W. (2013). Failures modes for different structural types during an earthquakes. *International Journal of Civil Engineering (IJCE).* Vol.2, Issue 1, Feb. 2013, pp 47-56.
- Thomas Schumacher , Alaa W. Hameed, Christopher Higgins, Brittany Erickson (2021). Characterization of Hydrodynamic Properties from Free Vibration Tests of a Large-Scale Bridge Model. *Journal of Fluids and Structures.* vol. 106 (2021) 103368.
- Alaa W. Hameed, Minjie Zhu and Thomas Schumacher (2022). A 2D Model Using PFEM for a Bridge Superstructure Subjected to Wave Action. *The international Middle eastern Simulation and Modelling conference 2022, MESM'2022.*

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	6. Design of fuel tanks foundation (with others) for diesel storage fuel in Al-Muthana air base station (2010). **7.** [14/3/2010] to [13/3/2011] International Total Engineering Corporation (**ITEC** Group), YAMASHITA SEKKE INC., AZUSA SEKKEI CO., LTD. Site consultant engineer for (400bed) Educational Hillah Hospital. **8.** From 13/3/2011-2018,expereance in design and analysis and repairing different buildings and projects with supervising on soil field investigations and existing building foundation inspection using (PIT) and laboratory tests. **9.** Site supervisor engineer for Al-Shaeb residential building investment project. **10.** Preparing soil investigation reports for many projects and plenty of soil fields test (soil compaction, plate load test, soil resistivity, soil permeability, supervising and design of sheet piles (H shape)(2015-2023). **11.** Field lab supervisor engineer for many civil engineering projects (AlQudus electricity power plant project field (2014), Al-Zawraa sport stadium project lab. field (2014), In Al-Nafiees for medicine and pharmacy sciences university projects (2015), Basmaiyea electricity Power plant project (2017-2018) lab. field. **12.** Conducting pile integrity test for piles located under residential concrete basement near Hyfa-street region/Baghdad. **13.** Evaluate Bored piles for Dar-Al Salam residential investment project (2018-2019). **14.** Managed and performed soil field tests (DCP, CPT, plate load tests) for many projects, including the Baghdad international airport, residential compounds, a commercial mall, and others (2020-2023). **15.** Supervising on the field static piles load test(2022-2023). **16.** Studying the static piles load test reports and approving on the allowable pile capacity(2023). **17.** Design and supervision on water pump system for two buildings (2023). **18.** Design the lateral earth supporting system for many buildings inside Baghdad city (2023).
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LINKS

https://scholar.google.com/citations?user=RFZwSKsAAAAJ&hl=en

https://publons.com/researcher/ABE-7994-2020/

https://www.researchgate.net/profile/Jabbar_Al-Baidhani

https://publons.com/dashboard/settings/profile/

https://orcid.org/0000-0003-4970-2081

https://www.linkedin.com/in/jabbar-h-al-baidhani-280a091ba/

Publications

2023

- EVALUATION THE WATER QUALITY OF AL RUSAFA TREATMENT PLANT IN BAGHDAD CITY / AL-RUSAFA SIDE USING SEVERAL WATER QUALITY INDICES
  A Al-Baidhani, 2023
  3C Tecnología. Glosas de innovación aplicadas a la pyme. ISSN: 2254-4143, Ed.43, (12), 176-189

- Assessing the Influence of Climate Change on Water Treatment Efficiency in Baghdad, Iraq
  N Kareem1, P Al-Baidhani, 2023
  Journal of Wildlife and Biodiversity, 7, (xx)

2022

2021

2020

السيرة الذاتية

م..نوره سعد فرج

المواليد وعنوان السكن

سنة الميلاد: 1980

عنوان السكن: بغداد / حي الجامعة

وسائل الإتصال

موبايل:

07702749651

البريد الألكتروني:nano_8098@yahoo.com

مهارات الحاسوب

AutoCAD

Microsoft Office

اللغات

English

الخبرات

تدريسية في قسم الهندسة المدنية/ جامعة النهرين منذ 2014/7/21**.**
معيدة في قسم الهندسة المدنية / جامعة النهرين منذ 2006/5/15.
وزارة البيئة / دائرة بيئة بغداد منذ 2004

الجانب الأكاديمي:

- تدريس مادة الرياضيات
- تدريس مادة الرسم الهندسي
- تدريس مختير الهندسة الصحية
- تدريس مختبر ميكانيك الموائع
- تدريس مادة الصحية النظري
- تدريس مادة الفيزياء نظري
- تدريس مادة الاحصاء الهندسي
- الإشراف على طلبة مشاريع تخرج المرحلة الرابعة.

الجانب الإداري:

- مقررة القسم للدراسات العليا لمدة سنة واحدة.
- عضو في لجنة المودل الخاصة بالقسم
- عضو في لجنة الاعلام
- عضو في لجنة الغيابات
- عضو في لجنة الدراسات العليا /قسم الهندسة المدنية
- عضو في لجنة الحمل والاجور

التحصيل الدراسي

- ماجستير في الهندسة البيئية /كلية الهندسة -جامعة بغداد عام 2014
- بكلوريوس في الهندسة البيئية / كلية الهندسة- جامعة المستنصرية عام 2003

البحوث المنشورة

- بحث منشورفي Scopus بعنوان:

Prediction of dust storms in construction projects using intelligent artificial neural network technology

- بحث منشورفي Scopus بعنوان:

Development of Bi-Langmuir model for description initial pH and temperature effects on the sorption of cadmium onto waste foundry sand

- بحث منشورفي Scopus بعنوان:

Flexural Behavior of Rubberized Reinforced Concrete Beams

- بحث منشور في Clarivate بعنوان

Behavior of hybrid concrete beams with waste rubber

- بحث منشور في مجلة جامعة النهرين بعنوان

Experimental Measurement of Rice Husk Effectiveness as an Alternative Adsorbent for Turbidity Reduction in Synthetic Water

* بحث منشور في مجلة الاتحاد / جامعة بغداد بعنوان

process for removing oil from wastewater using sawdust+bentonite

- بحث منشور في Scopus بعنوان:

Removal of Meropenem by using Lemna minor

- بحث منشور في Scopus بعنوان :

Engineering Characterization of Quaternary Sandy Soil in the Mesopotamia Plain

الدورات التدريبية والشهادات

- المشاركة في المنهاج التدريبي لوحدة التعليم المستمر بصفة محاضر(المحددات البيئية وطرق معالجتها).
- المشاركة في دورة تدريبية في قسم النشاط الرياضي والمدرسي بصفة محاضر (البيئة والصحة).
- المشاركة في المنهاج التدريبي لوحدة التعليم المستمر بصفة محاضر(الواقع البيئي لنهر دجلة).
- المشاركة في دورة التدريبية لمنتسبي القسم بصفة محاضر(كيفية استخدام الاجهزة المختبرية (TSS,COD,BOD)).
- المشاركة في دورة التدريبية لمنتسبي القسم بصفة محاضر(كيفية اجراء الفحوصات المختبرية للمياه).
- اجتياز الدورة التدريبية الخاصة في مركز التدريب والتأهيل الوطني البيئي(مفهوم النظم البيئية الطبيعية والية الحفاظ على المعالم الطبيعية في العراق)
- المشاركة في الدورة الافتراضية /مركز التعليم المستمر /رئاسة جامعة النهرين (دورة الطرائق الاجرائية وفق معايير المختبر GLP)

CORRECULUM VITAE

NAME

First: **Laith**
Middle: **Khalid**
Last : **Al-Hadithy**

Gender: Male

Place of Birth: Baghdad- IRAQ

Date of Birth: 1959

Nationality: Iraqi

Adress : *P.O. Box 64040 Baghdad-Iraq.*

E-Mail Adress : *laith.kh.alhadithy@gmail.com*

Contact Phones : Mobile *00964 -7-705362710*

Educational Background

- **12 / 7 / 1977:** Graduated from "Al -Markaziyah Secondary School "in Baghdad. He **ranked third amongst all Iraqi students** in the ministerial examination of the preparatory study.

- **1 / 10 / 1977 – 30 / 6 / 1981:** Undergraduate study in the College of Engineering (Civil Engineering Dept.) – University of Baghdad with good average and **ranked 7 amongst 120 graduates** in the 1st term examination (average of the last two years is 78.55%). Language of study was English.

- **1 / 12 / 1982 - 30 / 9 1985:** Study for the M.Sc. Degree in Structural Engineering in the College of Engineering of the University of Baghdad. The study included courses and thesis entitled **" Analysis of Indeterminate Bridge Decks by the Orthotropic Plate Theory with Experimental Study "**

- **1 / 10 / 1993 – 20 / 4 / 1999:** Study for the degree of Ph.D. in Structural Engineering in the College of Engineering of the University of Baghdad. The study included courses, comprehensive examination and thesis entitled **"Analysis of Reinforced Concrete**

Plain and Ribbed Cylindrical Arch Shells by Discrete Element Methods ". The average degree was 84.8%.

Recent Job

Head of civil engineering department (assistant professor) – College of Engineering – Al-Nahrain University.

Professional Experience

Listed below are the most important professional tasks (design and supervision)

- **Aug. 1981 – Dec. 1982** : Site engineer during the 1st military service in the *General Establishment for Implementation of Military Projects* (Sites of the *Atomic Reactor* and *Al-Rasheed Military Hospital* in Baghdad).
- **June 1987 – Oct. 1989** : Supervision for the design and implementation of "*Al-Dora 1500 – apartment project*" implemented by " *Tariq Company for Construction Contracts/Ministry of Housing & Construction*".
- **Oct. 1989 – May 1990** : Supervision for the design and implementation of "*Al – Anbar Technical Institute* " implemented by " *Al – Farouq Company for Construction Contracts/Ministry of Housing & Construction*".
- **Jan. 1990 - July 1990** : Structural Design of the " *P.C. Bridge over the General EuphratesRiver Mouth* " in Al- Nasiriya **.**
- **March 2000 – Jan. 2002** : Consultant engineer for some projects of the "*Engineering Affair Office*" in the "*Administration of Presidency*". Within this work , designs of some parts of " *Um Al- Qura Mosque*" , " *Porticos of the Southern Presidency Palace*", and other special buildings in addition to their consultant supervision were done .
- **Jan. 2003 – March 2003** : Design and consultant supervision of " *Rehabilitation of the Sulfuric Acid Towers in Al-Qa'im Phosphate Plant* " .
- **Nov. 2003 – July 2004** : Member of the Consultant team of the"*Engineering Consultant Bureau of Al-Nahrian Univ*." for the project of "*Haditha Electrical Power Generation Plant* ".
- **Feb. 2005 – April 2005** : Structural design of buildings of "*the Lecture Halls*" and "*the Research Center*" projects in Al-Nahrain University.
- **June 2007 – Nov. 2008** : Design of buildings for ministries of "*Education*" and "*Health"* as a consultant engineer in the " *Engineering Consultant Bureau of Al-Nahrain University"*.
- **Dec. 2008 – Oct. 2010** : Consulting supervision for design and implementation of "*Al- Rasheed(East of Tigris) Water Supply Project* " through the Consultant team of the "*Engineering Consultant Bureau of Al-Nahrain University*".
- **May 2011 – Dec. 2011 :** Consulting supervision for implementation of *"Al-Quds Thermal Station for Electric Power Generation"*.
- **May 2013 – March 2014 :** Civil engineering consultant for the laboratory of the " *Engineering Consultant Bureau of Al-Nahrain University"*.

- **Jun 2013 – Feb. 2014 :** Presenting and submitting numerous priced tenders and offers for various and diverse adjudications for ministries of *"Internal Affairs", "Health", "Electricity", "Education", "Environment", "Industry and Minerals", "Culture", "Youth and Sports", "Agriculture" "Commission of Integrity",and "Foundation of Martyrs".*
- **Oct. 2013 – March 2014 :** Civil engineering consultant for the engineering field laboratory of *"Ibn-Sine Medical College Project"*.
- **Dec. 2013 – Jan. 2014 :** Structural design and tender preparation for the building of *"Investigations Office / Commission of Integrity"*.
- **Oct. 2013 – Feb. 2014 :** Structural design and tender preparation for the building of the *"Culture House in Al-Mahmudiya / Ministary of Culture"*.
- **Jun. 2014 – Oct. 2014 :** Designs of building enlargement for health office in Abu Ghraib province.
- **Sep. 2014 – April 2015 :** Checking designs and bills of quantities for construction projects of buildings for provinces bureaus as per Independent High Electoral Commission.

Academic Experience

I) Lecturing :

- **10 / 11 / 1985 – 29 / 12 / 1986 :** ***Military Engineering College Baghdad / Iraq***
  Taught subjects in the *Civil Engineering Department*:
  "Concrete Technology ", " Mechanics of Materials"**.**

- **10 / 2 / 1978 – 22 / 5 / 1999 :** ***Al-Anbar Technical Institute***
  Taught subject in the Building *& Construction Department*:
  "Engineering Mechanics", "Concrete Technology ", "Building Construction ",
  "Construction Methods and Equipment "," Engineering Management ",
  "Quantitative Surveying ".

- **1 / 10 /1999 – 20 / 1 / 2002 :** ***Al-Anbar University / College of Engineering***
  Taught subjects in the *Civil Engineering Department* :
  "Theory of Structures", "Structural Steel Design ".

- **7 / 4 / 2002- Till now :** ***Al- Nahrain University/College of Engineering***
  - Taught subjects in the *undergraduate stage of the Civil and the Architectural Engineering Departments:*
  "Engineering Mechanics", "Mechanics of Materials", "Design of R.C. Structures", "Engineering Mathematics", "Theory of Structures" , "Design of Steel Structures".
  - Taught subjects in the *M.Sc. study of the Structural Engineering Division:*
  "Theory of Elastic Stability" , " Advanced Structural Analysis /Part 1" , "Advanced Structural Design"
  - Taught subjects in the *Ph.D. study of the Structural Engineering Division:*
  "Advanced Mechanics of solids" ,"Advanced Structural Analysis/Part 2".

II) Supervision for the final year undergraduate projects in structural engineering :

Fields of design projects:

P.C. Bridges , Steel Truss Bridges , R.C. Elevated Water Storage Tanks
R.C. Folded Plate Roofs, Large spam R.C, Frames

III) Supervision for thirty-nine M.Sc. theses in structural engineering in nine research fields

IV) Supervision for four Ph.D. theses in structural engineering in three discrete research field

V) Academic research in seven fields of structural engineering

Languages

- Arabic.
- English.

Professional Organizations

-Member of Iraqi Engineers Union since 1982.(Rank:Consultant Engineer since 1999).
-Affiliate member in the American Society of Civil Engineers since August 2006.

Published research:

(after 1 / 1 / 2009)

Thirty-six research papers in structural engineering have been published in several international specialized scientific-research refereed journals (Iraqi and foreign).

Engineering Conferences

(after 1 / 10 / 2008)

1- Ten researches were presented in nine scientific conferences for engineering research
2- Research accepted for presentation in the first international conference for civil engineering in the University of Basrah , 8-9 October 2013.
3- Research accepted for presentation in the third scientific conference for engineering in the University of Diyla , 16-17 December 2017.
4- Tow research presented in the 4^{th} International Conference on Engineering Sciences (ICES2020) 5^{th}-6^{th} December 2020, Kerbala, Iraq.

Administrative Responsibilities

- **April 2004 – June 2007** : Manager of the *Engineering Affair Office of Al-Nahrain University* – Baghdad. That office is concerned by the implementation and supervision of the university construction projects such as buildings of the "*Information Technology College*" , the "*University Central Stores*", the "*Lecture Halls*", the "*Research Center*"…etc. , and the university rehabilitation projects such as the "*Central Air Conditioning Systems*", the "*Students Housing Camps*" , the "*Central Library*" , the "*Medical Research Center*", …. etc.

- **October 2010 – October 2013 :**
  Head of Department of Civil Engineering / College of Engineering / Al-Nahrain University.

- **April 2011 – April 2014 :**
  Member of the Administration Committee of the " *Engineering Consultant Bureau of Al- Nahrain University"*.

- **October 2016 – March 2019 :**
  Representative of the faculty members of engineering college.

- **October 2016 … till now :**
  Member of the council of engineering college/Al-Nahrain University.

- **March 2019 … till March 2020 :**
  Head of Department of Civil Engineering / College of Engineering / Al-Nahrain University.
- **March 2020 … till now :**
  Member of the board of the Civil Engineering Department / College of Engineering / Al-Nahrain University.

Sustainable Technical Activities

- **November 2007 . . . till now :**
  Member in the *"Technical Committee"* of the *"Iraqi Program of Improving and Developing the Building Codes and Specifications"/* Ministry of Construction and Housing .

Curriculum Vitae

First name: MANAHIL ZAYNO MOHAMMED

Date of birth: 4/8/1974

Nationality: Iraqi

Specialization : artificial Intelligence

Work Address: Civil Engineering Department/ Al-Nahrain University Since 2003

Current Address: Baghdad /Al- Mansour

Email Address: manahil.zayno@nahrainuniv.edu.iq

EDUCATION

M. Sc. in College Of Science,2022 Al-Nahrain University ,Baghdad, Iraq.

B. Sc. Computer Science, 2012 College of Dijlah University, Baghdad, Iraq.

SKILLS AND INTERESTS

- Microsoft Office
- Programming (Visual Basic,)
- AutoCAD
- Formatting and installing Computers

University of Al-Nahrain

College of Engineering

CURRICULUM VITA

Personal information:

Name : AbdulAzeez Abulrasool Al-Kifae
Prof.Dr.of Geotechnical Eng.
Address: Iraq/Baghdad

e-mail : Alkifaeaziz@yahoo.com

Mobil : 07803854187

Place and Birth date: Baghdad / 05 .05 .1961
Sex : male
Nationality: Iraqi
Religion: Muslim

Social state: **married**

Degree	University	Country	Year
B.Sc.	University of Technology	Iraq	1982
M.Sc.	Kharkov University	Ykrania	1987
Ph.D.	Leningrad University	USSR	1991

Scientific Experience :

- As Assist. Lecturer :
- As Lecturer :
- As Asset professor :
- As professor : Professor

Fields of Experience

Academic and Professional Experience:

Civil Engineer at Foreign Company Dept., Directorate of Military works, 1982 to 1985.

Designer at Engineering Advisory Bureau, Interior Ministry, 1990 to 1991.

High education and research science of Ministry, Lecturer /Civil Eng., Babylon University, 1991 to 1998.

Lecturer soil and foundation ,Civil Engineering ,Al-Kufa University , 1998 to 2000 .

Lecturer technology of concrete, Civil Engineering, Al-Kufa University, 1998 to 2000.

Assist. Dean of Academic Affairs Engineering College, Al-Kufa Unversity , 1998 to 2000 .

Assist.Head of Road Dept.Al-Mustansiriya University, High Education and research science Min., 2000 2003.

Head of Road Dept.Al-Mustansiriya University, High Education and research science Min., 2003 2006.

Manager of the Engineering Bureau Al-Qadisiya Unv., High Education and research science Min.,2007 to 2008.

Head of Civil Eng.Dept.Al-Muthana Unv., High Education and research science Min.2008 to 2009.

Assist. Dean of Academic Affairs Engineering College, Al-Muthana Unv.,2009 till now.

Head of Office Engineering Affairs in Al-Nahrain University 2012 - 2014

Professional services and membership

Member in Iraqi union of engineering 1982.

Member in Iraqi society for engineering 1985.

Member in Iraqi society for Geotechnical Engineering, 2001.

Participatation in the First Conference of Geotechnical for Ministry of Housing and reconstruction, 1991,

Participatation in the Fourth Conference of Geotechnical for Ministry of Housing and reconstruction, 2001.

Participatation in the Iraqi Conference For reconstruction in Jordan,2005.

Supervising and Consultant:

Sewerage Treatment Plant Consultant at Al-Qadisiya Pump government 2006,

Station in Al-Bideer Consultant at Al-Qadisiya government 2006,

Al-Rumaitha Water Treatment Plant Consultant Al-Muthana Government 2007.

Civil engineering Consultant for Many projects for construction Ministry,

Civil engineering Consultant for, many projects for Industries Military Ministry,

Civil engineering Consultant for , Many projects for Nuclear Organization.

Courses Taught:

1) Undergraduate student,” for many Unv. Of Iraq”

Soil Mechanics; Fondation; Material of Construction; Technology of concrete; Computer Application.

2) Postgraduate student Advance Soil Improvement.

M.Sc. thesis supervision for many post graduate students in all Univ. Of Iraq,

Ph.D. thesis supervision for many post graduate students in all Univ. Of Iraq,

Supervisor

Empirical Correlations between physical and engineering properties Clayey soil in baghdad governorate, Shaima S.K. , 2005 , Nahrain Univ.

Finite Element Investigation of the behavior of Wall-Soil System , Firas A. S. , 2005 , Baghdad univ.

Effect of leaching and loading on Gypseous soils under road, Qais S.K. 2007, AlMustanseria unv.

Study planning and sdesign of airoport mahaly , Raqem M.N. , 2005 , AlMustanseria Univ.

Prediction fatigue in flexible pavement , Abdulhaq H.A. , 2005 , Tranportation DEpt. AlMustansiria Unv..
Improve the gypseous soil properties by leaching , Israa F. , 2006 , AlMustanseria unv.
Evaluation of limit of soluble salt , Amer M.M. , 2006 , AlMustanseria Univ.

Determination of passenger car unit factors for different types of vehicles in Baghdad city, Yasser K. SH., 2006.

Development of models, for performance, predictions properties of RAP. Faris M.J., 2006, Al Mustansiria Univ.

Consultant

Prediction Models for the Module of Pavement Materials, Hasan H.J. , 2005 , Technology unv.

Improvement of soft clay subgrade ,under road pavement, Audai A.I., Technology unv.

Effect of lightweight materials on consolidation characteristics embankment on soft soils, Ahmed S.J. , 2006 ,Baghdad unv.
Study thecompression and shear strength properties of organic soil, Zeena M.H. , 2006 , AlMustanseria unv.

Effect of tie beams on settlement and moments of footing , Luaai H.K. , 2006 , nahrain unv.

Effect of degree of anisotropy gradient under dams using finite element method. ,Rasha A.K., 2007, AlKufa unv.

Seepage Analysis of earth dams by finite element, Salam N. Y. , 2007 , Al Kufa unv.

Required criteria ,for implementation the super pave system in local pavement design, Alaa H.A., 2010, Baghdad unv.

Experimental and theoretical study ,on Timber-Concrete composite beams, Ihab S.S. 2010,engineering Dept. Basra University.

☐	The Effect of improvement surrounding soil on bored pile friction capacity Alkifae A Abdulaziz INTERNATIONAL JOURNAL OF CIVIL ENGINEERING & TECHNOLOGY (IJCIET) 7 (0976 ...	2016
☐	Empirical Relationships between Index properties and Compression Indices of Clayey solis in Al-Nasiriya City Alkifae A Abdulaziz Journal of Babylon University 4 (1992-0552), 101-107	2014
☐	Improve Performance of Asphalt Concrete overlay by using SBR as modified Alkifae A Abdulaziz, AA Riadh, KS Hayder Al-Qadisiya Journal for Engineering sciences 6 (1198-4456), 101-110	2013
☐	Evaluation of Recycled Hot Asphalt Mixtures (Expressway No.1-R9-Iraq) N Faris, Alkifae A Abdul Aziz Zanco journal of pure and applied sciences 23 (ISSN 2218-0230), 57-67	2011
☐	Chemical and Physical effects on Engineering properties of Gypseous sub-grade soil Alkifae A Abdulaziz Al-Qadisiya journal for engineering sciences 3 (1198-4456), 102-125	2011
☐	Deterioration reduction of the flexible pavement roads in south Iraq AlKifae A Abdulaziz Journal of Babylon University 1 (1992-0552), 87-92 Al-Kifae,A.A.: The weakened of bearing capacity of soil beneath the raft foundation causes differential settlement , Urouk Journal of Al-Muthana University ,	2011
☐	Influence of the clay-lime compound on sand dune properties Alkifae A Abdulaziz Al-Qadisiya Journal for Engineering Sciences 2 (Issn1198-4456), 330-337	2009
☐	Effect of drainage materials on swelling potential of expansive subgrade soil beneath asphaltic flexible pavement AlKifae A Abdulaziz Engineering and Development,Al Mustansiria University 1 (18137822), 34-47	2003
☐	Instability of building in Najaf constructed on Gypsious soils Akifae A Abdulaziz Journal of Babylon University 7 (629), 1430-1434	2002
☐	Effect of the expansive soils on the stability of building in Baghda AlKifae A Abdulaziz Journal of Engineering and Development,Al-Mustansiriya University 1 ...	2002
☐	Improvement physical and chemical properties of sand dune to use it as sub-grade in roads Alkifae A Abdulaziz Fourth Scientific Conference of the Ministry of Housing and Construction 1 ...	2001

Controlling collapsibility potential by improving Iraqi gypseous soils subsidence: A Review study — 2020
S Al-Zabedy, AA Al-Kifae
IOP Conference Series: Materials Science and Engineering 745 (1), 012107

The Effect of Improvement Surrounding Soil on Driven Pile Friction Capacity 2017
MMS Abdulaziz A. Al-Kifae
AlNahrain Jouranl for Engineering Sciences 20 (Vol 20 No 1 (2017): AlNahrain …

Effect of Organic Soil Acidity on the Properties of Iraqi Soil 2017
NHA Abdulaziz A. Al-Kifae
American Scientific Research Journal for Engineering, Technology, and …

Inspecting the effects of organic content on compaction and consolidation characteristics of organic soil models 2017
AA Al-Kifae., MA Hamad
American Academic Scientific Research Journal for Engineering, Technology

…
Cavity Effects on Axially Loaded Single Pipe Piles Embedded in a Sand Deposit 2021
FA Abdullah, MY Fattah, AA Alkifae
2021 4th International Iraqi Conference on Engineering Technology and Their

…Improvement of Strength of soft Clay Soil by Using cement kiln dust, fly ash and Ceramic Dust waste (Times New Roman Bold 12) 2021

GK Abd, AA Al-Kifae
Turkish Journal of Computer and Mathematics Education (TURCOMAT) 12 (14

Behavior of Group of Plugged and Unplugged Pipe Piles in Soil Containing Cavities 2020
FA Abdullah, MY Fattah, AA Al-Kifae
IOP Conference Series: Materials Science and Engineering 888 (1), 012068

Earthquake effect on single pile behavior with various factor of safety and depth to diameter ratio in liqufiable sand 2018
RR Al-Omari, AA Al-Kifae, SM Al-Tameemi
International Journal of Civil Engineering and Technology 9 (4), 1253-1262

The influence of CKD on the properties of Iraqi gypsum soil 2024
AS Fakhruldeen, AA Al-Kifaee
AIP Conference Proceedings 3009 (1)

Soft Clay Soil Stabilization By utilizing Cement Kiln Dust, Ceramic Dust Waste and Fly Ash 2021

GK Abd, AA Al-Kifae
Design Engineering, 9051-9071

Curriculum Vitae

Name : **Asma Thamir Ibraheem**

Sex : Female

Nationality: Iraqi

Date of Birth: 6/9/1966

Qualification: Ph.D. / Asst. Prof.

Job Address: Al-Jadriah / Baghdad / Iraq / Nahrain University/College of Engineering/ Civil Engineering Department.

Home Address: Al-Karrada / District 903/ Street 8 / House 78 / Baghdad / Iraq.

E - Mail: asma.th.ibraheem@nahrainuniv.edu.iq
Language Skills: Mother tongue Arabic, English.

Websites:

1. **http://eng.nahrainuniv.edu.iq/content.php?ctgryid=24**
2. **https://www.researchgate.net/profile/Asma_Ibraheem2**
3. **https://scholar.google.com/citations?user=JpUC1FQAAAAJ&hl=en**
4. **HTTP://ARID.MY/0001-4931.**

ORCID : https://orcid.org/0000-0002-0104-7949

Researcher ID : L-1623-2016

Scopus Author ID: 55147707500

Educational Degree:

1. Ph.D. in Civil Engineering/Roads and Airports Engineering, Al-Nahrain University, Baghdad, Iraq 2003.
2. M.Sc. in Surveying Engineering, Baghdad University, Iraq 1997.
3. B.Sc. in Surveying Engineering, Baghdad University, Iraq 1988.

Work Experience:

Title: Engineer, Civil Department, College of Engineering, Al-Nahrain University.
Period: 1989 - 2003
Title: Faculty Member, Civil Department, College of Engineering, Al-Nahrain University.
Period: 2003 till now.
Title: Assistant of the head Civil Engineering Department.
Period: 2003-2006.
Title: Head Civil Engineering Department.
Period: 18-May-2015 till now.

Professional Achievements:

1. Ph.D. Study: Optimum Transportation Route through Heterogeneous Terrain.
2. M.Sc. Study: Utilization of Local Resources to Develop GIS in Surveying and Route Location.

3. Full Member of the American Society of Civil Engineers (ASCE), Member ID # 1004100.
4. Consultancy experience in highway materials, highway construction, evaluation of roadway traffic systems, specification for roadways and bridges and Geometric highway design.
5. Member of the International Geoinformatics Research and Development Journal (IGRDJ), INTERNATIONAL ASSOCIATION FOR GEOINFORMATION AND COMMUNICATION TECHNOLOGY (AGeoICT), Registration Number: [16112011-1], CANADA.
6. Member of the Asian Research Publishing Network (ARPN) Journal for Engineering and Applied Sciences, Pakistan.
7. Reviewer in ASCE : Journal of Transportation Engineering, USA.
8. Reviewer in the Open Journal of Civil Engineering (OJCE), USA.
9. Reviewer in the British Journal of Applied Science & Technology , **SCIENCEDOMAIN *international* (SDI)** publishes, International.
10. Member in ARAB RESEARCHER ID: 0001-4931, HTTP://ARID.MY/0001-4931.

Research Activities and Training Courses:

1. Advisor for final year student projects
2. Advisor for M.Sc. student theses.
3. Advisor for Ph. D. student theses.
4. Publications of many research papers in the field of Surveying Engineering, Civil Engineering and Transportation Engineering, Geographic Information System (GIS).
5. Training Course under the program of UNESCO, for the period from 2 Oct 2006 to 2 Dec 2006, Polytech Lille University, Lille, France.
11. Editor board in International Geoinformatics Research and Development Journal (IGRDJ), INTERNATIONAL ASSOCIATION FOR GEOINFORMATION AND COMMUNICATION TECHNOLOGY (GeoICT), CANADA. http://www.igrdg.com
12. Editor board in the Asian Research Publishing Network (ARPN) Journal for Engineering and Applied Sciences, Pakistan. http://www.arpnjournals.com
13. Reviewer in ASCE : Journal of Transportation Engineering, USA.
14. Reviewer in Open Journal of Civil Engineering (OJCE), USA.
15. Advisor for Post graduate student theses in Gaziantep University/ Turkey.

Academic Activities:

The following courses have been given:

1. Engineering Drawing
2. Transportation Engineering
3. Engineering Mathematics
4. Surveying
5. Geomatics
6. Internet Technology
7. Advanced Engineering Analysis
8. Geotechnical Aspects in Pavement Design and Constructions.
9. Engineering Optimization
10. Airport Engineering
11. Bridge Engineering

12. GIS and Remote Sensing
13. Supervision of final Year projects.
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Curriculum Vitae

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Summary of Qualifications	• B.Sc. in Building and Construction Engineering (Civil Eng.) , Department of Building and Construction Engineering , University of Technology , Baghdad – Iraq 1999. • M.Sc. In Environmental Engineering , Department of Building and Construction Engineering , University of Technology , Baghdad – Iraq 2002. • Ph.D In Environmental Engineering ,Collage of Engineer , University of Baghdad , Baghdad – Iraq 2016.
Languages	• Arabic (Mother Tongue) , English (Writing and Speaking)
Published Researches	• Dr. Yasmen A. Mustafa , Mohammad Ali Akrim Ali Shaban, Treatment of wastewater by cement kiln dust , *Association of Arab Universities Journal of Engineering Sciences,* NO. 2 Volume. 24 Year. 2017 • Mohammed Ali A. Shaban, Mohammed A. Ibrahim, Mohanad J. M-Ridha, Haitham A. Hussein, Adsorption of Meropenem Antibiotics from Aqueous Solutions on Multi-Walled Carbon Nanotube, *International Review of Civil Engineering (I.RE.C.E.),* Vol. 11, N. 6 , 2036 – 9913, November 2020 • Mohammed A. Ibrahim, Mohammed Ali A. Shaban, Yaseen Rashid Hasan, Mohanad J. M-Ridha, Haitham A. Hussein, Khalid M. Abed, Sabah J. Mohammed, Mohd Hafizuddin Muhamad, Hassimi Abu Hasan,Simultaneous Adsorption of

	Ternary Antibiotics (Levofloxacin, Meropenem, and Tetracycline) by SunFlower Husk Coated with Copper Oxide Nanoparticle, *Journal of Ecological Engineering* ,23(6), 30–42 , 04.2022. • Yaseen Rashid Hasan, Mohammed Ali A. Shaban, Mohammed A. Ibrahim, Mohanad J. M-Ridha, Haitham A. Hussein, Effect Of Calcination Temperature On The Adsorption Performance Of Mg/Al Layered Double Hydroxide Nanoparticles In The Removal Of Meropenem Antibiotics, *Iraqi Journal of Agricultural Sciences(IJAS),*Volume 54, (4) , 2023.
Employment Record	A. **Member of the Engineering Consulting Bureau of the University of Technology since 1/11/2001; achieved the following** : B. Design and check of the Al- Samawah Water Network System for Al- Samawah city – Al-muthana governorate2002 C. Work with group to Design and check a Network of the Sewage sewer System of Al- Samawah city – Al-muthana governorate D. Work with group to Design and check a Network of the storm sewer System of Al- Samawah city – Al-muthana governorate E. Work with group to Design and check a Network of the Sewage sewer System of Baiji city –Salah al-deen governorate F. Work with group to Design and check a Network of the Storm sewer System of Baiji city –Salah al-deen governorate G. Design and check of the Al- Samawah Water Network System for Al- Samawah city – Al-muthana governorate 2009. H. **Member of the Engineering Consulting Bureau of the Iraqi Engineers Union since 1/8/2002; achieved the following**: I. Design and check of the Al- Mousil Water Network System for Al- Mousil governorate **J. Member of the Engineering Consulting Bureau of the University of Al-Nahrain since 2007; achieved the following:** K. Design of Cold & Hot Water system Network & sewage drain system for three building to be Lecture for the University of Technology and follow-up

	L. Design of Cold & Hot Water system Network & sewage drain system for seven building to Agricultural Technical Training & Competence Center in Al-Muthana for The State Board of Agriculture of Extensions & Cooperation and follow-up. M. Design of Cold & Hot Water system Network & sewage drain system to examination check center in Baghdad for Ministry of Education and follow-up. N. Design of Cold & Hot Water system Network & sewage drain system to Office of General Directorate for Assessment & Examination for Ministry of Education and follow-up. O. Design of Cold & Hot Water system Network & sewage drain system to General Education Directorate in Baghdad for Ministry of Education and follow-up. P. Design of Cold & Hot Water system Network & sewage drain system for Housing Project / 504 Dwelling Units in Najaf / Hay Al-Quds for Arth Al-Sado Company to be submitted for Ministry of Construction and Housing / State Commission for Housing and follow-up. Q. Participate in the general analysis and check of a sewage, storm network & waste water treatment plant to ail Bideer ,Al hamza Al sharqi , Al daghara ,Al dewaniyah right side and left side , Al shamiah , Al shanafiah , Aafick ,Ghamass for Al-Dewaniyah governorate. R. Checking and endorsement the design of Sharq Dijlah water treatment plants Phase II designed by Parsons for the Governorate of Baghdad . S. Checking and endorsement the design of Al-Rashid water treatment plants Phase II designed by Parsons for the Governorate of Baghdad . T. Checking and endorsement the design of The sport city of Basrah designed by 360° office for the Ministry of sport . U. Design of Cold & Hot Water system Network & sewage drain system for Compound Of Justice Buildings in Abo Ghreeb to Ministry Of Justice . V. Design of Cold & Hot Water system Network & sewage drain system of Restaurant Building in Baghdad for Ministry of Interior and follow-up. W. Design of Cold & Hot Water system Network & sewage drain system of Multi Purpose Building In Al-Najaf for Ministry of Youth & Sport. X. Checking and endorsement the design of The sport city of Al-kute designed by AlRashed company for the Ministry of

	sport. Y. Work with group to Design and check a Network of the storm sewer System and Sewer System of Oil products Distribution Company in al Dora for the Ministry of Oil . Z. Design of Cold & Hot Water system Network & sewage drain system of site no.11 / administration building for Ministry of Interior. AA. Design of Cold & Hot Water system Network & sewage drain system of Police Head Quarter Site 1 – Baghdad for Ministry of Interior BB. Design of Cold & Hot Water system Network & sewage drain system of Site No. 11 / Administration Building for Ministry of Oil CC. Design of Cold & Hot Water system Network & sewage drain system of Namab Bulk Fuel Storage Facility for Republic of Iraq DD. Design of Cold & Hot Water system Network & sewage drain system of Operation Theaters - Private Nursing House for Ministry of Health . EE. Design of Cold & Hot Water system Network & sewage drain system of Bilat Al -Shuhada Project for Ministry Of Youth & Sport FF. Design of Cold & Hot Water system Network & sewage drain system of Compound Culture Offices-Basrah , Music And Art Building – Baghdad & Center In Mahmodia for Ministry Of Culture GG. Design of Cold & Hot Water system Network & sewage drain system of Children's Culture House for Ministry Of Culture. HH. Checking and endorsement the design of stadium cap 5000 person in Al Shaalh and Al Shaabe region for the Baghdad Municipality. II. Design of Cold & Hot Water system Network & sewage drain system for the building of Ministry of Interior. JJ. Work with group to Design Infrastructure Network (water and Fir Fighting ,Storm and Sewage Network)for Karbala Air Port KK. Work with group to Design Cold & Hot Water system, Fire Fighting System , sewage and Storm drain system of Four building for Karbala Air Port

	LL. Work in privet sector; achieved the following: **MM.** Design of Cold & Hot Water system Network & sewage drain system of Al Maha stores Complex **NN.** Design of Water system Network & sewage drain system for Housing Project in Al Samawa .and follow-up. **OO.** Design of Water system Network & sewage drain system for Residential Complex Of Sabaa Albour in Baghdad and follow-up. PP. Design of Cold & Hot Water system Network & sewage drain system of Park and Mall AL-Elwia club QQ. Design and check a Network of the Sewage sewer System and storm sewer system network for Residential Complex in thi Qar . RR. Design of Cold & Hot Water system Network & sewage drain system for the building of Al Ain Foundation for Social Welfare SS. Design of Cold & Hot Water system and Fire Fighting Network , sewage and Storm drain system for the building in EBS OILFIELD PROJECT TT. Design of Cold & Hot Water system and Fire Fighting Network , sewage and Storm drain system for the building Dog Kennel Construction at BDSC UU. Design Fire Fighting System Network for a Patrol Station in EBS OILFIELD PROJECT VV. Design Cold & Hot Water system, Fire Fighting System , sewage and Storm drain system of Five building for Ashur University in Baghdad WW. Design Infrastructure Network (water and Fir Fighting ,Storm and Sewage Network)for Ashur University in Baghdad. XX. Design Cold & Hot Water system, Fire Fighting System, sewage and Storm drain system of Asia Hospital building in Baghdad . YY. **Lecture in the University of Al-Nahrain since 2008; Teaching the following**: ZZ. Building Service in Architecture Engineering department AAA. AutoCAD in Mechanical , Electrical Engineering department BBB. Drawing Engineer in Mechanical, Electrical Engineering department. CCC. Fluid Mechanics in Civil Engineering department.

	DDD. Building Service in Civil Engineering department. EEE. Environmental Engineer in Civil Engineering department.
Computer Experience	• MS Office (Word , Excel ,PowerPoint) • AutoCAD • Water Supply system design and analysis Software (Pipes ++) • Water CAD Software
Memberships	• Iraqi Engineers Union /1999

Curriculum vitae

Zena R. Aljazaeri

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PERSONAL INFORMATION

- Date of Birth: Dec-21-1980 Marital Status: Married Nationality: Iraqi

EDUCATION

- 2013-2016 **Ph. D.** in Civil Engineering
  Missouri University of Science and Technology (MST), MO, **US**, **GPA: 4.0**
  Dissertation titled: **Rehabilitation and Strengthening of Reinforced Concrete Members Using a Fiber Reinforced Cementitious Matrix Composite**
- 2012-2013 Intensive English Program
  Missouri University of Science and Technology), MO, US
- 2001-2004 **MSc.** in Civil Engineering/ Structural Engineering
  Nahrain University/ Baghdad/Iraq, **Grade: 84.7%**
  Thesis titled: **Bending Moment Influence Surfaces for Rectangular Concrete Plates Simply Supported at Three Edges and Built-in at the Fourth Edge.**
- 1998-2001 **BSc.** in Civil Engineering
  Nahrain University/ Baghdad/Iraq, **Grade: 77%,** 2nd out of 14 graduate.

WORK EXPERIENCE

- 2017- Continue Lecturer, Civil Engineering Department, Full time paid
  College of Engineering /Nahrain University/Baghdad/Iraq
- 2006 -2012 Assistant lecturer, Civil Engineering Department, Full time paid
  College of Engineering /Nahrain University/Baghdad/Iraq
- 2006 -2012 Structural engineer, Part time paid
  Engineering Consultancy Bureau/Nahrain University/ Baghdad/Iraq
- 2005-2006 Structural engineer, Full time paid
  Engineering Consultant Group Company/Baghdad/Iraq
- 2004-2005 Structural engineer, Full time paid
  Engineering Consultancy Bureau/Nahrain University/ Baghdad/Iraq

PROFESSIONAL EXPERIENCE

- Analysis and design of multi-story reinforced concrete buildings.
- A quantity Surveyor Engineer for Hadeetha Diesel Engine Project.
- Analysis and design of Agricultural Technical Training & Competence Center in Al-Muthana.
- Checking and endorsement the design of Sharq Dijlah Water Treatment Plants Phase II by Parsons Company.
- A supervisor member on the construction of Steel Structural Schools.
- Checking and endorsement the design, and Supervisions on the construction of Al-Rasheed Water

Treatment Plants Phase I designed by Binne & Partners.

ACADIMIC EXPERIENCE

- Teaching undergraduate course/ Engineering Analysis (third level) at Civil Eng. Dept. for four years,
- Teaching undergraduate courses/ Theory of Structure (fourth level) and Surveying (second level) at Architectural Eng. Dept. for two years,
- Supervise on projects for undergraduate students,
- Teaching graduate course/Technical English at different Engineering Dep
- Member in examination committee and doing administrative works in Civil Eng. Dept.

Currently

❖ Teaching undergraduate course/RC concrete design /fourth level at Civil Eng. Dept.

❖ Teaching undergraduate course/Engineering mathematics /third level at Civil Eng. Dept.

PERSONAL SKILLS

- **STAAD Pro.**
- **ANSYS**
- **AutoCad**
- **MATLAB**
- **SAP**
- **Abaqus**

HONORS AND AWARDS

- 2010 Appraising of efforts from President of Nahrain University/Iraq
- 2010 Thanking for sincerity and devotion performance of works in project of building (130) school in Alahwar provinces from Minister of State/Iraq
- 2010 Thanking for hardworking in examination committee from Dean of College of Engineering Nahrain University/Iraq
- 2015 **Second place** in Student Poster Competition, Transportation Infrastructure Conference, St. Louis University Campus, Missouri, US.
- 2016 **Second place** in Graduate Research Showcase, Havener Center, MST University, US.
- 2016 **Second place** in Academy of Civil Engineers Poster Competition, MST University, US.
- 2016 Zena R. Aljazaeri and John J. Myers, ‘‘ Strengthening of Reinforced Concrete One-way Slabs for Flexure using Composite Materials: Evaluation of Different Composite Materials’’, **Outstanding paper** in the Fourth International Conference on Sustainable Construction Materials and Technologies (SCMT4), Las Vegas, USA.

PUBLICATIONS

- Zena Aljazaeri and Sabah Rezouki (2004),” **Bending Moment Influence Surfaces for Rectangular Concrete PlateSimply Supported at Three Edges and Built-in at the Fourth Edge**.” Journal of Engineering, Baghdad University Vol.16, No.2, PP.4795-4820.
- Zena Aljazaeri and Sabah Rezouki,”**Effect of Poisson’s ratio on bending moment influence surfaces for rectangular plates simply supported at three edges and built-in at the fourth edge**.” First Middle East International Conference on Advances in Civil, Mechanical and Material Engineering/Amman-Jordon/10-13 May-2005.

- Zena R. Aljazaeri and John J. Myers, ”**Fatigue and Flexural Behavior of Reinforced Concrete Beams Strengthened with a Fiber Reinforced Cementitious Matrix.’’** Advanced Composites in Construction **(ACIC)** Conference, Chesterfield, UK, 2015.

PUBLICATIONS

- Zena R. Aljazaeri and John J. Myers, **“Strengthening of Reinforced Concrete Beams in Shear with Fiber Reinforced Cementitious Matrix.’’**Second International conference on Performance-based and Life-cycle structural Engineering **(PLSE)**, AU, Dec 9-11, 2015.
- Zena R. Aljazaeri and John J. Myers, (2016) ”**Fatigue and Flexural Behavior of Reinforced Concrete Beams Strengthened with a Fiber Reinforced Cementitious Matrix.”** Journal of Composites/ASCE, 04016075.
- Zena R. Aljazaeri and John J. Myers, **“ Strengthening of Reinforced Concrete One-way Slabs for Flexure using Composite Materials: Evaluation of Different Composite Materials”,** The Fourth International Conference on Sustainable Construction Materials and Technologies **(SCMT4)**, Las Vegas, USA, August 7 to 11, 2016.
- Zena R. Aljazaeri and John J. Myers, **“ Environmental Effects on the Durability Performance of FRCM Composite Bonded to Concrete “**, 5th International Conference on Durability of Fibre Reinforced Polymer (FRP) Composites for Construction & Rehabilitation of Structures **(CDCC)**, Sherbrooke, QC, CANADA, July 19-21, 2017.
- Zena R. Aljazaeri and John J. Myers, **“ Strengthening of Reinforced-Concrete Beams in Shear with a Fabric-Reinforced Cementitious Matrix ”,** Journal of Composites/ASCE, 04017041.
- Zena R. Aljazaeri , Micheal Janke and John J. Myers, **“ Experimental Investigation on Anchorage Systems for Enhancing the Mechanical Performance of FRCM Composites in Retrofitting RC Structural Beams ”,** Advanced Composites in Construction **(ACIC)** Conference, 5th - 7th Sep 2017, University of Sheffield, UK.
- Zena R. Aljazaeri and John J. Myers ,” **Flexure Performance of RC One-Way Slabs Strengthened with Composite Materials** ”, Journal of materials in civil engineering, 2018, 30(7): 04018120.
- Hayder H. Alghazali, Zuhair K. Al-Jaberi, Zena R. Aljazaeri, John J. Myers, ” **Structural Performance of Severely Damaged Reinforced Concrete Beams after SRP Repair ”,** Advanced materials letters, Vol. 9, Nov 2018,789-795.
- Zena R. Aljazaeri, Micheal A. Janke, and John J. Myers, (2019) “**A novel and effective anchorage system for enhancing the flexural capacity of RC beams strengthened with FRCM composites**.” Composite structures, Vol. 210, P20-28.
- Alghazali, H.H., Aljaberi, Z.K., Aljazaeri, Z.R., Myers, J.J. “**Behavior of Full-Scale Damaged Beams Repaired using a Steel Reinforced Polymer (SRP) Technique**,” American Concrete Institute (ACI) Special Publication 331, Symposium Volume-Durability of Concrete Structures Incorporating Conventional and Advanced Materials, Farmington Hills, MI, SP-331-8, March 2019, pp. 122-135.
- Hayder H.Alghazali, Zena R.Aljazaeri, John J.Myers, (2020). “**Effect of accelerated curing regimes on high volume Fly ash mixtures in precast manufacturing plants.**” Cement and Concrete Research, Volume 131, May 2020, 105913.
- Zena Aljazaeri, Hayder H. Alghazali, and John J. Myers. (2020). “**Effectiveness of Using Carbon Fiber Grid Systems in Reinforced Two-Way Concrete Slab System,**” ACI/Structural Journal, Vol. 117, No. 2, March 2020: 81-89.
- Hussein K Al-Qabbani1, Zena R Aljazaeri and Laith K Al-Hadithy. (2021) “**A state of the art review of fiberless and steel fiber reinforced high strength concrete columns behavior under various loadings**,’’ 2nd International Conference for Civil Engineering Science, Journal of Physics: Conference Series ,1895, 012050, IOP Publishing doi:10.1088/1742-6596/1895/1/012050.

- Zena R. Aljazaeri, Hussein K Al-Qabbani and Laith Khalid Al-Hadithy. (2021) "**Efficient use of steel fiber in high-strength reinforced concrete columns**," International Journal of Advanced Technology and Engineering Exploration, Vol 9(88): 2394-5443 ISSN (Online): 2394-7454 http://dx.doi.org/10.19101/IJATEE.2021.875201.

- Z. R. Aljazaeri and Z. Al-Jaberi, (2021) **"Numerical Study on Flexural Behavior of Concrete Beams Strengthened with Fiber Reinforced Cementitious Matrix Considering Different Concrete Compressive Strength and Steel Reinforcement Ratio, "**international Journal of Engineering, Vol.34, No.4, 793-802.
- Zuhair Al-Jaberi, Zena Al-Jazaeri and Rana Mahdi. (2022) **"Utilizing Underwater FRP System for Hydraulic Structures Application, "** IOP Conference Series: Earth and Environmental Science, Volume 1120, Water Resources in Iraq: Perspectives and Prognosis (ICWRPP 2022) 01/10/2022 - 04/10/2022 Sulaimani, Iraq, **DOI** 10.1088/1755-1315/1120/1/012046 .
- Noor AL MustafaA. Rahima and Z. R. Aljazaeri, (2022) **"Structural Modeling of High strength Reinforced Concrete Columns with Steel Fiber under Different Loading Conditions,"** NeuroQuantology, Volume 20 Page 2145-2169, doi: 10.14704/nq.2022.20.10.NQ55186.

REFRENCES

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- Dr. Ihsan Ali Al-Shaarbaf — **Email:** ishaarbaf@yahoo.com
  Professor in Civil Dep./Nahrain University — **Contact Number**: +964 7702411088
- John J. Myers, Advisor for Ph.D — **Email:**JMyers@mst.edu
  Professor, Missouri University of Science and Technology — **Contact Number:** (573) 578-5821
  Associate Dean for Academic Affairs, College of Engr. & Computing
  Director, Structural Engineering Research Laboratory

Curriculum Vitae

Name:	Raid Ahmed Daud
Date & Place of Birth:	9-6-1981 Baghdad
Address:	Iraq-Baghdad
Mobil No:	009647733537489
Family status:	Married
Nationality:	Iraqi
Sex / Gender:	Male
E-Mail:	raad_alz@yahoo.com

Education:

Year	Education / university or college name and the place
2002	B.Sc. Degree in Civil engineering / Al-Nahrain university / college of engineering /Baghdad-Iraq
2005	M.Sc. Degree in Structural engineering / Al-Nahrain university / college of engineering /Baghdad-Iraq
2015	PhD Degree in Structural engineering/ The University of Manchester/ School of Mechanical, Aerospace and Civil Engineering/ Manchester-United Kingdom

***Professional Career / Professional Experience*:**

01.2006 – 04.2011	Lecturer in civil engineering department of Al-Nahrain university
12.2008- 04.2011	Quality Assurance Engineer and supervisor in the Consulting Bureau of Al-Nahrain University (part time)
03-2016-Till now	Lecturer in civil engineering department of Al-Nahrain university

Languages:

Arabic	Mother Tongue
English	Very Good 'Read, Write and Conversation

Programs:

Microsoft Office

Simulation Software-ABAQUS
Simulation Software - ANSYS
Mathematica
AutoCAD

Skills

Finite Element Analysis and modelling

Research

Data Analysis

Construction

Statistics

University Teaching

Damage Mechanics

Applied Mechanics

Nonlinear analysis

Publications:

1) Daud, R. A. 2005. Nonlinear Finite Element Analysis of Steel Fibre Reinforced Concrete Beams subjected to cyclic loads, M.SC dissertation- Al-Nahrain university, Baghdad/Iraq.
2) Daud, R. A., Cunningham, L. S. & Wang, Y. C. 2015. Static and fatigue behaviour of the bond interface between concrete and externally bonded CFRP in single shear. *Engineering Structures,* 97**,** 54-67.
3) Daud, R. A., Cunningham, L. S. & Wang, Y. C. 2015. Non-linear FE Modelling of CFRP Strengthened RC Slabs under Cyclic Loading. *Athens Journal of Technology & Engineering.* Volume 2, Issue 3.
4) Daud, R. A., Cunningham, L. S. & Wang, Y. C. 2015.Numerical Study of Effective Bond Length for Externally Bonded CFRP Plate under Cyclic Loading. Proceedince of the 23rd UK Conference of the Association for Computational Mechanics in Engineering.Swansea: University of Swansea: 359-362.
5) Daud, R. A. 2015. Behaviour of Reinforced concrete Slabs Strengthened Externally with Two-Way FRP Sheets Subjected to Cyclic loads. Ph d Thesis – The University of Manchester, United Kingdom. Examiners: Dr Antony Darby & Dr Adrian Bell.
6) *Daud, R. A., Cunningham, L. S. & Wang, Y. C. 2016. New model for post-fatigue behaviour of CFRP to concrete bond interface in single shear. Composite structures, 163, 63-76.*

Curriculum Vitae

Name:	Raid Ahmed Daud
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Sex / Gender:	Male
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Education:

Year	Education / university or college name and the place
2002	B.Sc. Degree in Civil engineering / Al-Nahrain university / college of engineering /Baghdad-Iraq
2005	M.Sc. Degree in Structural engineering / Al-Nahrain university / college of engineering /Baghdad-Iraq
2015	PhD Degree in Structural engineering/ The University of Manchester/ School of Mechanical, Aerospace and Civil Engineering/ Manchester-United Kingdom

***Professional Career / Professional Experience*:**

01.2006 – 04.2011	Lecturer in civil engineering department of Al-Nahrain university
12.2008- 04.2011	Quality Assurance Engineer and supervisor in the Consulting Bureau of Al-Nahrain University (part time)
03-2016-Till now	Lecturer in civil engineering department of Al-Nahrain university

Languages:

Arabic	Mother Tongue
English	Very Good 'Read, Write and Conversation

Programs:

Microsoft Office

Simulation Software-ABAQUS
Simulation Software - ANSYS
Mathematica
AutoCAD

Skills

Finite Element Analysis and modelling

Research

Data Analysis

Construction

Statistics

University Teaching

Damage Mechanics

Applied Mechanics

Nonlinear analysis

Publications:

1) Daud, R. A. 2005. Nonlinear Finite Element Analysis of Steel Fibre Reinforced Concrete Beams subjected to cyclic loads, M.SC dissertation- Al-Nahrain university, Baghdad/Iraq.
2) Daud, R. A., Cunningham, L. S. & Wang, Y. C. 2015. Static and fatigue behaviour of the bond interface between concrete and externally bonded CFRP in single shear. *Engineering Structures,* 97**,** 54-67.
3) Daud, R. A., Cunningham, L. S. & Wang, Y. C. 2015. Non-linear FE Modelling of CFRP Strengthened RC Slabs under Cyclic Loading. *Athens Journal of Technology & Engineering.* Volume 2, Issue 3.
4) Daud, R. A., Cunningham, L. S. & Wang, Y. C. 2015.Numerical Study of Effective Bond Length for Externally Bonded CFRP Plate under Cyclic Loading. Proceedince of the 23rd UK Conference of the Association for Computational Mechanics in Engineering.Swansea: University of Swansea: 359-362.
5) Daud, R. A. 2015. Behaviour of Reinforced concrete Slabs Strengthened Externally with Two-Way FRP Sheets Subjected to Cyclic loads. Ph d Thesis – The University of Manchester, United Kingdom. Examiners: Dr Antony Darby & Dr Adrian Bell.
6) *Daud, R. A., Cunningham, L. S. & Wang, Y. C. 2016. New model for post-fatigue behaviour of CFRP to concrete bond interface in single shear. Composite structures, 163, 63-76.*

Curriculum Vitae

Name:	Sultan Ahmed Daud
Date & Place of Birth:	9-6-1981 Baghdad
Address:	Iraq-Baghdad
Mobil No:	009647736604828
Nationality:	Iraqi
Sex / Gender:	Male
E-Mail:	sultan.daud@eng.nahrainuniv.edu.iq

EDUCATION

- **BSC IN CIVIL ENGINEERING, AL-NAHRAIN UNIVERSITY**

  Baghdad, Iraq | 2002

- **MSC IN STRUCTURAL ENGINEERING, AL-NAHRAIN UNIVERSITY**

  Baghdad, Iraq | 2005

- **PHD IN STRUCTURAL ENGINEERING, UNIVERSITY OF LEEDS**

  Leeds, United Kingdom | 2017

WORK EXPERIENCE

LECTURER IN CIVIL ENGINEERING & HEAD OF ALUMNI UNIT, AL-NAHRAIN UNIVERSITY

2017-Present & 2006-2012

Languages:

Arabic	Mother Tongue
English	Very Good 'Read, Write and Conversation

PROGRAMS

- Microsoft Office
- Simulation Software: Midas FEA & Diana FEA
- MATLAB/AutoCAD
- Etabs
- Safe

SKILLS

- Proficient in interpreting architectural & civil drawings
- Foreign Languages
- Highly adaptable to harsh conditions & long hours
- Survival skill trained - including compass & GPS

Publications:

1. S. A. Daud., JP. Forth , N. Nikitas. Time Dependent Behaviour of Reinforced Concrete Beams under Sustained and Repeated Loading. World Academy of Science and Technology. Proceedince of the 17th International conference. Journal of Civil and Environmental Engineering Vol:9, No:10, 2015. Chicago, United States of America
2. S. A. Daud., JP. Forth , N. Nikitas. Time Dependent Behaviour of Reinforced Concrete Beams under Sustained loading. Proceedince of the 9th International conference, 2016. Dundee, United Kingdom.
3. S. A. Daud., JP. Forth, N. Nikitas.2018. Time-dependent behaviour of cracked, partially bonded reinforced concrete beams under repeated and sustained loads. *Engineering Structures,* Vol 163, pp, 267-280. 2018.
4. A. A. Al-Azzawi, R. A. Daud, S. A. Daud. 2020. Behaviour of tension lap spliced sustainable concrete flexural members. *Advances in Concrete. Constriction.,* 9 (1) (2020)
5. R. A. Daud, S. A. Daud and A. A. Al-Azzawi. 2020. Tension stiffening evaluation of steel fibre concrete beams with smooth and deformed reinforcement. J*ournal of King Saud University – Engineering Sciences.*, doi.org/10.1016/j.jksues.2020.03.002

6. A. S. Yasun and S. A. Daud. 2020. Using some of Microsoft Office Excel Functions to Compute Soil Engineering Parameters Based on Raw Results of Laboratory Tests. *Key Engineering Material.* Vol 857. PP, 273-282.
7. S. A. Daud, M. H. Al-Allaf, O. K, Fayadh, R. A. Daud and A. A. Al-Azzawi. 2020. Bonds Stress Assessment of Corroded and Un-Corroded Reinforcement Inside the Concrete. *Solid State Technology.* Vol 36. PP. 912-919.
8. S. A. Daud, R. A. Daud and A. A. Al-Azzawi. 2020. Behaviour of Reinforced Concrete Solid and Hollow Beams having Additional Reinforcement in the Constant Moment Zone. *Ain Shams Engineering Journal* https://doi.org/10.1016/j.asej.2020.07.017
9. NS Hussein and SA Daud., Cracks Performance of Lightweight Concrete Beams. Kalahari journals Vol 7 Iss 1, Dec 2020
10. Daud, Harbi A., Daud, S. A., AL-Azzawi, Adel A., Thermal Behaviour of Hollow and Solid Steel Beams with Different Boundary Conditions. *Computer Assisted Methods in Engineering and Science*, [S.l.], oct. 2021.

السيرة الذاتية للتدريسيين في جامعة النهرين

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(jabbar.h.al-baidhhani@nahrainuniv.edu.iq) جبار حمود عبد النبي البيضاني -تسجيل الخروج

معلومات باللغة العربية

*الاسم	جبار حمود عبدالنبي البيضاني
*أخر شهادة	دكتوراه
*اللقب العلمي	أستاذ
*الجنس	ذكر
*سنة الميلاد	1965
*الدولة	العراق
*التخصص العام	هندسة الموارد المائية
*التخصص الدقيق	هندسة البيئة
*مكان العمل	كلية الهندسة
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اللغات الاخرى	الانكليزية
صورة شخصية	Choose File No file chosen

معلومات باللغة الانكليزية

Full Name*	Jabbar H.Al-Baidhhani
Occupation	Faculty Member
Major*	Water Resources Engineering
Specialty*	Environmental Engineering

Other Languages	English

☐ اتعهد بصحة جميع المعلومات المدخلة في الحقول اعلاه واتحمل كافة التبعات الادارية والقانونية خلاف ذلك.

تحديث الغاء

السيرة الذاتية للتدريسيين في جامعة النهرين

عربي | English

(jabbar.h.al-baidhhani@nahrainuniv.edu.iq) جبار حمود عبد النبي البيضاني- تسجيل الخروج

معلومات باللغة العربية

*الاسم	جبار حمود عبدالنبي البيضاني
*أخر شهادة	دكتوراه
*اللقب العلمي	أستاذ
*الجنس	ذكر
*سنة الميلاد	1965
*الدولة	العراق
*التخصص العام	هندسة الموارد المائية
*التخصص الدقيق	هندسة البيئة
*مكان العمل	كلية الهندسة
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*اللغة الام	العربية
اللغات الاخرى	الانكليزية
صورة شخصية	Choose File No file chosen

معلومات باللغة الانكليزية

Full Name*	Jabbar H.Al-Baidhhani
Occupation	Faculty Member
Major*	Water Resources Engineering
Specialty*	Environmental Engineering

Other Languages	English

اتعهد بصحة جميع المعلومات المدخلة في الحقول اعلاه واتحمل كافة التبعات الادارية والقانونية خلاف ذلك.

تحديث الغاء

Curriculum Vitae

Hiba Imad Abbas

Assist lecturer
Department of civil Engineering
Al-Nahrain University
…… post address ……
E-mail: hiba.i.jalil@nahrainuniv.edu.iq
Phone: 07708868891

Photo
اختيارية

Birth date: 4-4-1984
Place of birth: Baghdad
Citizenship: Iraqi
Gender: female
Marital Status: Married
Languages: Arabic - English
Computer Skills: I have experience in the following software:

- MS office 2010 (Word – Excel – Power point)

- AutoCAD.

EXPERTISE

- Work in Al-Nahrain University as a lecturer since 2008.
- Work in Consulting Engineering Bureau of Al-Nahrain University.

EDUCATION

M.S., Civil Engineering, Al-Nahrain University, Iraq, 2008.
B.S., Civil Engineering, Al-Nahrain University, Iraq, 2005.

PROFESSIONAL APPOINTMENTS

- Assistant Lecturer , 2008

RESEARCH GRANTS AND CONTRACTS

1.Ihsan Al-Shaarbaf and Hiba Abbas. (2013) "*Nonlinear Finite Element Analysis of Prestressed Concrete Box Section Beams*." Alnahrain University College of Engineering Journal, Vol. 16, No. 2,pp.156-167.

2. Hanadi Naji, Shaymaa Abdulrahman and Hiba Abbas. 2011 " Shear Behavior of RC Beams Strengthened with Varying Types of FRP Materials Using Finite Element Analysi ." Journal of Engineering and Development, Vol. 15, No. 1,pp.183-204.

3. Hussam Risan, Omar Farhan and Hiba Abbas. 2016 " Numerical Model Analysis of Reinforced Concrete Slab with Operning."

المؤتمر العلمي الرابع(مواد البناء ومتطلبات التصميم لمقاومة الزلازل).

4. Adel A Al-Azzawi and Hiba Emad, 2020 "Numerical analysis of nonhomogeneous and nonprismatic members under generalised loadings", Materials Science and Engineering.

Undergraduate Research Assistants

- **Several researches.**

CURRICULUM VITAE

PERSONAL INFORMATION

Name and Surname: Ahmed Abdalhafedh Mustafa AL-SHAAR

Nationality: IRAQI

Birth place and date: Baghdad / IRAQ – January 01,1977

Marital status: Married

Phone number: 07727707224

Email: ahmedcst77@gmail.com

EDUCATION

	Graduate School	Year
Doctorate	Civil Engineering Department, College of Engineering, Gaziantep University, Gaziantep, TURKEY	2018
Master	Civil Engineering Department, College of Engineering, AL-Nahrain University, Baghdad, IRAQ	2000
Bachelor	Civil Engineering Department, College of Engineering, AL-Nahrain University, Baghdad, IRAQ	1997

ACADEMIC EXPERIENCE

	Place	Enrollment
2019 - Present	Civil Engineering Department, College of Engineering, AL-Nahrain University, Baghdad, IRAQ	Lecturer
2007-2019	Civil Engineering Department, College of Engineering, AL-Nahrain University, Baghdad, IRAQ	Assistant Lecturer

PUBLICATIONS

AL-Shaar, A. A., & Göğüş, M. T. (2018). Flexural behavior of lightweight concrete and self-compacting concrete-filled steel tube beams. *Journal of Constructional Steel Research*. **149**, 153-164.

AL-Shaar, A. A., & Göğüş, M. T. (2018). Performance of Retrofitted Self-Compacting Concrete-Filled Steel Tube Beams Using External Steel Plates. *Advances in Materials Science and Engineering*. **2018**.

AL-Eliwi, B. J. M., Ekmekyapar, T., Faraj, R. H., Göğüs, M. T., & **AL-Shaar, A. A. M.** (2017). Performance of lightweight aggregate and self-compacted concrete-filled steel tube columns. *Steel and Composite Structures*. **25(3)**, 299-314.

Practical Experience:

1. I am a member of the Iraqi engineering union since 1998 till now (record no.85210).
2. In January 2000, I began to work with the consultant engineering bureau of Al-Nahrain University as an assistant resident engineer supervising the construction of the administration building of the Islamic university in Baghdad.
3. In June 2001, I was assigned as an assistant resident engineer at the new doctors resident building constructed at Al-Kadhimia teaching hospital in Baghdad until October 2001.
4. In October 2001, I was assigned as a resident engineer at the soil investigation and treatment project in the petrochemical general company in Al-Qaim at Al-Anbar governorate until April 2001.
5. In May 2001, I was a member of a consulting group checking and approving the structural designs and then supervising the construction of the Isomerization unit in Baji Refineries at Salahuddin governorate until March 2003.
6. In February 2002, I was a member of a consulting group checking the structural designs for the North Company for natural gas in Kirkuk governorate until March 2003.

7. In May 2002, I was a member of a consulting group supervising the construction of the Hydro-Electrical station of Al-Adaim dam until March 2003.
8. In December 2002, I was a member of a consulting group supervising the soil investigation and treatment (soil injection) (first stage) of Haditha Diesel Engine Electrical Plant Project until March 2003, and also supervising the (second stage) of the same project in November 2003.
9. In May 2004, I was a member of a consulting group supervising the construction of the engine foundation blocks of the five electrical generators at Haditha Diesel Engine Electrical Plant Project.
10. In December 2004, I was a member of a consulting group (as a part of contract between Consulting Engineering Bureau of Al-Nahrain University and the French Company S.M.E.T PIELSTICK) supervising the construction of the Haditha Diesel Engine Electrical Plant Project until February 2007.
11. In January 2010, I was a member of a consulting group supervising the construction of the Steel Structure Schools in Baghdad city, until April 2010.
12. In September 2011, I was a member of a consulting group supervising the construction of Al-Qudus Gas Turbines Power Plant in Baghdad city.

FOREIGN LANGUAGE

English

HOBBIES

1. Reading.
2. Football.

C.V. Dr. Musab A.Q. Al-Janabi

Curriculum Vitae (March 2024)

Full Name: Musab Aied Qissab Al-Janabi, Ph.D., C. Eng, A.M. ASCE
Date of Birth: 12/9/1979
Nationality: Iraq
Email: musabaq79@gmail.com
musab.a.jindeel@nahrainuniv.edu.iq
Phone No.: 009647903476127
Address: Baghdad-Iraq
Postal Code: (P.O. Box No. 64040) Al-Nahrain University/Baghdad-Iraq

Qualifications

Ph.D.: Structural Engineering, University of Baghdad-Iraq (2011) (rank No.1)

(Ph.D. thesis title: Static and Dynamic Behavior of Spliced Steel Girders)

M.Sc.: Structural Engineering, University of Babylon-Iraq (2003) (rank No.1)

(M.Sc. thesis title: Optimal Design of Reinforced Concrete Space Structures Based on Nonlinear Analysis)

B.Sc.: Civil Engineering, University of Babylon-Iraq (2001) (rank No.1)

Associate Member of the American Society of Civil Engineers (ASCE) (ID No 9136129). (2012-Present)

Academic Awards

1. The president of the republic of Iraq award in (30-09-2001) for achieving the rank No.1 allover top Iraqi graduates in Civil Engineering from all Universities.
2. Awards from several Iraqi ministers including the Minister of Higher Education in Iraq in (2001) for achieving the rank No. 1 allover Iraqi graduates in Civil Engineering from all Universities at the B.Sc. level.
3. More than 30 certificates of appreciation from different sources in the field of higher education.

Academic Positions

- Assistant Lecturer, Department of Civil Engineering, University of Babylon (2005-2011)
- Lecturer, Department of Civil Engineering, University of Babylon (2011-2012)
- Lecturer, Department of Civil Engineering, AL-Nahrain University (2012-2015)
- Lecturer, Department of Civil Engineering, AL-Nahrain University (2012-2015)
- Assistant Professor of Structural Engineering, Al-Nahrain University (2015-2021)
- Postdoctoral Research Fellow, Department of Civil Engineering, Middle East Technical University(METU), Turkey, (2018-2020)
- Professor of Structural Engineering, Al-Nahrain University (2021-Present)

Academic Appointments

- Registrar of College of Engineering / Al-Nahrain University (2012-2013)
- Deputy Dean of College of Engineering / Al-Nahrain University (2013- 2016).
- Director of Engineering Affairs Department / Al-Nahrain University (2016-2017)
- Head of Civil Engineering Department / Al-Nahrain University (March,2018-September,2018)
- Head of Civil Engineering Department/ Al-Nahrain University (2022-

Research interests

- Earthquake Engineering and Structural Dynamics
- Performance-Based Seismic Design
- Design of earthquake-resilient structures.

- Finite Element Analysis of Structures
- Advanced Structural Analysis and Design of Steel Structures
- Nonlinear Behavior of Reinforced Concrete Structures
- Behavior of Concrete Structures Reinforced by Steel Fibers and Carbon Nanocomposites.

Teaching Experience (Courses given)

- Engineering Drawing
- Engineering Mathematics
- Design of Concrete Structures
- Engineering Mechanics (I)
- Engineering Mechanics (II)
- Design of Steel Structures
- Foundations Engineering
- Advanced Structural Design (M.Sc. Structures)
- Advanced Prestressed Concrete Design (Ph.D/Structures)
- Advanced Theory of Plates (Ph.D/Structures)

Publications

1- Sajjad E Rasheed, Duaa Al-Jeznawi, Musab Aied Qissab Al-Janabi, Luís Filipe Almeida Bernardo” Data-Driven Prediction of Maximum Settlement in Pipe Piles under Seismic Loads” *Journal of Marine Science and Engineering*, 12(2), 2024.pp.274. https://doi.org/10.3390/jmse12020274

2- Duaa Al-Jeznawi, IB Mohamed Jais, Musab Aied Qissab Al-Janabi, Saif Alzabeebee, Bushra S Albusoda, Suraparb Keawsawasvong” Scaling effects on the seismic response of a closed-end pipe pile embedded in dry and saturated coarse grain soils” *International Journal of Computational Materials Science and Engineering*, 13(2), 2024.pp. 2350023. https://doi.org/10.1142/S2047684123500239

3- Hasan Ali Abbas, Duaa Al-Jeznawi, Musab Aied Qissab Al-Janabi, Luís Filipe Almeida Bernardo, Manuel António Sobral Campos Jacinto” Exploring Shear Wave Velocity—N_{SPT} Correlations for Geotechnical Site Characterization: A Review” *CivilEng*, 5(1), 2024.pp.119-135. https://doi.org/10.3390/civileng5010006

4- Duaa Al-Jeznawi, Laith Sadik, Musab AQ Al-Janabi, Saif Alzabeebee, Jumanah Hajjat, Suraparb Keawsawasvong” Developing Vs-NSPT Prediction Models Using Bayesian Framework” *Transportation Infrastructure Geotechnology*, 2023.pp.1-22. https://doi.org/10.1007/s40515-023-00353-8

5- Duaa Al-Jeznawi, IB Mohamed Jais, Bushra S Albusoda, Saif Alzabeebee, Musab Aied Qissab Al-Janabi, Suraparb Keawsawasvong” Investigation of the Scale Effect on the Static and Seismic Response of an Opened Ended Pipe Pile” *Transportation Infrastructure Geotechnology*, 2023.pp.1-30. https://doi.org/10.1007/s40515-023-00330-1

6- Hamza Imran, Duaa Al-Jeznawi, Musab Aied Qissab Al-Janabi, Luís Filipe Almeida Bernardo “Assessment of Soil–Structure Interaction Approaches in Mechanically Stabilized Earth Retaining Walls: A Review” *CivilEng*, 4(3), 2023.pp.982-999. https://doi.org/10.3390/civileng4030053

7- Duaa Al-Jeznawi, IB Mohamed Jais, Bushra S Albusoda, Saif Alzabeebee, Musab Aied Qissab Al-Janabi, Suraparb Keawsawasvong “Response of pipe piles embedded in sandy soils under seismic loads” *Transportation Infrastructure Geotechnology*, 2023, pp.1-27. https://doi.org/10.1007/s40515-023-00318-x

8- Maher M. Hassoon, Musab Aied Qissab” Performance of Zero Cement Concrete Synthesized from Fly Ash: A Critical Review” E3S Web of Conferences 437, 04002 (2023) IConGEET2023. https://doi.org/10.1051/e3sconf/202343704002

9- Duaa Al-Jeznawi, Jitendra Khatti, Musab Aied Qissab Al-Janabi, Kamaldeep Singh Grover, Ismacahyadi Bagus Mohamed Jais, Bushra S Albusoda, Norazlan Khalid “Seismic performance assessment of single pipe piles using three-dimensional finite element modeling considering different parameters" *Earthquakes and Structures,* 24 (6), 2023, pp.455-475. https://doi.org/10.12989/eas.2023.24.6.455

10- Musab Aied Qissab Al-Janabi, Elif Müge Ün, Cem Topkaya" Development of a loading protocol for long links in eccentrically braced frames" *Journal of Constructional Steel Research,* Vol.193, 2022.pp.107278. https://doi.org/10.1016/j.jcsr.2022.107278.

11- Elif Müge Ün, Musab Aied Qissab Al-Janabi, Cem Topkaya" Seismic performance evaluation of eccentrically braced frames with long links using FEMA P695 methodology" *Engineering Structures*, Vol.258, 2022.pp. 114104. https://doi.org/10.1016/j.engstruct.2022.114104

12- TY Yang, Muhib Muazzam, Musab Aied Qissab Al-Janabi, Svetlana Brzev" Quantification of energy dissipation demand for buckling-restrained braces" *Soil Dynamics and Earthquake Engineering,* Vol.155, 2022.pp. 107190. https://doi.org/10.1016/j.soildyn.2022.107190

13- TY Yang, S Lepine-Lacroix, JA Ramos Guerrero, JBW McFadden, MAQ Al-Janabi" Seismic performance evaluation of innovative balloon type CLT rocking shear walls" *Resilient Cities and Structures*, Vol 1(1), 2022.pp.44-52. https://doi.org/10.1016/j.rcns.2022.03.004

14- Musab Aied Qissab Al-Janabi, T.Y. Yang" Seismic Performance Assessment of Novel Self-Centering Friction-Based Eccentrically Braced Frames". *Engineering Structures,* Vol.241,2021. pp. 112456. https://doi.org/10.1016/j.engstruct.2021.112456

15- T.Y. Yang, V.K. Boddapati, Musab Aied Qissab Al-Janabi , D.P. Tung." Seismic performance of controlled-rocking concentrically braced frames designed by the equivalent energy procedure". *Engineering Structures,* Vol.237,2021, pp.112209. https://doi.org/10.1016/j.engstruct.2021.112209

16- Musab Aied Qissab Al-Janabi, Cem Topkaya." Seismic performance of eccentrically braced frames designed to AISC341 and EC8 specifications". *Structures,* Vol.29,2021, pp.339-359. https://doi.org/10.1016/j.istruc.2020.11.031

17- T.Y. Yang, J. Neitsch, Musab Aied Qissab Al-Janabi, D.P. Tung, "Seismic performance of eccentrically braced frames designed by the conventional and equivalent energy procedures", *Soil Dynamics and Earthquake Engineering,* Vol 139, 2020,106322. https://doi.org/10.1016/j.soildyn.2020.106322

18- Musab Aied Qissab Al-Janabi, Cem Topkaya." Nonsymmetrical Loading Protocols for Shear Links in Eccentrically Braced Frames". *Earthquake Engineering and Structural Dynamics,* Vol.49, No.1(2020), pp.74-94. https://doi.org/10.1002/eqe.3230

19- Noor A. Khalaf, Musab Aied Qissab, "Behavior of SFRC interior beam-column joints under cyclic loading", *Structural Monitoring and Maintenance*, Vol. 7, No. 3 (2020),pp.167-193. https://doi.org/10.12989/smm.2020.7.3.167

20- Saja Waleed Fathuldeen, Musab Aied Qissab. "Flexural Behavior of RC Beams Strengthened with NSM CFRP Strips under Repeated Loading". *Structural Engineering and Mechanics, Vol 70, No.1* (2019), pp.67-80. https://doi.org/10.12989/sem.2019.70.1.067

21- Musab Aied Qissab, Mohammed Munqith Salman. "Shear Strength of Non-Prismatic Steel Fiber -Reinforced Concrete Beams without Stirrups". *Structural Engineering and Mechanics,* Vol. 67, No. 4 (2018),pp.*347-358.*, https://doi.org/10.12989/sem.2018.67.4.347

22- Musab Aied Qissab, Shaymaa Tareq Abbas." Behaviour of Reinforced Concrete Beams with Multiwall Carbon Nanotubes under Monotonic loading" *European Journal of Environmental and Civil Engineering. Vol.22, No.9(2018),* pp.*1111-1130.* http://dx.doi.org/10.1080/19648189.2016.1232661

23- Musab Aied Qissab. "Flexural Behavior of Laterally Loaded Tapered Piles in Cohesive Soils." *Open Journal of Civil Engineering* 5, no. 01 (2015), pp. 29-38. http://dx.doi.org/10.4236/ojce.2015.51004

24- Musab Aied Qissab. "A New Stiffness Matrix for a 2D-Beam Element with a Transverse Opening." *Open Journal of Civil Engineering* 5, no. 01 (2015), pp.17-28. http://dx.doi.org/10.4236/ojce.2015.51003

25- Musab Aied Qissab Al-Janabi, Thamir K. Mahmoud. "Behavior of Spliced Steel Girders under Static Loading" *Journal of Engineering* 20, No. 10 (2014), pp.93-109. www.iasj.net/iasj?func=fulltext&aId=93554

26- Musab Aied Qissab Al-Janabi, Thamir K. Mahmoud. "Behavior of Spliced Steel Girders under Impact." *Structures Congress 2013: Bridging Your Passion with Your Profession*, pp. 148-160. ASCE. USA. http://dx.doi.org/10.1061/9780784412848.014

27- Musab Aied Qissab. "Exact Stiffness Matrix for Nonprismatic Beams with Parabolic Varying Depth." *Journal of Engineering*, Vol.19, No. 10 (2013), pp.1212-1225. http://www.iasj.net/iasj?func=fulltext&aId=78274

28- Musab Aied Qissab, Balqees Abdul Wahid Ahmed. "Derivation of Stiffness Matrix for a General Two Dimensional Curved Beam Element in General Global Coordinates System" *Journal of Engineering* Vol.14, No. 4 (2008), pp.3165-3178. http://iasj.net/iasj?func=fulltext&aId=24146

Completed M.Sc. Research Projects under My Supervision

1- Shear Resistance of Non-Prismatic High Strength Reinforced Concrete Beams.

2-Fatigue Behavior of Self-Compacting Concrete Beams Strengthened with Carbon Fiber Sheet.

3-Behavior of Reinforced Concrete Beams with Carbon Nanotubes under Monotonic Loading.

4-Shear Strength of Non-Prismatic Steel Fiber Reinforced Concrete Beams without Shear Reinforcement.

5-Behavior of Steel Fiber Reinforced Concrete Beam-Column Joints under Column Removal Scenario Subjected to Cyclic Loading.

6-Behavior of Reinforced Concrete Beams Strengthened with Near-Surface Mounted Carbon Fiber Polymers Under Repeated Loading.

Software Skills

- OpenSees
- ABAQUS, ANSYS, STAAD PRO.
- Programming Language: FORTRAN Power Station, FORTRAN 90

Speaking Language

- Arabic
- English

References

1-Prof.Dr. Cem Topkaya
Professor of Structural Engineering
Department of Civil Engineering
Middle East Technical University
Ankara-Turkey
Email: drctopkaya@gmail.com

2-Prof.Dr. Tony Yang
Professor of Structural and Earthquake Engineering
Department of Civil Engineering
The University of British Columbia
Address: 6250 Applied Science Lane, Vancouver, BC, V6T 1Z4, Canada
E-mail: yang@civil.ubc.ca
Tel: 604-822-3864

C.V. Dr. Musab A.Q. Al-Janabi

3-Prof .Dr. Thamir K. Al-Azawi
Professor of Structural Engineering
College of Engineering
University of Baghdad -Iraq
Email: thamir.azawi@gmail.com
Phone: +9647705319620

CV OF LECT. RUBA H. SAUR

PERSONAL DETAILS

Name : Ruba Hanna Majeed Saur
Nationality: Iraqi
Address: Iraq, Baghdad, Al Nahrain University, College of Engineering, Civil Engineering Department.
E-mail: rubasaur@yahoo.co.uk

ACADEMIC QUALIFICATION

- **July 2016. Master in Civil Engineering**, Emphasis in Geotechnical Engineering, Al Nahrain University, Baghdad, Iraq, Thesis: "SEISMIC BEHAVIOR OF A SOIL-PILE SYSTEM".
- **June 1997. BSc. degree in Civil Engineering**, Al-Nahrain University, Baghdad, Iraq.

EMPLOYMENT SUMMARY

- **Jun. 2016 to present, Al-Nahrain University,** Department of Civil Engineering. Position: Lecturer.

Teaching of the following courses for undergraduate studies:

- Soil Mechanics.
- Soil Mechanics Lab.
- Surveying Lab.

- **Sep. 1999 – Jun. 2016, Al-Nahrain University,** Department of Civil Engineering. Position: Civil Engineer.

Teaching of the following courses for undergraduate studies:

- Surveying Lab.
- Soil Mechanics Lab.
- Concrete & Material Technology Lab.
- Mechanics of Material Lab.
- Auto CAD.

PUBLICATIONS

- **Duaa Al-Jeznawi, Qassun S. Mohammed Shafiqu, and Ruba H. Sa'ur**, 2020, Properties of swelling soil improved using mixture of polyethylene with silica fume and cement kiln dust, AIP Conference Proceedings 2213, 020170 (2020); https://doi.org/10.1063/5.0000224 Published Online: 25 March 2020
- **Ruba H Sa'ur and Qassun S Mohammed Shafiqu**, 2020, Behavior of pile embedded in different soil types under the effect of earthquake, IOP Conf. Series: Materials Science and Engineering 737 (2020) 012085, doi:10.1088/1757-899X/737/1/012085
- **Q. S. MOHAMMED SHAFIQU and R. H. SA'UR** , 2018. BEHAVIOR OF PILED-RAFT FOUNDATION UNDER EARTHQUAKE LOADING IN VARIOUS TYPES OF SOIL .International Journal of Civil Engineering & Technology (IJCIET) - Scopus Indexed.Volume:9,Issue:11,Pages:2770-2781.
- **Qassun S. Mohammed Shafiqu and Ruba H. Majeed Sa'ur,**"Numerical Analysis of a Pile-Soil System Under Earthquake Loading", Al-Nahrain Journal for Engineering Sciences (NJES) Vol.20 No.2, 2017 pp.446-451 Special Issue - Proceedings of the 4th Eng. Conf. (21April 2016, Al-Nahrain Univ., Baghdad, IRAQ).
- **Qassun S. Mohammed Shafiqu and Ruba H. Majeed Sa'ur,**" Data Base for Dynamic Soil Properties of Seismic Active Zones in Iraq", Journal of Engineering, July 2016, Vol. 22, No. 7.
- **Qassun S. Mohammed Shafiqu and Ruba H. Majeed Sa'ur,**" Behavior of piled-raft foundation under earthquake loading in various types of soil", International Journal of Civil Engineering and Technology, November 2018, Vol. 9, No. 11, pp. 2770-2781.

AWARDS, PRIZES AND OTHER RECOGNITIONS

- May 2017. Receiving Al-Nahrain University Prize for Creativity and Excellence 2016 for the best MSc. Thesis (engineering field), the annual celebration of Al Nahrain University Day.

TRAINING COURSES

- 4/9/2016-28/9/2016, Training Course: ' Teaching Methods ', Al-Nahrain University, Iraq.
- 10/3/2013-22/3/2013, Training Course: ' Total Station ES-105 Instrument', Al-Masaha Company, Iraq.
- 23/1/2005-5/2/2005, Training Short Course: 'Water Management, Water Supply, and Planning of Hydraulic Structures', Stuttgart University, Germany.
- July 2004, Computer Training Course, 'Windows XP and office 2003', The Modern Center of Training and Development, Iraq.

PROFESSIONAL ACHIEVEMENTS

- Member of the Iraqi Teachers Union, since 9/3/2006.
- Member of Iraqi University Teachers League since 2004.
- Member of the Iraqi Engineers Union, since 1997.

CV OF LECT. RUBA H. SAUR

PERSONAL DETAILS

Name : Ruba Hanna Majeed Saur
Nationality: Iraqi
Address: Iraq, Baghdad, Al Nahrain University, College of Engineering, Civil Engineering Department.
E-mail: rubasaur@yahoo.co.uk

ACADEMIC QUALIFICATION

- **July 2016. Master in Civil Engineering**, Emphasis in Geotechnical Engineering, Al Nahrain University, Baghdad, Iraq, Thesis: "SEISMIC BEHAVIOR OF A SOIL-PILE SYSTEM".
- **June 1997. BSc. degree in Civil Engineering**, Al-Nahrain University, Baghdad, Iraq.

EMPLOYMENT SUMMARY

- **Jun. 2016 to present, Al-Nahrain University,** Department of Civil Engineering. Position: Lecturer.

Teaching of the following courses for undergraduate studies:

- Soil Mechanics.
- Soil Mechanics Lab.
- Surveying Lab.

- **Sep. 1999 – Jun. 2016, Al-Nahrain University,** Department of Civil Engineering. Position: Civil Engineer.

Teaching of the following courses for undergraduate studies:

- Surveying Lab.
- Soil Mechanics Lab.
- Concrete & Material Technology Lab.
- Mechanics of Material Lab.
- Auto CAD.

PUBLICATIONS

- **Duaa Al-Jeznawi, Qassun S. Mohammed Shafiqu, and Ruba H. Sa'ur**, 2020, Properties of swelling soil improved using mixture of polyethylene with silica fume and cement kiln dust, AIP Conference Proceedings 2213, 020170 (2020); https://doi.org/10.1063/5.0000224 Published Online: 25 March 2020
- **Ruba H Sa'ur and Qassun S Mohammed Shafiqu**, 2020, Behavior of pile embedded in different soil types under the effect of earthquake, IOP Conf. Series: Materials Science and Engineering 737 (2020) 012085, doi:10.1088/1757-899X/737/1/012085
- **Q. S. MOHAMMED SHAFIQU and R. H. SA'UR** , 2018. BEHAVIOR OF PILED-RAFT FOUNDATION UNDER EARTHQUAKE LOADING IN VARIOUS TYPES OF SOIL .International Journal of Civil Engineering & Technology (IJCIET) - Scopus Indexed.Volume:9,Issue:11,Pages:2770-2781.
- **Qassun S. Mohammed Shafiqu and Ruba H. Majeed Sa'ur,**"Numerical Analysis of a Pile-Soil System Under Earthquake Loading", Al-Nahrain Journal for Engineering Sciences (NJES) Vol.20 No.2, 2017 pp.446-451 Special Issue - Proceedings of the 4th Eng. Conf. (21April 2016, Al-Nahrain Univ., Baghdad, IRAQ).
- **Qassun S. Mohammed Shafiqu and Ruba H. Majeed Sa'ur,**" Data Base for Dynamic Soil Properties of Seismic Active Zones in Iraq", Journal of Engineering, July 2016, Vol. 22, No. 7.
- **Qassun S. Mohammed Shafiqu and Ruba H. Majeed Sa'ur,**" Behavior of piled-raft foundation under earthquake loading in various types of soil", International Journal of Civil Engineering and Technology, November 2018, Vol. 9, No. 11, pp. 2770-2781.

AWARDS, PRIZES AND OTHER RECOGNITIONS

- May 2017. Receiving Al-Nahrain University Prize for Creativity and Excellence 2016 for the best MSc. Thesis (engineering field), the annual celebration of Al Nahrain University Day.

TRAINING COURSES

- 4/9/2016-28/9/2016, Training Course: ' Teaching Methods ', Al-Nahrain University, Iraq.
- 10/3/2013-22/3/2013, Training Course: ' Total Station ES-105 Instrument', Al-Masaha Company, Iraq.
- 23/1/2005-5/2/2005, Training Short Course: 'Water Management, Water Supply, and Planning of Hydraulic Structures', Stuttgart University, Germany.
- July 2004, Computer Training Course, 'Windows XP and office 2003', The Modern Center of Training and Development, Iraq.

PROFESSIONAL ACHIEVEMENTS

- Member of the Iraqi Teachers Union, since 9/3/2006.
- Member of Iraqi University Teachers League since 2004.
- Member of the Iraqi Engineers Union, since 1997.

Curriculum Vitae

NAME

First **Zahir** *Middle* **Noori**
Last **M. Taki**

Gender Male **Place of Birth** Baghdad- IRAQ

Date of Birth 1974

Nationality Iraqi

Email: zahir.n.taki@ced.nahrainuniv.edu.iq

Educational Background

Postgraduate Degree

College of Engineering, University of Baghdad.
M.Sc. in Structural Engineering, Sep., 1999.
Thesis Title "Elastic Analysis of Large Steel Ribbed Domes by Grillage Analogy".

Graduate Degree
College of Engineering, University of Baghdad.
B.Sc. in Civil Engineering, 1996. Ranked 6 out of 185 students

Present Job

- Faculty member (Lecturer)- Al-Nahrain University - College of Engineering - Civil Department, since 2013.

Academic Experience

Lecturing the following courses at the College of Engineering, Al-Nahrain University:

Undergraduate Courses

- Structural analysis
- Steel design

- Concrete design
- Engineering Mathematics.
- Numerical analysis
- Computer application (STAAD Pro.)

Computer Skills:

- ETABS
- SAFE
- STAAD Pro
- SAP2000
- Autodesk Land desktop
- Robot
- Prokon
- NASTRAN
- AutoCAD
- 3D Studio MAX
- Microsoft Office Applications in addition to the computer programs language VISUAL BASIC.

Professional Organizations

- Member in Iraqi Engineers Union.

Published Researches:

- Research on Elastic Analysis of Large Steel Ribbed Domes by the Grillage Analogy, 1999 supervised by Prof. Dr. Husain M. Husain.

- Simplified Analysis of Steel Ribbed Domes.

- A comparative study on the design spectra defined by several codes of practice on rc building located in Baghdad city.

- Compression index and compression ratio prediction by artificial neural networks.

- Numerical analysis of reinforced concrete beam strengthened by CFRP subjected to monotonic loading,

- Numerical analysis of reinforced concrete corbel strengthening by CFRP under monotonic loading

- Evaluating Iraqi Modified Asphalt Concrete Moisture Resistance Based on Strength Ratio and Fracture Energy Parameters.

Field Experience

to present 2003

- Consultant engineer in Engineering Consultant Bureau of Al-Nahrain University.
- Consultant engineer in Iraqi Drilling Company (IDC).
- Consultant engineer in Sabaa Bureau for Engineering Consultant.
- Consultant engineer in Dar-Al-KHebra Bureau for Engineering Consultant.
- Designer and an executive engineer in DAAM Co. for Construction & Real estate Investment.

to 2003 2001

- Bridges Designer in the State Corporation of Roads and Bridges, participated in Design of many bridges (Al-Atshan Bridge, Al-Matat Bridge, Al-Beage Bridge, Thowa Bridge, Al-Faihaa Bridge)
- Design and Implementation of different constructional works.

- Lecturer in Architectural Engineering Department/ College of Engineering/Baghdad University, 2000 till 2002 for the following subjects:

Computers (Programs and Languages), Engineering Mathematics, Structural Design and Concrete Design.

Languages:

English – Speaking – Excellent

Reading – Excellent

Writing – Excellent

Arabic – Native language

Curriculum Vitae

NAME

First **Zahir** *Middle* **Noori**
Last **M. Taki**

Gender Male **Place of Birth** Baghdad- IRAQ

Date of Birth 1974

Nationality Iraqi

Email: zahir.n.taki@nahrainuniv.edu.iq

Educational Background

Postgraduate Degree

College of Engineering, University of Baghdad.
M.Sc. in Structural Engineering, Sep., 1999.
Thesis Title "Elastic Analysis of Large Steel Ribbed Domes by Grillage Analogy".

Graduate Degree
College of Engineering, University of Baghdad.
B.Sc. in Civil Engineering, 1996. Ranked 6 out of 185 students

Present Job

- Consultant engineer in Engineering Consultancy Bureau (ECB), Al-Nahrain University.
- Faculty member- Al-Nahrain University - College of Engineering - Civil Department, since 2013.

Field Experience

.

More than twenty years of experience in analysis, design and supervision of building and structures such as high rise buildings, water storage tanks, towers, bridges, hydro power stations, water treatment and sewage projects, diesel power stations, hospitals, factories and mosques.

2003 to present

- Consultant engineer in Engineering Consultant Bureau of Al-Nahrain University.
- Consultant engineer in Iraqi Drilling Company (IDC).
- Consultant engineer in Sabaa Bureau for Engineering Consultant.
- Consultant engineer in Dar-Al-KHebra Bureau for Engineering Consultant.
- Designer and an executive engineer in DAAM Co. for Construction & Real estate Investment.

2001 to 2003

- Bridges Designer in the State Corporation of Roads and Bridges, participated in Design of many bridges (Al-Atshan Bridge, Al-Matat Bridge, Al-Beage Bridge, Thowa Bridge, Al-Faihaa Bridge)
- Design and Implementation of different constructional works.

- Lecturer in Architectural Engineering Department/ College of Engineering/Baghdad University, 2000 till 2002 for the following subjects:
  Computers (Programs and Languages), Engineering Mathematics, Structural Design and Concrete Design.

Academic Experience

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- Engineering Mathematics.
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- Computer application (STAAD Pro.)

Computer Skills:

- ETABS
- SAFE
- STAAD Pro
- SAP2000
- Autodesk Land desktop
- Robot
- Prokon

- NASTRAN
- AutoCAD
- 3D Studio MAX
- Microsoft Office Applications in addition to the computer programs language VISUAL BASIC.

Professional Organizations

- Member in Iraqi Engineers Union.

Published Researches:

- Shear strength prediction of steel fiber reinforced concrete beams without transverse reinforcements

- Punching shear strength of column Footings

- Artificial neural network modeling of the modified hot mix asphalt stiffness using Bending Beam Rheometer

- Research on Elastic Analysis of Large Steel Ribbed Domes by the Grillage Analogy, 1999 supervised by Prof. Dr. Husain M. Husain.

- Simplified Analysis of Steel Ribbed Domes.

- A comparative study on the design spectra defined by several codes of practice on rc building located in Baghdad city.

- Compression index and compression ratio prediction by artificial neural networks.

- Numerical analysis of reinforced concrete beam strengthened by CFRP subjected to monotonic loading,

- Numerical analysis of reinforced concrete corbel strengthening by CFRP under monotonic loading

- Evaluating Iraqi Modified Asphalt Concrete Moisture Resistance Based on Strength Ratio and Fracture Energy Parameters.

Languages:

English – Speaking – Excellent

Reading – Excellent

Writing – Excellent

Arabic – Native language

Dhiaa Al-Tarafany, Ph.D.

Phone: +964-7738213839
Email: dhiaa.m.theeban@nahrainuniv.edu.iq
dhiaa_m@utexas.edu

Area of Expertise:
Structural Engineering

05/06 to present, Lecturer – Al-Nahrain University, Civil Engineering Department

- Courses taught: Reinforced Concrete Design, Steel Design, Structural Analysis, and Programming & Engineering Applications.

Educational and Professional Qualifications:

- Post-Doctorate Fellow, The University of Texas at San Antonio, Civil Engineering/Structural Engineering, August 2017
- Ph.D. The University of Texas at Austin, Civil Engineering/Structural Engineering, August 2016
- M.S.C.E. Al-Nahrain University, Civil Engineering/ Structural Engineering, Baghdad-Iraq, July 2007
- B.S.C.E. Al-Nahrain University, Civil Engineering, Baghdad-Iraq, September 2004

Graduate Studies:

- Ph.D. studies, Prestressed Concrete Girders, Reinforced Concrete Members, Nonlinear Finite Element Analysis, The University of Texas at Austin, Austin Texas, 2011-2016
- M.Sc. studies, Large Deflection of Beams, Al-Nahrain University, Baghdad-Iraq, 2004-2007

Experience:

08/11 to 08/16, Graduate Research Assistant - Ferguson Structural Engineering Laboratory FSEL, UT Austin

- In charge of laboratory and analytical program for: behavior of post-tensioned spliced concrete bridge girders.
- In charge of laboratory and analytical program for: behavior of post-tensioned concrete bridge girders.
- In charge of laboratory and analytical program for: behavior of reinforced concrete panels.
- Use software for complex structural analysis such as ATENA and SAP2000.

07/07 to present, Structural Engineer – Engineering Consultancy Bureau / Al-Nahrain University, Baghdad-Iraq

- Analysis and design of reinforced concrete, steel, and masonry structures.
- Analysis, design, and endorsement of water and sewage treatment plants.
- Construction of reinforced concrete and steel structures.

08/21 to present, Structural Engineer – Kaso Group, Baghdad-Iraq

- Design of high-rise reinforced concrete buildings – Baghdad Marina Residential Complex.
- Consultant for the construction of Baghdad Marina Residential Complex.

Accomplishments:

- Awarded, The University of Texas at San Antonio/Post-doctorate Fellow, 2016-2017.
- Awarded, The Iraqi Prime Minister office/HCED Scholarship for Ph.D. Studies, 2010-2016.
- First place, Al-Nahrain University, Civil Engineering Department, 2004.
- Second place, Al-Nahrain University, College of Engineering, 2004.
- Third Place, Al-Nahrain University, 2004.
- Awarded several prizes from the Minister of Higher Education & Scientific Research, the President of Al-Nahrain University, and the Dean of College of Engineering.

Transferable and Professional Skills:

- Proficient with linear and nonlinear structural analysis and Finite Element Methods software such as ATENA, SAP2000, STAAD Pro., ETABS, SAFE, and Prokon.
- Proficient with computational drawing software such as AutoCAD.
- Grouting training certificate from American Segmental Bridge Institute (ASBI), 2013.
- Fluent in English and Arabic languages.
- Perseverant, with good teamwork skills, reliable and hardworking engineer, with the willingness to teach and train colleagues for the success of the projects.

Professional Organizations and Memberships:

- Member of ACI (American Concrete Institute), 2008 to present.
- Member of the Iraqi Engineers Union, 2005 to present.

Selected Publications:

- Al-Tarafany, Dhiaa (2022) “EVALUATING SHORT AND LONG TERM DEFLECTIONS OF BEAMS USING ACI 318 PROCEDURE”, International Journal on Technical and Physical Problems of Engineering (IJTPE), Issue 52, Vol. 14, No. 3, pp. 229-233.
- Al-Tarafany, Dhiaa (2022) “Design Methodology of Diagonally Reinforced Concrete Coupling Beams”, 2022 5th International Conference on Engineering Technology and its Applications (IICETA), IEEE, pp. 115-120.
- Al-Tarafany, Dhiaa (2022) “Simplified Design of Coupled Shear Wall Systems for Typical Building Configuration”, Practice Periodical on Structural Design and Construction, ASCE, Vol. 27, Issue 3.
- Al-Tarafany, and Hassan et al. (2021) “Prestressed bridge deck responses to blast loads”, 4th International Conference on Engineering Sciences (ICES 2020), IOP Conf. Series: Materials Science and Engineering, 1067 (2021) 012003.
- Al-Tarafany, Dhiaa, and Williams et al. (2019) “Evaluation of Cast-in-Place Splice Regions of Spliced I-Girder Bridges”, ACI Structural Journal, Vol. 116, Issue 6, pp. 181-193.
- Al-Tarafany, Dhiaa, and Sokoli et al. (2019) “Acceptable Elongations and Low-Cycle Fatigue Performance for High-Strength Reinforcing Bars”, Research Report.
- Al-Tarafany (Al-Teraffy), Dhiaa, and Sokoli et al. (2018) “CRITICAL STRAIN DEMANDS FOR PERFORMANCE EVALUATION OF HIGH-STRENGTH REINFORCING BARS”, 11th National Conference on Earthquake Engineering 2018, NCEE 2018: Integrating Science, Engineering, and Policy, 2018, 12, pp. 7394–7400
- Al-Tarafany, Dhiaa M.T. (2016) “Analysis of Shear Behavior of Spliced Concrete Girders”, Ph.D. dissertation, The University of Texas at Austin.
- Theeban (Al-Tarafany), Dhiaa M., and Al-Azzawi, A. (2010) “Large Deflections of Deep Beams on Elastic Foundations”, Journal of the Serbian Society for Computational Mechanics, Vol. 4 / No. 1, 2010 / pp. 88-101.
- Al-Tarafany, Dhiaa M.T. (2007) “Large Deflections of Thin and Deep Beams on Elastic Foundations”, Master thesis, Al-Nahrain University.

Curriculum Vitae

Personal Details

Name	:	Prof. Dr. Adel Abdul-Ameer Al-Azzawi
Place and Date of Birth	:	Baghdad ; 15-Sep.-1970
Nationality	:	IRAQI
Marital Status	:	Married
Current position	:	Academic Staff / Civil Eng. Dept. / College of Eng. Nahrain University, Baghdad Iraq
email	:	dr_adel_azzawi@yahoo.com
Languages	:	Arabic, English

Education

Ph.D in Structural Engineering from Baghdad University 2001

Experience

April 2018 Up to date	Prof. / Civil Eng. Dept. / College of Eng. / Nahrain University
July. 2007-April 2018	Assistant Prof. / Civil Eng. Dept. / College of Eng. / Nahrain University
July 2003-July.2007	Lecturer / Civil Eng. Dept. / College of Eng. / Nahrain University

Membership of Professional Institutions

1. Member of the Iraqi Union Engineering.
2. Member of the Iraqi Engineering Society.

Academic Experiences:

I have taught many subjects (2003–2016) such as:

Material Technology, Computer Programming, Engineering Mechanics, English Language, Strength of Materials, Engineering Statistics, Reinforced Concrete Design, Engineering Management and Economy, Steel Design, Numerical Methods, Engineering Analysis and Theory of Structures for undergraduate students.

Theory of Elasticity, Theory of Plates and Shells, Advanced Structural Analysis, Plastic Analysis, Numerical Analysis, Advanced Theories of Plates and Computer Applications for Structural Analysis for postgraduate students .

Research Activities:

- More than 70 published papers.
- One book in Arabic language
- Supervision of 28 MSC student and 7 PhD students.

Engineering Experiences:

1993-PRESENT: Structural designer and quantity surveyor for different projects

a. Analysis and design of different projects since 1993,College of Education building at Al-Aadamia, Alswaeeb Pumping Station, College of Information building, Student Union building, Scientific Research Center building and Student Classrooms building at the site of Nahrain University-Baghdad-Iraq.

b. Supervision and Consulting Committee member for the Medical Research Center building at the College of Medicine of Nahrain University, Baghdad, Iraq.

c. Structural Consultant for Baghdad international Airport highway.

d. Structural Consultant for Department of Design/ Ministry of Municipal, Water treatment projects form Baghdad, Iraq 2013 to 2016.

e. Structural Consultant for Ministry of Electricity Building Rehabilitation at Baghdad

f. Structural Consultant for Al-Zawra Stadium Site Laboratory from 2014 to 2015

CURRICULUM VITAE

Ahmed Al-Tameemi

Personal Profile

First name: *Ahmed Farhan*
Family name: *Al-Tameemi*
Date of birth: *May, 1980*
Place of birth: *Baghdad-Iraq*
Nationality: *Iraqi*
Gender: *Male*
Home address: *Baghdad-Iraq.*

E-mail: *ahmedferhan@yahoo.com*
ahmed.al-tameemi@eng.nahrainuniv.edu.iq
a.f.al-tameemi@edu.salford.ac.uk

Career summary and Experience

Place of work: *Civil Engineering Department, College of Engineering, Al-Nahrain University.*
Occupancy: *Lecturer*
Memberships: *Member of the Iraqi Engineers Union.*

Education

2017 *Ph.D. in Civil Engineering/Pavement and Transportation Engineering at the University of Salford, United Kingdom.*
2006 *M.Sc. in Civil Engineering/Pavement and Transportation Engineering at the University of Baghdad, Iraq*
2001/2002 *B.Sc., degree in Civil Engineering at the University of Baghdad. Baghdad-Iraq.*

Publications

- Abed, M.A., Al-Tameemi, A.F., Abed, A.H. and Wang, Y., 2022. Direct tensile test evaluation and characterization for mechanical and rheological properties of polymer modified hot mix asphalt concrete. *Polymer Composites*, *43*(9), pp.6381-6388.

- Shakir, H.M., Al-Azzawi, A.A. and Al-Tameemi, A.F., 2022. Nonlinear finite element analysis of fiber reinforced concrete pavement under dynamic loading. *Journal of Engineering*, *28*(2), pp.81-98.

- Mashallah, A.A., Shafiqu, Q.S.M. and Muwayez, A.F., 2021, November. Numerical analysis of a piled embankment under earthquake loading. In *AIP Conference Proceedings* (Vol. 2372, No. 1). AIP Publishing.

- Shakir, H.M., Al-Tameemi, A.F. and Al-Azzawi, A.A., 2021, May. A review on hybrid fiber reinforced concrete pavements technology. In *Journal of Physics: Conference Series* (Vol. 1895, No. 1, p. 012053). IOP Publishing.

- Al-Tameemi, A. F., Wang, Y., Albayati, A., & Haynes, J. (2019). Moisture Susceptibility and Fatigue Performance of Hydrated Lime-Modified Asphalt Concrete: Experiment and Design Application Case Study. *Journal of Materials in Civil Engineering,* ASCE, *31*(4), p.04019019.

- Al-Tameemi, A.F., Wang, Y. and Albayati, A., (2016). Experimental study of the performance related properties of asphalt concrete modified with hydrated lime. *Journal of Materials in Civil Engineering*, ASCE, *28*(5), p.04015185.

- Al-Tameemi, A.F., Wang, Y. and Albayati, A., (2015). Influence of hydrated lime on the properties and permanent deformation of the asphalt concrete layers in pavement. *Romanian Journal of Transport Infrastructure*, *4*(1), pp.1-19.

- Albayati, A., *Wang,* Y., & Al-Tameemi, A. (2015). The Use of Bonded Asphalt Surfaces for Bridge Decks. *Proceedings of the LJMU 14th Annual International Conference on Asphalt, Pavement Engineering and Infrastructure. 11th – 12th February 2015, Liverpool, UK. Volume 14, ISBN 978-0-9571804-6-8.*

Experience

-Preparation of study for Treatment of Gypseos Soil in Iraq by additives.

-Study of Traffic Flow Element of Al-Sinek bridge and Al-Khillany Rotary Signalized Intersection and questionnaire for development of this area.

- Laboratory studies of paving materials and specimens regarding the flexible pavement.

- Assistant consultant at the Consulting Engineering Bureau of Al-Nahrain University during the construction of steel structure schools in Baghdad / Alkarkh.

- Worked as a resident/chief resident engineer in construction of several major projects at Al-Nahrain University including from 2007 to 2013:

- *Buildings of College of Information Engineering.*
- *Building of Central Library of Al-Nahrain University.*
- *Building of laboratories and classrooms of Computer Engineering and Electronic and Communication Engineering Departments*
- *Al-Nahrain Presidency Building*
- *The Central Student Union Building, with inspection visit to the factory outside Iraq to check the process of fabricating the central electricity generator of the building.*

Other Experience

- *Have a good Knowledge of using computer and dealing with operating systems, use of windows office programs (Word, Excel and Power point), and some programmes related to Civil Engineering applications as well as good experience in Photoshop.*
- *English language: Very Good in speaking, reading and writing.*
    a) *Course in general and academic English at Celtic school, Cardiff, United Kingdom from 1/3/2013 to 13/9/2013.*
    b) *Passed an IELTS exam at London with a score of (7)*

CURRICULUM VITAE

Ahmed Al-Tameemi

Personal Profile

First name: *Ahmed Farhan*
Family name: *Al-Tameemi*
Date of birth: *May, 1980*
Place of birth: *Baghdad-Iraq*
Nationality: *Iraqi*
Gender: *Male*
Home address: *Baghdad-Iraq.*

E-mail: *ahmedferhan@yahoo.com*
ahmed.al-tameemi@eng.nahrainuniv.edu.iq
a.f.al-tameemi@edu.salford.ac.uk

Career summary and Experience

Place of work: *Civil Engineering Department, College of Engineering, Al-Nahrain University.*
Occupancy: *Lecturer*
Memberships: *Member of the Iraqi Engineers Union.*

Education

2017 *Ph.D. in Civil Engineering/Pavement and Transportation Engineering at the University of Salford, United Kingdom.*
2006 *M.Sc. in Civil Engineering/Pavement and Transportation Engineering at the University of Baghdad, Iraq*
2001/2002 *B.Sc., degree in Civil Engineering at the University of Baghdad. Baghdad-Iraq.*

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Other Experience

- *Have a good Knowledge of using computer and dealing with operating systems, use of windows office programs (Word, Excel and Power point), and some programmes related to Civil Engineering applications as well as good experience in Photoshop.*
- *English language: Very Good in speaking, reading and writing.*
  a) *Course in general and academic English at Celtic school, Cardiff, United Kingdom from 1/3/2013 to 13/9/2013.*
  b) *Passed an IELTS exam at London with a score of (7)*

DUAA ABDULRAZZAQ FALIH AL-JEZNAWI

PERSONAL DETAILS

- **Complete Name:** Duaa Abdulrazzaq Falih Al-Jeznawi
- **Nationality:** Baghdad/ Iraq
- **Date of Birth:** 21-06-1988
- **Address:** Al-Nahrain University
  College of Engineering
  Civil Engineering Department

E-mail: duaa.a.al-jeznawi@nahrainuniv.edu.iq

Phone Number: 009647702531448

RESEARCH INTERESTS

- Geotechnical Engineering
- Earthquake Engineering
- Finite Element Modeling
- Model Analysis
- Soil Curling
- Soil Mechanics
- Consolidation
- Soil Compaction
- Soil Structure Interaction
- Soil Stabilization
- Unsaturated Soils
- Soil Improvement
- Statistics

ACADEMIC QUALIFICATIONS

- **2024. Ph.D in Civil Engineering, Emphasis in Geotechnical Engineering**. Universiti Teknologi MARA, Shah Alam, Malaysia. Thesis: "Design Formulation for Static and Dynamic Response of Pipe Piles in Sand". Thesis corrections after viva is verified, *waiting for format checking*.
  Duration: from September 2021 to February 2024.

- **2015. Master in Civil Engineering, Emphasis in Geotechnical Engineering**. Texas A&M University, College Station, Texas, USA. Thesis: "Experimental studies of soil behavior subjected to drying". Grade: excellent (99%).
  Duration: from August 2013 to May 2015.

- **2013. English Language Training.** English Language Institute, Texas A&M University, College Station, Texas, USA. Two certificates as an outstanding student.
  Duration: from January 2013 to August 2013.

- **2011. B.Sc. degree in Civil Engineering.** Al-Nahrain University, Baghdad, Iraq, Final year project: "Applying Geographic Information System (GIS) for Maintenance Strategy Selection of Al-Nahrain university roadways". Four years overall average: very good (81.483%).
  Duration: from September 2007 to July 2011.

EMPLOYMENT SUMMARY

- **September 2011 to January 2012**. **Ministry of Science and Technology in Baghdad, Iraq.** Quality Control / Quality Assurance, as a Site engineer to build an international company.

- **Spring 2014. Review the calculation of the settlement of the Washington Monument Foundation, at Texas A&M University.** Full Report was submitted to Prof. Dr. Jean Louis Briaud (Professor and Holder of the Buchanan Chair, Zachry Dept. of Civil Engineering, Texas A&M University, College Station).

- **October 2015 to June 2016. Al-Esraa University in Baghdad, Iraq.**

Position: lecturer (teaching Soil Mechanics).

- **April 2016 to present. Al-Nahrain University.** Department of Civil Engineering in Baghdad, Iraq. Position: lecturer (teaching Soil Mechanics for 3rd grade students and Foundation Engineering for 4th grade students).

- **August 2022 to present.** Serving as the Coordinator of the Civil Engineering Department at Al-Nahrain University, Baghdad, Iraq.

Publications

No.	Paper Title	Journal Name	Year of Publication
1	Design charts and equations of the frictional resistance of single pipe pile under static and seismic loads	International Journal of Computational Materials Science & Engineering	**2024**
2	Scaling effects on the seismic response of a closed-end pipe pile embedded in dry and saturated coarse grain soils	International Journal of Computational Materials Science & Engineering	**2024**
3	Data-Driven Prediction of Maximum Settlement in Pipe Piles under Seismic Loads	Journal of Marine Science and Engineering	**2024**
4	Exploring Shear Wave Velocity—N_{SPT} Correlations for Geotechnical Site Characterization: A Review	CivilEng	**2024**
5	Developing Vs-NSPT Prediction Models Using Bayesian Framework	Transportation Infrastructure Geotechnology	**2023**
6	Numerical assessment of pipe pile axial response under seismic excitation	Journal of Engineering	**2023**
7	Investigation of the Scale Effect on the Static and Seismic Response of an Opened Ended Pipe Pile	Transportation Infrastructure Geotechnology	**2023**
8	Assessment of Soil–Structure Interaction Approaches in Mechanically Stabilized Earth Retaining Walls: A Review	CivilEng	**2023**
9	Three-dimensional finite element analysis of the effect of soil liquefaction on the seismic response of a single pile	International Journal of Computational Materials Science & Engineering	**2023**
10	Numerical Assessment of Pipe Pile Response under Seismic Excitation	Al-Nahrain Journal for Engineering Sciences	**2023**
11	Seismic Performance Assessment of Single Pipe Piles using Three-Dimensional Finite Element Modeling Considering Different Parameters	Earthquakes and Structures	**2023**
12	Response of pipe piles embedded in sandy soils under seismic loads	Transportation Infrastructure Geotechnology	**2023**
13	Random Forest Algorithm for the Strength Prediction of Geopolymer Stabilized Clayey Soil	Sustainability	**2023**
14	Numerical Study of the Seismic Response of Closed-Ended Pipe	Transportation Infrastructure Geotechnology	**2023**

	Pile in Cohesionless Soils		
15	Analysis of Slope Stabilized with Piles Under Earthquake Excitation	Transportation Infrastructure Geotechnology	**2022**
16	Numerical modeling of single closed and open-ended pipe pile embedded in dry soil layers under coupled static and dynamic loadings	Journal of the Mechanical Behavior of Materials	**2022**
17	The effect of model scale, acceleration history, and soil condition on closed-ended pipe pile response under coupled static-dynamic loads	International Journal of Applied Science and Engineering	**2022**
18	A Soil-Pile Response under Coupled Static-Dynamic Loadings in Terms of Kinematic Interaction	Civil and Environmental Engineering	**2022**
19	The slenderness ratio effect on the response of closed-end pipe piles in liquefied and non-liquefied soil layers under coupled static-seismic loading	Journal of the Mechanical Behavior of Materials	**2022**
20	The Behavior of Strip Footing Resting on Soil Strengthened with Geogrid	Civil and Environmental Engineering	**2021**
21	Evaluating the Use of Polypropylene Polymer in Enhancing the Properties of Swelling Clayey Soil	IOP Conference Series: Earth and Environmental Science	**2021**
22	Engineering Characterization of Quaternary Sandy Soil in the Mesopotamia Plain	International Review of Civil Engineering (IRECE)	**2021**
23	Using Image Analysis Technique to Study the Effect of Boundary and Environment Conditions on Soil Cracking Mechanism	Geotechnical and Geological Engineering	**2021**
24	Analysis of soil drying incorporating a constitutive model for curling	Acta Geotechnica	**2020**
25	Properties of swelling soil improved using mixture of polyethylene with silica fume and cement kiln dust	AIP Conference Proceedings	**2020**
26	Predicting Earned Value Indexes in Residential Complexes' Construction Projects Using Artificial Neural Network Model	International Journal of Intelligent Engineering and Systems	**2020**
27	Effects of Drying and Soil-Base Interface on the Behavior of an Expansive Soil Mixture	Geotechnical and Geological Engineering	**2020**
28	Effect of Wetting-Drying Cycles on Desiccation Crack Pattern and Soil Behavior	Key Engineering Materials	**2020**
29	Experimental studies on curling development of artificial soils	Journal of Rock Mechanics and Geotechnical Engineering	**2019**

Main Ongoing Projects

No.	Project Title	Percentage of completion	Notes
1	Novel Explicit Models to Predict the Frictional Resistance of Pipe Piles under Seismic Excitation	100%	**Nov. 2023**
2	Seismic Response Assessment of Tapered Piles in Sandy Soils: A Numerical Investigation	100%	**Sep. 2023**
3	Prediction of Seismic-Induced Bending Moment and Lateral Displacement in Closed and Open-Ended Pipe Piles: A Genetic Programming Approach	100%	**Oct. 2023**
4	Application of Offspring Selection Genetic Algorithm on Sustainable Concrete Strength Prediction	30%	
5	Response of Pile Groups Subjected to Coupled Vertical-Eccentric Lateral-Seismic Loads	100%	
6	Seismic Response of Oil Pipeline by Using Fiber-Reinforced Polymer Piles	70%	
7	Seismic Response of Pile Groups: A comprehensive review	100%	**Dec. 2023**
8	Far-Field and Near-Field Seismic Response Analysis of Slope Stability	5%	
9	Modeling Techniques and Seismic Performance Assessment of Rocking Shallow Foundations: A Comprehensive Review	90%	
10	An Explicit Model for Soil Resilient Modulus Incorporating Freezing-Thawing Cycles Through Offspring Selection Genetic Algorithm (OSGA).	100%	**Feb. 2024**

International Conferences

- International Foundation Congress and Equipment Expo (IFCEE) in San Antonio, 2015, Texas, USA. As a Guest and Assistant with my Advisor (Professor Marcelo Sanchez) who was a Member in the Committee there.
- Third International Conference on Geotechnical Engineering-Iraq, 29-31 of May 2022. As a Presenter of TWO papers “The Slenderness Ratio Effect on the Response of Closed-End Pipe Piles in Liquefied and Non-liquefied Soil Layers Under Coupled Static-Seismic Loading” and “Numerical Modeling of Single Closed and Open-Ended Pipe Pile Embedded in Dry Soil Layers Under Coupled Static and Dynamic Loadings”.

University Service

- A Member of the Examination Committee in Civil Engineering Department- Al-Nahrain university, since 2016 to present.

- A Coordinator in the Civil Engineering Department- Al-Nahrain university, since 2022 to present.

Seminars

- **Duaa Al-Jeznawi, "Assessment the Enhancement of Engineering Properties for Soils Using Polymer Materials"**. Delivered a lecture at the College of Engineering, Al-Nahrain University, in January 2023, with the participation of the Iraqi Scientific Geotechnical Society.

- **Duaa Al-jeznawi, 'How to Use Moodle'.** Delivered intensive lectures to students in the Civil Engineering Department during October and November 2017.

- **Duaa Al-jeznawi, 'Studying Abroad: A Life-Changing Experience (My M.Sc. Program in the USA'.** Delivered a lecture at the Civil Engineering Department in April 2017.

Awards, Prizes and Other Recognitions

- **May 2015.** Received an award as an outstanding student with a GPA of 3.88 from Texas A&M University in the USA.

- **May 2012.** Received an award for the final year project titled 'Applying Geographic Information System (GIS) for Maintenance Strategy Selection of Al-Nahrain University Roadways' at the 6th Al-Seiada Carnival, organized by the Ministry of Youth and Sport (Directorate General of Scientific Welfare) in Baghdad, Iraq.

- **July 2011.** Ranked 2nd on undergraduate students of Civil Engineering Department, Al-Nahrain University, Baghdad, Iraq.

Teaching Experience

- **Under-Graduate Teaching at Al-Esraa Univeristy (October 2015 to June 2016):** Soil Mechanics and Irrigation and Drainage Engineering.

- **Under-Graduate Teaching at Al-Nahrain University (April 2016 to Present):** Foundation Engineering, Soil Mechanics, and Information Technology (IT).

REFERENCES

1- **Assoc. Prof. Ir. Dr. Ismacahyadi Bagus Mohamed Jais**

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College of Engineering
Universiti Teknologi MARA Shah Alam, 40450
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Phone No.: 0060-193009280
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I have had the privilege of working under the guidance of **Assoc. Prof. Ir. Dr. Ismacahyadi Bagus Mohamed Jais** as my main supervisor in the PhD program since 2021. Our collaboration has included various research projects.

2- **Prof. Dr. Musab Aied Qissab Al-Janabi**

Head of the Civil Engineering Department
Al-Nahrain University, College of Engineering
Baghdad, Iraq
Email: musab.a.jindeel@nahrainuniv.edu.iq
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I have had the privilege of collaborating with **Prof. Dr. Musab Aied Qissab Al-Janabi**, the Head of the Civil Engineering Department at Al-Nahrain University, since 2022. Our collaboration has included various research projects and administrative affairs within the civil engineering department.

3- **Prof. Dr. Bushra S Albusoda**

Civil Engineering Department
University of Baghdad, College of Engineering
Baghdad, Iraq
Email: dr.bushra_albusoda@coeng.uobaghdad.edu.iq
Phone No.: 00964-7513134324
Webpage: https://coeng.uobaghdad.edu.iq/?page_id=49285

I have collaborated with **Prof. Dr. Bushra S. Albusoda**, a member of the Civil Engineering faculty at the University of Baghdad, since 2020 on a number of research projects.

Curriculum Vitae

Personal and Contact Info:

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D.O.B: December 14th – 1988

Affiliation

Assistant Professor,
Civil Engineering Department,
Al-Nahrain University
Baghdad,
Iraq

Language:

Language	Writing	Reading	Speaking
Arabic	Very Good	Very Good	Very Good
English	Good	Good	Good

Education:

- BSc. in Civil Engineering, University of Baghdad (Iraq), class of 2010. GPA of *%86.47 (Very Good)*. Ranked 4th overall between graduate students of Civil Engineering (2010).
- MSc in Civil Engineering: Transportation, the University of Nottingham, England 2012.
- PhD in Civil Engineering: Highway and Transport, the University of Nottingham, England, 2016.

Work Experience:

- Trainee, *Engineering Consultancy Bureau of Baghdad University* (Baghdad, Iraq); Jul. 2009 – Aug. 2009: Junior Civil Engineer.
- Civil Engineer, *Engineering Consultancy Bureau of Baghdad University* (Baghdad, Iraq) from July, 2010 – May, 2011; Engineer, testing of asphalt samples, evaluating the result, writing reports.

- Assistant Editor of "*The International Journal of Pavement Engineering & Asphalt Technology*" at Liverpool John Moores University, UK, ISSN 1464-8164 (2012 - 2013).
- University Lecturer, Middle Technical University/ Civil Engineering Techniques Department (Baghdad, Iraq); December 2016 – September 2017.
- University Lecturer, Al-Nahrain University/ Civil Engineering Department (Baghdad, Iraq); September 2017 – July, 2020.
- University Assistant Professor , Al-Nahrain University/ Civil Engineering Department (Baghdad, Iraq); July 2020 – until now.
- Highway and Transport Consultant, Consulting Engineering Bureau, University of Baghdad, 2018-till now
- Highway and Transport Consultant, Consulting Engineering Bureau, Al-Nahrain University, 2018-till now
-

<u>Publications:</u>

- Al-Mosawe, Hasan. "Evaluating and Assessing Parts of Nottingham Ring Road Major Scheme using Congestion Detectors." *The University of Nottingham*, MSc Dissertation, 2012.
- Al-Mosawe, Hasan, et al. "Effect of Aggregate Gradation on the Stiffness of Asphalt Mixtures." *International Journal on Pavement Engineering & Asphalt Technology* 16.2 (2015): 39-49.
- Al-Mosawe, Hasan, et al. "Predicting Asphalt Mechanical Properties as a Function of Aggregate Packing." *Transportation Research Board 95th Annual Meeting*. No. 16-2225. 2016.
- Al-Mosawe, H. M., et al. "Effect of different variables on asphalt mechanical properties." 4th *Chinese and European Workshop*. Delft, Netherlands 2016.
- Al-Mosawe, Hasan. "Prediction of Permanent Deformation in Asphalt Concrete Mixtures." *The University of Nottingham*, PhD Thesis, 2016.
- Al-Mosawe, H., Thom, N., Airey, G. and Albayati, A., 2018. Linear viscous approach to predict rut depth in asphalt mixtures. *Construction and Building Materials*, *169*, pp.775-793.
- Taki, Z.N.M., Abed, A.H. and Al-Mosawe, H., 2019. Evaluating Iraqi modified asphalt concrete moisture resistance based on strength ratio and fracture energy parameters. *Advances in Civil Engineering*, *2019*.
- Al-Mosawe, H.M., Alobaydi, D. and Albayati, A., 2018. Development of traffic noise prediction model in an educational urban area. *Civil Engineering Journal*, *4*(11), pp.2588-2595.

- Albayati, A.H., Al-Mosawe, H.M., Allawi, A.A. and Oukaili, N., 2018. Moisture susceptibility of sustainable warm mix asphalt. *Advances in Civil Engineering, 2018*.
- Abed, A.H., Qasim, Z.I., Al-Mosawe, H. and Norri, H.H., 2019. The effect of hybrid anti-stripping agent with polymer on the moisture resistance of hot-mix asphalt mixtures. *Cogent Engineering*, *6*(1), p.1659125.
- Alobaydi, D., Al-Mosawe, H., Lateef, I.M. and Albayati, A.H., 2020. Impact of urban morphological changes on traffic performance of Jadriyah intersection. *Cogent Engineering*, *7*(1), p.1772946.
- Albayati, A.H., Al-Mosawe, H., Fadhil, A.T. and Allawi, A.A., 2018. Equivalent modulus of asphalt concrete layers. *Civil Engineering Journal*, *4*(10), pp.2264-2274.
- Al-Shujairi, A.O., Al-Taie, A.J. and Al-Mosawe, H.M., 2021, June. Review on applications of RAP in civil engineering. In *IOP Conference Series: Materials Science and Engineering* (Vol. 1105, No. 1, p. 012092). IOP Publishing.
- Al-Mosawe, H.M., Thom, N.H., Airey, G.D. and Al-Bayati, A.H., 2016, October. Effect of different variables on asphalt mechanical properties. In *Functional Pavement Design: Proceedings of the 4th Chinese-European Workshop on Functional Pavement Design (4th CEW 2016, Delft, The Netherlands, 29 June-1 July 2016)* (p. 79). CRC Press.
- Abbas, D.F. and Al Mosawe, H., 2021. The Use of SBS-Modified Binder to Eliminate the Aggregate Gradation Deviation Effects in Asphalt Mixtures. *Journal of Engineering*, *27*(10), pp.68-85.
- Abbas, D.F. and Al-Mosawe, H., 2021, September. Influence of Asphalt Concrete Internal Structure on their Packing and Mixture Properties. In *IOP Conference Series: Earth and Environmental Science* (Vol. 856, No. 1, p. 012021). IOP Publishing.
- Wang, Y., Latief, R.H., Al-Mosawe, H., Mohammad, H.K., Albayati, A. and Haynes, J., 2021. Influence of iron filing waste on the performance of warm mix asphalt. *Sustainability*, *13*(24), p.13828.
- Al-Mosawe, H., Thom, N., Airey, G. and Al-Bayati, A., 2016. *Predicting Asphalt Mechanical Properties as a Function of Aggregate Packing* (No. 16-2225).
- Hashim, Sajjad, and Hasan Al-Mosawe. "THE INFLUENCE OF USING SUSTAINABLE MATERIALS ON PAVING COST OF AL-KUTMAYSAN HIGHWAY USING COST-BENEFIT ANALYSIS." *3C Empresa* 12, no. 1 (2023): 463-478.

- Al-Fayyadh, Zahraa Talib, and Hasan Al-Mosawe. "The Effect of Short-Term Aging on Warm Mix Asphalt Moisture Performance." *Civil Engineering Journal* 8, no. 12 (2022): 2789-2802.
- Al-Mosawe, Hasan, Amjad Albayati, Yu Wang, and Nuha S. Mashaan. "An experimental study of granular material using recycled concrete waste for pavement roadbed construction." *Buildings* 12, no. 11 (2022): 1926.

السيرة المهنية

1. مهندس مدني ، مكتب الاستشارات الهندسية بجامعة بغداد (بغداد ، العراق) من تموز 2010 - أيار 2011. مهندس ، فحص عينات الأسفلت ، تقييم النتيجة ، كتابة التقارير.
2. مساعد محرر "المجلة الدولية لهندسة الرصف وتقنية الأسفلت" في جامعة ليفربول جون مورس ، المملكة المتحدة ، .(2013 - 2012) ISSN 1464-8164
3. مدرس، الجامعة التقنية الوسطى / قسم تقنيات الهندسة المدنية (بغداد ، العراق). ديسمبر 2016 - سبتمبر 2017.
4. مدرس ، جامعة النهرين / قسم الهندسة المدنية (بغداد ، العراق). سبتمبر 2017 - يوليو 2020.
5. أستاذ مساعد ، جامعة النهرين / قسم الهندسة المدنية (بغداد ، العراق). يوليو 2020 - حتى الآن.
6. أستشاري الطرق والمواصلات ، المكتب الإستشاري الهندسي ، جامعة بغداد ، 2018 - 2023.
7. استشاري الطرق والمواصلات ، المكتب الإستشاري الهندسي ، جامعة النهرين ، 2018 - الآن.

المشاريع الهندسية

1. المشاركة في اعداد وتدقيق التصاميم الهندسية للطرق والاشراف الهندسي الاستشاري للمشاريع التالية:
   - أ. مشروع داماك السكني في بغداد
   - ب. مشروع زهور بغداد السكني
   - ت. مشروع بروج بغداد السكني
   - ث. مشروع بدور بغداد السكني
   - ج. مشروع دار السلام السكني
   - ح. مشروع المدينة الصناعية في بغداد – النهروان.
   - خ. مطار كربلاء الدولي
   - د. مشروع ماء المسيب – الاسكندرية – جرف النصر
   - ذ. محطة الوزن الرئيسية في كربلاء.
   - ر. مشروع مجمع آران السكني
   - ز. صيانة وتصليح أجزاء من طريق الخالص – عظيم
   - س. طريق موقع الطمر الصحي في مدينة الكاظمية المقدسة
   - ش. مشروع الطريق العام بغداد – حلة
2. استشاري المختبرات الحقلية للفحص الهندسي لضمان جودة المشاريع التالية:

أ. مشروع بدور بغداد السكني
ب. مشروع مدخل بغداد – موصل
ت. مشروع ماء المسيب – الاسكندرية – جرف النصر
ث. مشروع مجمع مارينا السكني
ج. مشروع تطوير ساحة النسور في بغداد

3. اعداد تقارير تحريات التربة لعدد من مشاريع المدارس الحكومية والمشاريع السكنية في بغداد ومحافظات اخرى.
4. اعداد دراسات مرورية لعدد من المشاريع والتقطاعات المرورية في بغداد.

Curriculum Vitae

Personal Details

Name	:	**Prof. Dr. Ibrahim Saleem Ibrahim Harba**
Place and Date of Birth	:	**Baghdad ; 19/3/1974**
Nationality	:	**IRAQI**
Marital Status	:	**Married**
Current position	:	**Academic Staff/Civil Eng. Dept./ College of Eng. Nahrain University, Baghdad Iraq**
Email	:	Ibrahim.S.Ibrahim@nahrainuniv.edu.iq ibraharba@yahoo.com
Mobile	:	07801874014
Languages	:	**Arabic, English**

Education

University Name	Degree	Issue Date		Country
University of Technology	**B.Sc.**	**1996**	**Civil Engineering**	**IRAQ**
University of Technology	**M.Sc.**	**1996**	**Structural Engineering**	**IRAQ**
Nahrain University	**Ph.D.**	**2015**	**Structural Engineering**	**IRAQ**

Experience

October 2022 up to date	**Professor/ Civil Eng. Dept./College of Eng./ Nahrain University**
July 2017 Up to date	**Assistant Professor/ Civil Eng. Dept./College of Eng./ Nahrain University**
Nov. 2011 Up to	**Lecturer / Civil Eng. Dept./College of Eng./ Nahrain University**
Dec. 2005 Up to 2011	**Assistant Lecturer / Civil Eng. Dept./College of Eng./ Nahrain University**

Membership of Professional Institutions

1. **Member of the Iraqi Union Engineering.**
2. **Member of the Iraqi Engineering Society.**

Engineering Experiences:

1996 to 1997	Military service from Sept.1996 to Oct.1997: worked as a resident engineer.
1998 to1999	Private work as a contractor a multistory building in Baghdad .
Feb. 1999	Joined a learning course for structural analysis and design using computer software STAAD III.
2001 Up to 2005	Private work as a structural designer for more 32 projects. All the analysis were carried out using computer software, like STAAD III.main projects were multistory R.C. hotels , commercial buildings, and a R.C. simply supported bridge at Tigris river.

MS.C Thesis Title:

Ferrocement Virendeel Truss .

PH. D Thesis Title:

Behavior of Structural Light Weight R.C Tapered Beams under Repeated Loading

Publications :

1- Ibrahim S. I. Harba,. " EFFECT OF SKEW ANGLE ON BEHAVIOR OF SIMPLY SUPPORTED R. C. T-BEAM BRIDGE DECKS ", ARPN Journal of Engineering and Applied Sciences; VOL. 6, NO. 8, AUGUST 2011.

2- Ibrahim S. I. Harba, " ***Non Linear Finite Element Analysis of Confined HSC Columns Under Concentric and Eccentric Loadings***", Engineering and Development, vol.16, No.3, sep.2012.

3- Ibrahim S. I. Harba, Abdulkhalik J. Abdulridha " ***Finite Element Analysis of RC Tapered Beams under Cyclic Loading***" **Al-Nahrain Journal forEngineering Sciences (NJES) Vol.20 No.2, 2017 pp.378-396** *Special Issue - Proceedings of the 4th Eng. Conf. (21April 2016, Al-Nahrain Univ., Baghdad, IRAQ)*

4- Hussam K. Risan, Ibrahim S. I. Harba, Abdulkhalik J. Abdulridha " Numerical analysis of RC wall with opening strengthened by CFRP subjected to eccentric loads" GRADEVINAR journal of civil engineering **Vol.69 No.7, 2017 pp.521-616**

5- Oday S. B. Al-Rubaie and Ibrahim S. I Harba, " DETERMINATION THE STORY LATERAL DISPLACEMENT AND VERTICAL SETTLEMENT IN RAFT FOUNDATION OF MULTISTORY BUILDING BY MULTI-LINEAR REGRESSION" ARPN Journal of Engineering and Applied Sciences; VOL. 13, NO. 10, MAY 2018.

6- Ibrahim S. I. Harba and Oday S. B. Al-Rubaie, " Determination of Settlement for Beam on Elastic Foundation by ETABS Software" Al-Nahrain Journal forEngineering Sciences (NJES) Vol.21 No.1, 2018 pp.12-19.

7- Abdulkhalik J. Abdulridha, Hussam K. Risan and Ibrahim S.I. Harba, " NUMERICAL ANALYSIS OF TWO-WAY RC SLAB WITH A SAWN UP OPENING STRENGTHENED BY CFRP" International Journal of Civil Engineering and Technology (IJCIET) Volume 9, Issue 8, August 2018, pp. 1159–1167.

8- Abdulkhalik J. Abdulridha, Zahir Noori M. Taki and Ibrahim S.I. Harba " NUMERICAL ANALYSIS OF REINFORCED CONCRETE BEAM STRENGHTENED BY CFRP SUBJECTED TO MONOTONIC LOADING" International Journal of Civil Engineering and Technology (IJCIET) Volume 9, Issue 10, October 2018, pp. 894–904.

9- Ibrahim S. I. Harba and Mais A. Hammed, " SHEAR BEHAVIOR OF SELF COMPACTED REINFORCED CONCRETE TWO WAY BUBBLE SLABS" International Journal of Civil Engineering and Technology (IJCIET) Volume 9, Issue 12, December 2018, pp. 1117–1127.

10- Ibrahim S. I. Harba and Mais A. Hammed, " Numerical Analysis of Shear Strength Behavior of self-compact reinforced concrete Two-way Bubble Deck Slab with Shear Reinforcement" 2nd International Conference on Sustainable Engineering Techniques (ICSET 2019), IOP Conf. Series: Materials Science and Engineering **518** (2019) 022050. doi:10.1088/1757-899X/518/2/022050.

11- Ali H. Yaagoob and Ibrahim S. I. Harba, " Behavior of Self Compacting Reinforced Concrete One Way Bubble Deck Slab", Al-Nahrain Journal for Engineering Sciences **NJES** 23(1)1-11, 2020 http://doi.org/10.29194/NJES.23010001.

12- Ahmed A. Younis , Ibrahim S. I. Harba and Abdulkhalik J. Abdulridh, " Flexural behavior of self-compacting damaged reinforced concrete box beams strengthening with CFRP", 4th International Conference on Engineering Sciences (ICES 2020), IOP Conf. Series: Materials Science and Engineering 1067 (2021) 012051. doi:10.1088/1757-899X/1067/1/012051.

13- Hussein. S. Dhaidan , Ibrahim. S. I. Harba, " Effect of Strengthening With Two Systems on The Behavior of Cellular Beams With Different Web-opening Shapes", Solid State Technology Volume: 63 Issue: 5 (2020).

14- Sabah, Hadeel AH, and Ibrahim SI Harba. "A Review-Behavior of Reinforced Concrete Exterior Beam-Column Connections under Cyclic Loading." *E3S Web of Conferences*. Vol. 318. EDP Sciences, 2021.

15- Harba, Ibrahim SI, and Abdulkhalik J. Abdulridha. "Numerical analysis of RC columns under cyclic uniaxial and biaxial lateral load." *Građevinar* 73.10. (2021): 979-994.

16- Harba, I. S., Abdulridha, A. J., & AL-Shaar, A. A. (2022). Numerical analysis of high-strength reinforcing steel with conventional strength in reinforced concrete beams under monotonic loading. *Open Engineering*, *12*(1), 817-833.

17- Harba, I., Abdulridha, A., & Ahmed, A. S. (2023). Numerical analysis of reinforced concrete circular columns strengthening with CFRP under concentric and eccentric loadings. *Frattura ed Integrità Strutturale*, *17*(63), 190-205.

18- Sabah, H. A. H., & Harba, I. S. (2022). Numerical Analysis of Reinforced Concrete Exterior Beam-Column Joints Under Limited Cycles of Repeated Loading. *Diyala Journal of Engineering Sciences*, 108-129.

19- Al-Khafaji, N. H., & Harba, I. S. (2023). Shear and Flexural Behavior of Lightweight Concrete Beams Containing Hybrid Fibers. *Civil and Environmental Engineering*.

20- Abd-Al-Naser, M., & Habra, I. S. (2023, September). A Review-strengthening of reinforced concrete beams with textile-reinforced concrete. In *IOP Conference Series: Earth and Environmental Science* (Vol. 1232, No. 1, p. 012024). IOP Publishing.

21- Abd-Al-Naser, M., & Harba, I. S. (2023). Strengthening of Reinforced Concrete Beams with Textile-Reinforced Concrete. *Civil and Environmental Engineering*, *19*(2), 596-609.

22- AL-Saidi, H. E., & Harba, I. S. (2023). Behavior of One Way Foamed Concrete Slabs Using Different Types of Reinforcement. *Migration Letters*, *20*(S7), 442-457.

Curriculum Vitae

Personal Details

Name	:	Prof. Dr. Ibrahim Saleem Ibrahim Harba
Place and Date of Birth	:	Baghdad ; 19/3/1974
Nationality	:	IRAQI
Marital Status	:	Married
Current position	:	Academic Staff/Civil Eng. Dept./ College of Eng. Nahrain University, Baghdad Iraq
Email	:	Ibrahim.S.Ibrahim@nahrainuniv.edu.iq ibraharba@yahoo.com
Mobile	:	07801874014
Languages	:	Arabic, English

Education

University Name	Degree	Issue Date		Country
University of Technology	B.Sc.	1996	Civil Engineering	IRAQ
University of Technology	M.Sc.	1996	Structural Engineering	IRAQ
Nahrain University	Ph.D.	2015	Structural Engineering	IRAQ

Experience

October 2022 up to date	Professor/ Civil Eng. Dept./College of Eng./ Nahrain University
July 2017 Up to date	Assistant Professor/ Civil Eng. Dept./College of Eng./ Nahrain University
Nov. 2011 Up to	Lecturer / Civil Eng. Dept./College of Eng./ Nahrain University
Dec. 2005 Up to 2011	Assistant Lecturer / Civil Eng. Dept./College of Eng./ Nahrain University

Membership of Professional Institutions

1. Member of the Iraqi Union Engineering.
2. Member of the Iraqi Engineering Society.

Engineering Experiences:

1996 to 1997	Military service from Sept.1996 to Oct.1997: worked as a resident engineer.
1998 to1999	Private work as a contractor a multistory building in Baghdad .
Feb. 1999	Joined a learning course for structural analysis and design using computer software STAAD III.
2001 Up to 2005	Private work as a structural designer for more 32 projects. All the analysis were carried out using computer software, like STAAD III.main projects were multistory R.C. hotels , commercial buildings, and a R.C. simply supported bridge at Tigris river.

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2- Ibrahim S. I. Harba, " ***Non Linear Finite Element Analysis of Confined HSC Columns Under Concentric and Eccentric Loadings***", Engineering and Development, vol.16, No.3, sep.2012.

3- Ibrahim S. I. Harba, Abdulkhalik J. Abdulridha " ***Finite Element Analysis of RC Tapered Beams under Cyclic Loading***" **Al-Nahrain Journal forEngineering Sciences (NJES) Vol.20 No.2, 2017 pp.378-396** *Special Issue - Proceedings of the 4th Eng. Conf. (21April 2016, Al-Nahrain Univ., Baghdad, IRAQ)*

4- Hussam K. Risan, Ibrahim S. I. Harba, Abdulkhalik J. Abdulridha " Numerical analysis of RC wall with opening strengthened by CFRP subjected to eccentric loads" GRADEVINAR journal of civil engineering **Vol.69 No.7, 2017 pp.521-616**

5- Oday S. B. Al-Rubaie and Ibrahim S. I Harba, " DETERMINATION THE STORY LATERAL DISPLACEMENT AND VERTICAL SETTLEMENT IN RAFT FOUNDATION OF MULTISTORY BUILDING BY MULTI-LINEAR REGRESSION" ARPN Journal of Engineering and Applied Sciences; VOL. 13, NO. 10, MAY 2018.

6- Ibrahim S. I. Harba and Oday S. B. Al-Rubaie, " Determination of Settlement for Beam on Elastic Foundation by ETABS Software" Al-Nahrain Journal forEngineering Sciences (NJES) Vol.21 No.1, 2018 pp.12-19.

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14- Sabah, Hadeel AH, and Ibrahim SI Harba. "A Review-Behavior of Reinforced Concrete Exterior Beam-Column Connections under Cyclic Loading." *E3S Web of Conferences*. Vol. 318. EDP Sciences, 2021.

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18- Sabah, H. A. H., & Harba, I. S. (2022). Numerical Analysis of Reinforced Concrete Exterior Beam-Column Joints Under Limited Cycles of Repeated Loading. *Diyala Journal of Engineering Sciences*, 108-129.

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20- Abd-Al-Naser, M., & Habra, I. S. (2023, September). A Review-strengthening of reinforced concrete beams with textile-reinforced concrete. In *IOP Conference Series: Earth and Environmental Science* (Vol. 1232, No. 1, p. 012024). IOP Publishing.

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karoomeedb@gmail.com

Curriculum Vitae

Personal Data

Date of Birth/ Birth Place	06.10.1988
Nationality	Iraqi
Marital Status	Single

Education

2010 – 2012

MASTER DEGREE | UNIVERSITY OF TECHNOLOGY

- Major: **Electrical and Electronic Engineering**.
- Thesis title: “Performance Evaluation and Enhancement of an Adaptive IIR Filter”.
- Related coursework: Digital communications, wireless communications, Antenna, FIR filters, Adaptive Algorithms, System Identification, Noise Cancellation, Echo Cancellation.

2007 – 2010

BACHELOR DEGREE | UNIVERSITY OF TECHNOLOGY

- Major: Electrical and Electronic Engineering.
- Rank: the (2^{nd}) out of (30) students in the electronics engineering department and the (8^{th}) out of (120) students of the all departments.
- Project research in stage 4 in title: "Implementation of Reconfigurable Stochastic Artificial Neural Network Using FPGA (= Field Programmable Gate Array)"
- Related coursework: Analog and digital communications, Artificial Neural Network, Field Programmable Logic Array, Programmable Logic Control.

Publications

Book

- I’ve been published a book titled “Performance Evaluation and Enhancement of an Adaptive IIR Filter” An LAMBERT academic publishing Supervision by Prof. Thamer M. Jamel with ISBN 978-3-330-01192-2.

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✉ karoomeedb@gmail.com

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Papers

- Thamer M. Jamel, and **Karam K. Naji**, “Simple Variable Step Size LMS Algorithm for Adaptive Identification of IIR Filtering System,” Mosharaka International Conference on Communications, Signals and Coding (MIC-CSC2012), Istanbul, Turkey, 12-14 October, 2012.

Computer Skills

- Professional usage of MATLAB Simulation Package.
- Practiced IT skills (computers HW & SW, maintenance and troubleshooting).
- Experienced user & deep knowledge in Microsoft Office products.
- Passed all parts of Internet and Computer Core Certification (IC3) exams.

Language Skills

- Mother Tongue: Arabic.
- Very good command of the English language.
  (I passed the IELTS-Cambridge-Certificate: Speaking 6.0 – Writing 5.0 – Reading 5.0 – Listening 5.0 – Overall 5.5).

Other Certificates

- I have a Certificate from the University of Technology in Teaching Methods.

Professional Memberships

- Member of Iraqi Engineers Union.

References

- Available upon request.

Baghdad, 27.2.2024 Karam Qays Naji Magazachi

Curriculum Vita

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3- DESIGN OF A STEEL SPECIAL MOMENT FRAME SUSCEPTIBLE TO HIGH SEISMIC RISK.	Published
4 ESTIMATING ELASTIC BUCKLING LOAD FOR AN AXIALLY LOADED COLUMN BOLTED TO A SIMPLY SUPPORTED PLATE USING ENERGY METHOD.	Published
5- MODELING INITIAL VELOCITY PROFILES FOR CONTINUOUS FREE-VIBRATING BEAMS USING DISTRIBUTED IMPULSE LOADING.	Published
6. DESIGN FOR PRESTRESSED CONCRETE FLEXURAL MEMBERS AGAINST PROGRESSIVE COLLAPSE	Published
7. PERFORMANCE OF SEMI-RIGID STEEL CONNECTIONS UNDER MONOTONIC AND CYCLIC LOADINGS: A REVIEW	Published
8. ASSESSMENT OF A REINFORCED CONCRETE MULTI-STORY BUILDING AGAINST PROGRESSIVE COLLAPSE	Published
9. Progressive Collapse Assessment for Concrete Multi-Story Buildings-Review	Published

<table>
<tr><th colspan="3">PRESENTATION AND CLASSES TAUGHT</th></tr>
<tr><th>Title and Data of presentation</th><th>Subject Presentation</th><th>Name of Conference or meeting and Location</th></tr>
<tr><td>Theory of Structures, 2010</td><td>Teaching the students different subjects in the analysis of structures.</td><td>Tutorial Lectures
Al-Nahrain University, Civil Engineering Department Baghdad-Iraq</td></tr>
<tr><td>Structural Analysis using SAP2000, 2015.</td><td>A presentation for teaching the analysis of several types of structures using SAP2000.</td><td>University of Wyoming, Laramie, WY, USA.</td></tr>
<tr><td>Matrix Structural Analysis (Elective I).</td><td>Teaching the analysis of structures using Direct Stiffness Method</td><td rowspan="5">Course Coordinator at Al-Nahrain University, Civil Engineering Department Baghdad-Iraq</td></tr>
<tr><td>Steel Design I & II.</td><td>Teaching the steel design class according to AISC Manual</td></tr>
<tr><td>English I & II</td><td>Beginners and Pre-Intermediate English Teaching Levels</td></tr>
<tr><td>Finite Element Anaysis</td><td>M.Sc. Level</td></tr>
<tr><td>Technical English</td><td>Ph.D. Level</td></tr>
</table>

<table>
<tr><th colspan="2">SKILLS AND INTERESTS</th></tr>
<tr><th>Skills</th><th>Interests</th></tr>
<tr><td>• Languages:
1- Arabic Language (native)
2- English Language (good)
• Summary of Achievement:
1. Supervision on the construction of many reinforced concrete buildings.
2. Analysis and Design of a multi-story reinforced concrete buildings.
3. Analysis and Design of a single story steel buildings.
4. Supervisions with other consultant on the construction of Steel Structures Schools.
5. Checking and endorsement the design, and Supervisions on the construction of Haditha Diesel Power Planet and Basra Sport City Designed by 360.
• Good knowledge on several computer programs in Civil Engineering and in many computer programs such as STAAD Pro., Prokon, SAP2000, ETABS, Fortran, Matlab, MathCAD, COMSOL Multiphysics, and LaTex.</td><td>Reading books and journals in Civil Engineering and in other objects such as history.</td></tr>
</table>

CURRICULUM VITAE

First name: Mohammed

Middle name: Abdulkhaleq

Last name: Ibrahim

1. Date of birth:1976
2. Nationality: Iraqi
3. Education:

Institution	University of Baghdad/ College of Engineering
Date: from (month/year) to (month/year)	2011 - 2015
Degree(s) or Diploma(s) obtained	Ph.D. in Environmental Engineering

Institution	University of Baghdad/ College of Engineering
Date: from (month/year) to (month/year)	1998-2001
Degree(s) or Diploma(s) obtained	M.Sc. in Environmental Engineering

Institution	University of Baghdad/ College of Engineering
Date: from (month/year) to (month/year)	1994-1998
Degree(s) or Diploma(s) obtained	B.Sc. in Civil Engineering

4. Language skills, mark 1 (worst) to 5 (best) for competence:

Language	Reading	Speaking	Writing
Arabic	5	5	5
English	5	4	5

5. Membership of professional bodies:

- Member in American Society of Civil Engineers, ”ASCE”.
- Member in Iraqi Engineers Union.
- Member in Federation of Arab Engineers.
- Member in Association of University Lecturers.

6. Other skills (e.g. computer literacy, etc.):

- MS word.
- MS excel.
- MS power point.
- AutoCad.
- EPANET.
- Water CAD
- Sewer CAD.
- Statistica.
- SPSS.
- ANN – Newframe.

7. Present position:

- Faculty member (Professor) Al-Nahrain University - College of Engineering - Civil Engineering Department), since 2002 to present.
- Formerly Director of Engineering Consultancy Bureau (Al-Nahrain University), 2018 to 2021.

8. Specific country experience:

Country	Date: from (month/year) to (month/year)
Iraq	1998 to present time

9. Academic Experience

Under Graduate Courses

- Sanitary Engineering I and Laboratory I.
- Sanitary Engineering II and Laboratory II.
- Building Services Engineering.
- Fluids Mechanics Laboratory.
- Quantity Survey.
- Management and Engineering Economy.
- Water Quality and Management.
- Advanced Engineering Statistics.
- Environmental Geotechnique.
- Dewatering Engineering.

Prizes:

- Winning NISA "Network of Iraqi Scientist Abroad", 2015 prize, for Best Paper in Engineering and Technology.
- Winning Al-Nahrain University prize, 2016, for Best Paper in Engineering and Technology.

Patents

- Iraqi Patent no.: 5562, date: *2018*

  Patent Entitled: *"Electricity Generation by Using Microbial Osmotic Fuel Cell.*
- Iraqi Patent no.: 7651, date: *2022*

  Patent Entitled: *"Measurement of Domestic Wastewater Solid Wastes in Landfills by Using Biological Simulators"*

Publications

- Hasanain Saad Alhares · Mohammed Ali A. Shaban · Mohammed Sadeq Salman · Mohanad J. M-Ridha ·Sabah J. Mohammed · Khalid M. Abed · Mohammed A. Ibrahim · Ali K. Al-Banaa · Hassimi Abu Hasan, "Sunflower Husks Coated with Copper Oxide Nanoparticles for Reactive Blue 49 and Reactive Red 195 Removals: Adsorption Mechanisms, Thermodynamic, Kinetic, and Isotherm Studies, 234:35, 2023.
- Mohammed A. Ibrahim, Mohammed Ali A. Shaban, Yaseen Rashid Hasan2, Mohanad J. M-Ridha, Haitham A. Hussein, Khalid M. Abed, Sabah J. Mohammed, Mohd Hafizuddin Muhamad, Hassimi Abu Hasan, "Simultaneous Adsorption of Ternary Antibiotics (Levofloxacin, Meropenem, and Tetracycline) by SunFlower Husk Coated with Copper Oxide Nanoparticles", Journal of Ecological Engineering, 23(6), 30–42, 2022
- Ziad T. Abd Ali, Hussein J. Khadim, Mohammad A. Ibrahim, "Simulation of the remediation of groundwater contaminated with ciprofloxacin using grafted concrete demolition wastes by ATPES as reactive material: Batch and modeling study", Egyptian Journal of Chemistry, 65(10), 585 – 596, 2022.
- Noor A Al-Saray, Qassun S Shafiqu, Mohammed A Ibrahim, "The Effect of Adding High-Density Polyethylene Polymer on the Engineering Characteristics for Sandy Soil", Journal of Engineering, University of Baghdad, 27(9), 29-37, 2021.

- Noor A Al-Saray, Qassun S Shafiqu, Mohammed A Ibrahim, "Improvement of strength characteristics for sandy soils by polypropylene fibers (PPF)". 2nd International Conference for Civil Engineering Science (ICCES 2021), 1-7, 2021.
- Mohammed A. Ibrahim, Haitham A. Hussein, Ziad T. Abd Ali, "Investigating the Effect of Inlet Aperture and Baffle Position in Improving the Efficiency of Primary Settling Tanks". Journal of Engineering Science and Technology, 38-49, 2021.
- Mohammed Ali A. Shaban, Mohammed A. Ibrahim, Mohanad J. M-Ridha, Haitham A. Hussein. "Adsorption of Meropenem Antibiotics from Aqueous Solutions on Multi-Walled Carbon Nanotube", International Review of Civil Engineering (I.RE.C.E.), 11(6), 283-293, 2020.
- Alaa H. Alshami, Mohammed A. Ibrahim, Haitham A. Hussein, Hassan Hameed Gatiea, "Possible Scenarios of Iraqi Marshland Restoration for Future Water Resources Management". 3rd International Conference on Recent Innovations in Engineering (ICRIE 2020), 1-9, 2020.
- Mohanad J. M-Ridha Yaseen Rashid Hasan , Mohammed A. Ibrahim. "Adsorption kinetics and mechanisms for meropenem antibiotic removal in batch mode via rice husk functionalized with Mg/Fe-layered double hydroxides". Separation Science and Technology, 2020. https://www.tandfonline.com/loi/lsst20.
- Mohammed A. Ibrahim, Mohanad J. M-Ridha, Haitham A. Hussein, Ayad, .A.H., Faisal, "Artificial Neural Network Modelling of The Water Quality Index for The Euphrates River in Iraq". Iraqi Journal of Agricultural Sciences, 51(6),1572-1580, 2020.
- Bilal Muiassar M. Salih, Mohammed A. Ibrahim, and Raid R. Al-Omari, "Estimation of the Settlement Components of Municipal Solid Waste", Modern Applications of Geotechnical Engineering and Construction, Lecture Notes in Civil Engineering,112, 375-387, 2020.
- Layth K. Shannoon, Mohammad A. Ibrahim, "Bio-Cementation of Sandy Soil through Bacterial Processing to Precipitate Carbonate", Al-Nahrain Journal for Engineering Sciences (NJES), 23(3), 225-231, 2020.
- Ziad T. Abd Ali, Hussain M. Flayeh, Mohammed A. Ibrahim, "Numerical modeling of performance of olive seeds as permeable reactive barrier for containment of copper from contaminated groundwater", Desalination and Water Treatment, 139, 268–276, 2019.
- Mohammed A. Ibrahim, Raid R. Al-Omari, Mustafa H. Ibrahim,"Effect of Microbial Carbonate Precipitation in Silty Sandy Soils", Proceedings of the 16th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering, 2019.
- Mohammed A. Ibrahim, Raid R. Al-Omari, Mustafa H. Ibrahim, ”Experimental Study to Improve the Shear Stress of Silty- Sandy Soils by Using Urease Producing Bacteria”, American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS), 41(1), 271-277, 2018.
- Alaa H. Alshami, Haitham A. Hussein and Mohammed A. Ibrahim, “Effect of Construction Overflow Weir Across Euphrates River in the Chibayish Marshes Region”, Research Journal of Applied Sciences, Engineering and Technology, 15(2), 47-56, 2018.
- Haitham H. Hussein, Rozi Abdullah, Mohammed A. Ibrahim and Md. Azlin Md. Said,” Experimental Investigation of the inlet Baffle Position on the Flow Pattern, Oil Concentration and Efficiency of Rectangular Separator Tank”, Journal of Desalination and Water Treatment”, 1-8, 2016.
- Mohammed A. Ibrahim, Ziad Tark Abd Ali and Haitham H. Hussein, “Application of Cluster Analysis and Multivariate Statistical Techniques Associated with Water Quality Index to Evaluate Water Quality of Tigris River in Iraq”, Journal of Arab Universities Union, 23(1), 21-35, 2016.
- Zainab Z. Ismail and Mohammed A. Ibrahim, “Desalination of Oilfield Produced Water Associated with Treatment of Domestic Wastewater and Bioelectricity Generation in Microbial Osmotic Fuel Cell (MOFC)”, Journal of Membrane Science, (490), 247-255, 2015.
- Zainab Z. Ismail and Mohammed A. Ibrahim, “Brackish Water Desalination Coupled with Wastewater Treatment and 5 Electricity Generation”. Journal of Engineering, College of Engineering, University of Baghdad, 21(5), 35-44, 2015.
- Zainab Z. Ismail and Mohammed A. Ibrahim, “Simultaneous wastewater biotreatment and produced water desalination associated with power generation in microbial osmotic fuel cell (MOFC)”, the 2015 International Conference on Water, Energy and Environment (ICWEE 2015) taking place 24-26 March 2015, at the American University of Sharjah, Sharjah, UAE.
- Ziad Tark Abd Ali, Mohammed A. Ibrahim and Huda M. Madhloom, “Eggshell Powder as An Adsorbent for Removal of Cu (II) andCd (II) from Aqueous Solution: Equilibrium, Kinetic and

Thermodynamic Studies”, Accepted for Publishing, Al-Nahrain University, College of Engineering Journal, 19(2), 186-193, 2015.

- Haitham H. Hussein , Mohammed Abdulkhaleq, Rozi Abdullah and Sobri Harun, ”Numerical Model of Baffle Location Effect on Flow Pattern in Oil and Water Gravity Separator Tanks”, World Applied Science Journal”, 26(10), 2013.
- Mohammed Abdulkhaleq, "Assessment of Water Quality Status For the Euphrates River in Iraq", Engineering and Technology Journal, University of Technology, 30(14), 2012.
- Mohammed Abdulkhaleq, "Evaluation of Water Treatment Plants Efficiency in Baghdad City", The Iraqi journal for Mechanical and Materials Engineering, Special Issue for the Papers Presented in 2nd Annual Scientific Conference of the College of Engineering, University of Babylon, 24-25 March 2010, Part (B).
- A.Al-Saqqar and Mohammed Abdulkhaleq, ”Stability Index of The Treated Water from Al-Karkh and Al-Rasheed Water Treatment Plants in Baghdad City”, Journal of the College of Engineering, University of Baghdad, 15(2), 2009.
- O.F.Al-Damlji and Mohammed Abdulkhaleq, ”Experimental and Numerical Investigations of Dispersion and Transport of Pollutants in an Iraqi Soil”, Emirates Journal for Engineering

Curriculum Vitae / السيرة الذاتية

Personal Information :	أولاً : البيانات الشخصية :
Name:Yasser Mahmood Kadhim	الاسم الثلاثي واللقب: ياسر محمود كاظم الخشالي
Place & Data of Birth: Baghdad 1975	محل وتاريخ الولادة: الجزائر 1975
Marital Status: Married	الحالة الاجتماعية: متزوج
Present address: Country: Iraq City: Baghdad	عنوان السكن: البلد: العراق المدينة: بغداد
Mobile No:1- 07818246359	رقم الجوال:1- 07818246359
E – mail: dr.khushally@nahrainuniv.edu.iq	البريد الالكتروني:

Employee meet :	ثانياً: المؤهلات الوظيفية:
University: Al Nahrain University	الجامعة: جامعة النهرين
College: College of Engineering	الكلية: كلية الهندسة
Department: Civil Engineering	القسم: الهندسة المدنية
Data of Recruitment in MOHE:19-09-2015	تاريخ أول تعيين في التعليم العالي: 19-09-2015
Designation: Lecturer	المنصب: تدريسي
Major: Civil Engineering	التخصص العام: الهندسة المدنية
Minor: Soil Mechanics	التخصص الدقيق: ميكانيك التربة
Academic Rank:	اللقب العلمي: مدرس
Data of Academic Rank: 19-09-2015	تاريخ الحصول على اللقب العلمي: 19-09-2015
Language: 1- Arabic 2- English	اللغات التي تجيدها: 1- العربية 2- الانكليزية

ثالثاً: الشهادات الحاصل عليها:

تاريخ الحصول عليها	الجهة المانحة (جامعة/كلية)	الاختصاص	الشهادة	ت
2009/4/12	جامعة بغداد / كلية الهندسة	ميكانيك التربة	الدكتوراه	1
2000/12/30	جامعة بغداد / كلية الهندسة	الانشاءات	الماجستير	2

Experiences Professional	From	To	الفترة الزمنية إلى	الفترة الزمنية من	رابعاً : الخبرات المهنية
Senior Project Engineer	2005	1998	2005	1998	مهندس مشاريع
Project Manager	2015	2005	2015	2005	مدير مشاريع

خامساً : المواد التي قمت بتدريسها :			Subject you teach
ت	المادة	المكان	التاريخ
1	ميكانيك التربة / المرحلة الثالثة	كليه دجلة	2017-2015
2	هندسة الاسس / المرحلة الرابعة	كليه دجلة	2024 -2016
3	الاحصاء الهندسي / المرحلة الثانية	كليه دجلة	2016 -2015

سادساً : البحوث والمقالات المنشورة :			
ت	العنوان	تاريخ النشر	مكان النشر
1	Investigation On The Use Of Micropiles For Substitution Of Defected Piles By The Finite Element Method تحري عن استعمال الركائز المصغرة كبديل عن الركائز المتضررة بطريقة العناصر المحددة	2010	Journal of Engineering
2	Geotechnical properties of gypseous soil contaminated with crude oil	2019	IOP Conference Series: Materials Science and Engineering
3	Simulation Of Lowering Groundwater In The Right Bank Of Derbendikhan Dam	2019	International Journal of Civil Engineering and Technology (IJCIET)
4	Geotechnical Properties of Clayey Soil Improved by Sewage Sludge Ash	2020	Journal of the Air & Waste Management Association

ت	اسماء اللجان التي عمل بها
1	اللجنة العلمية
2	لجنة الاستلال
3	لجنة الضمان والجودة
4	لجنة التدريب الصيفي
5	اللجنة الامتحانية
6	عضو مجلس قسم
7	لجنة متابعة غيابات الطلبة
8	لجنة الارشاد التربوي
9	لجنة متابعة المختبرات

MASSARA GLAA YAHYA

Baghdad

التفاصيل الشخصية

alzaafrania
07707818369 ,meserra.gelaa@nahrainuniv.edu.iq
تاريخ الميلاد: 17 يناير 1992
محل الميلاد: Baghdad

المؤهلات الدراسية

B.Sc. in Electrical Engineering — 2013 - 2009
university of Baghdad, Baghdad

M.Sc. in Electrical Engineering/ Power and Machine — 2016 - 2013
university of Baghdad, Baghdad

الخبرة العملية

Teaching at Al-Esraa University — نوفمبر 2016 - فبراير 2023
Technical Engineering, Baghdad   Medical Instrumentation

اللغات

English

البحوث العلمية

Comparative study of two cases of single-phase HCMLI using IPDPWM technique for standalone PV system — 2022
Int. J. Nonlinear Anal. Appl.

Modified PDPWM control with MPPT algorithm for equal power sharing in cascaded multilevel inverter for standalone PV system under partial shading — 2023
International Journal of Power Electronics and Drive Systems (IJPEDS)

مؤتمرات

Impact of using Cloud Computing and Artificial Intelligence in the E-Commerce Industry: Problems and prospects affecting the Customer Experience — 2021
Iraqi Academics Syndicate 2nd International Conference for pure and Applied Sciences, Babylon

ألاستاذ الدكتور المهندس الاستشاري حاتم عبد الكريم رشيد العكيدي

مواليد بغداد ١٩٦٩/٩/٢٥

عراقي الجنسية

متزوج

رقم الجوال 009647830604510

اللغات : الانكليزية

مكان العمل الحالي تدريسي في كلية الهندسة في جامعة النهرين .

عدد سنوات الخدمة ٣٢ سنة

البريد الالكتروني hatemakeedy1969@gmail.com

التحصيل الاكاديمي

- بكالوريوس هندسة مدنية /الجامعة المستنصرية ١٩٩٠-١٩٩١ .
- ماجستير هندسة مدنية-إدارة مشاريع إنشائية /الهندسية العسكرية٢٠٠٠.

عنوان البحث:

(دراسة تقويمية لحملات الاعمار لمشاريع ابنية الخدمات العامة في العراق).

(Evaluation Study For Re-Campaigns Public Services Building Project in Iraq).

- دكتوراه هندسة بناء وإنشاءات-إدارة مشاريع إنشائية –الجامعة التكنولوجية ٢٠٠٧ .

عنوان الاطروحة:

(اقتراح نظام ادارة معلومات لشركات المقاولات الانشائية).

(Proposed Information Management System For Construction Contracting Companies).

الخبرة العملية:

٣٢ سنة خدمة وظيفية ، منها ١٦ سنة في شركة الفاو الهندسية العامة ، ١٦ سنوات في وزارة التعليم العالي والبحث العلمي .

التاريخ الظيفي:

اولا / شركة الفاو الهندسية العامة

١. **مشروع إعادة إعمار شركة بدر العامة**

الفترة	:	١٩٩١/١٠/١٥ لغاية ٢٥/ ١٩٩٢/٨
المنصب	:	مهندس موقع
المهندس المقيم	:	شركة بدر العامة

٢. **مشروع بلاط الشهداء**

الفترة	:	١٩٩٢/٩/١ لغاية ٢٠/ ١٩٩٣/٣
المنصب	:	مدير موقع
الجهة المستفيدة	:	منشأة بلاط الشهداء

٣. **مشروع الأنابيب المغلونة والسوداء**

الفترة	:	١٩٩٣/٤/١ لغاية ١٥/ ١٩٩٣/٨
المنصب	:	مدير موقع
الجهة المستفيدة	:	منشأة بدر العامة
المهندس المقيم	:	منشأة بدر العامة/ الدائرة الهندسية

٤. **مشروع ابن البيطار**

الفترة	:	١٩٩٣/٨/٢٥ لغاية ١٥/ ١٩٩٣/١٠
المنصب	:	مسؤول تخطيط ومتابعة
الجهة المستفيدة	:	وزارة الصناعة والمعادن

٥. **مشروع نهر ام المعارك**

الفترة	:	١٩٩٣/١٠/٢٠ لغاية ١٥/ ١٩٩٤/١
المنصب	:	مدير موقع
الجهة المستفيدة	:	وزارة الري

٦. **مشروع الصرف الصحي في الفلوجة**

الفترة : ١٩٩٤/١/٢٠ لغاية ٢٥/ ١٩٩٤/٤

المنصب : رئيس شعبة التخطيط ومتابعة

٧. **مشروع كاربونات الصود يوم**

الفترة : ١٩٩٤/٥/١ لغاية ١٥/ ١٩٩٤/٩

المنصب : رئيس قسم المتابعة التنفيذية

الجهة المستفيدة : وزارة الصناعة والمعادن

٨. **مشروع كلية الأركان**

الفترة : ١٩٩٤/٩/٢٠ لغاية ١٠/ ١٩٩٥/١

المنصب : مدير موقع

الجهة المستفيدة : وزارة الدفاع

المهندس المقيم : الأشغال العسكرية

٩. **المعامل الإنتاجية**

الفترة : ١٩٩٥/١/١٥ لغاية ١/ ١٩٩٦/١٠

المنصب : مدير ورشة الحدادة

١٠. **المعامل الإنتاجية**

الفترة : ١٩٩٧/٩/١٥ لغاية ١٠/ ٢٠٠٠/١

المنصب : مدير خباطة أبو غريب

١١. **المعامل الإنتاجية**

الفترة : ٢٠٠٠/١/١٥ لغاية ٢٥/ ٢٠٠١/٤

المنصب : مدير خباطة الزاخر

١٢. **المعامل الإنتاجية**

الفترة : ٢٠٠١/٥/١ لغاية ١٥/ ٢٠٠٢/٤

المنصب : مدير معامل التاجي للبناء الجاهز

ثانيا / وزارة التعليم العالى والبحث العلمى

١. **هيئة التعليم التقنى /معهد التكنولوجية _ - بغداد**

الفترة : ٢٠٠٦/٤/٢٥ لغاية ١/ ٢٠٠٧/٣

المنصب : مدرس مساعد

٢. **هيئة التعليم التقنى /المعهد التقنى - الانبار**

الفترة : ٢٠٠٧/٣/٢ لغاية ٢٠٠٩/٦/١

المنصب : مدرس

٣. **جامعة النهرين – كلية الهندسة – قسم الهندسة المدنى**

الفترة : ٢٠٠٩/٨/٢ لغاية ١٠/٦/ ٢٠١٣

المنصب : مدرس

٤. **جامعة النهرين – كلية الهندسة – قسم الهندسة المدنى**

الفترة : ١٠/٦/ ٢٠١٣ لغاية ٢٠١٥/٦/١٥

المنصب : رئيس قسم الهندسة المدنية

٥. **جامعة النهرين – كلية الهندسة – قسم الهندسة المدنى**

الفترة : ٢٠١٥/٦/١٥ لغاية الان

المنصب : تدريسي في قسم الهندسة المدنية

الدورات والمؤتمرات :

- عضو نقابة المهندسين العراقية
- دورة في تصميم القوالب القافزة والمنزلقة
- دورة عقود المقاولات الانشائية
- دورة في تصميم الخلطات الخرسانية
- دورة في ادارة المعدات الانشائية
- دورة في طرائق التدريس
- دورة في ال GIS
- دورة كفاءة حاسبات
- دورة ISO17025

كتب الشكر والتقدير:

- ٥ كتاب شكر وتقدير من السيد وزير التعليم العالي والبحث العلمي
- ٦ كتاب شكر وتقدير من السيد رئيس جامعة النهرين
- ٣ كتب شكر وتقدير من السيد مدير عام شركة الفاو الهندسية العامة
- 1 كتاب تثمين جهود من السيد رئيس جامعة النهرين

البحوث المنشورة:

1. **A Model Tool for predicting of Outdoor Air Temperatures on Construction Materials Manufacture performance in Baghdad.**
2. **Development Of The Construction Productivity Estimation Model Using Artificial Neural Network For Finishing Works For Floors With Marble.**
3. **Microclimatic Factors Effect on Productivity of Construction Industry.**
4. **Weather Effect on Workflow, and Labor Productivity of Construction Plant.**
5. **Assessment of Risk Management Practices in Construction Industry**
6. **Investigating the Critical Success Factors for Water Supply Projects: Case of Iraq**
7. **Identifying the key barriers and challenges of BIM implementation in the developing countries: case study of Iraq**
8. **Safety management in private construction project in Iraq**
9. **New Cost Control Techniques in Mega Construction Projects**
10. **GENETIC ALGORITHMS IN CONSTRUCTION PROJECT MANAGEMENT : A REVIEW**
11. **Improvement estimating of project cost and design for a hospital project by using (3D&5D) simulation**

12. Projects evaluation in construction industry

13. Artificial neural network model for removal of copper ions from pollutant solutions by olives seeds powder

14. Analyzing the Impact of the COVID-19 Pandemic Risks on Construction Projects in Developing Countries: Case of Iraq

15. Assessing the causes of construction projects delays in the developing countries: Case of Iraq

16. Prioritizing of Risk Factors by using Failure Mode and Effect Analysis in the Iraqi Construction Industry.

17. Using risk heat map approach as a tool to manage enterprise financial and zoning threats in the construction industry in Iraq

Curriculum Vitae

First name: Manahil Zayno Mohammed

Date of birth: 4/8/1974

Nationality: Iraqi

Specialization : artificial Intelligence

Work Address: Civil Engineering Department/ Al-Nahrain University Since 2003

Current Address: Baghdad /Al- Mansour

Email Address: manahil.zayno@nahrainuniv.edu.iq

EDUCATION

M. Sc. in College Of Science,2022 Al-Nahrain University ,Baghdad, Iraq.

B. Sc. Computer Science, 2012 College of Dijlah University, Baghdad, Iraq.

SKILLS AND INTERESTS

- Microsoft Office
- Programming (Visual Basic,)
- AutoCAD
- Formatting and installing Computers

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

العدد : ٥٢٢/٩/١

التاريخ : ٢٠٢١/١/١٤

أمــر جامعي

م/ ترقية الى مرتبة استاذ مساعد

استنـــادا الى مصادقة السيد رئيس الجامعة على الفقرة ثانياً (٤) من محضر الاجتماع الرابع للجنة المركزية للترقيـات العلمية المنعقد بتـاريخ ٢٠٢٠/١٢/٣٠ والى تعليمات الترقيات العلمية بالعـــــدد ١٦٧ عـــام ٢٠١٧ ، تـــقرر تـــرقية المدرس الدكتور **سلطان احمد داود** التدريسي في كلية الهندسة اختصاص هندسة مدنية – انشاءات الى مرتبة **استاذ مساعد** اعتبـارا من تاريخ تقديم طلب الترقية في **٢٠٢٠/٨/٩** استناداً الى المادة ٤ من التعليمات اعلاه ، على ان لاتترتب على ذلك اية تبعات مالية قبل صدور امرنا هذا.

أ.د. علــي عبد العزيــز الشـــاوي
رئيـــس الجامعـــة
٢٠٢١/ ١/ ٣

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ مايلزم .. مع التقدير
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ المساعد سلطان احمد داود / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

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جامعة النهرين / شعبة الترقيات العلمية
العراق - بغداد - الجادرية - ص.ب ٦٤٠٧٤

بسم الله الرحمن الرحيم

جمهورية العراق
وزارة التعليم العالي والبحث العلمي

جامعة النهرين
(مكتب رئيس الجامعة)

Republic of Iraq
Ministry of Higher Education and Scientific Research
Nahrain University
(President Office)

Ref.:
Date: / /

العدد: ٣/ س/ ٢/ ٥٣
التاريخ: ١٤ / ٦ / ٢٠١١م
الموافق: / / ١٤هـ

الو ٢٠٠٥
التار ١٥/ ٦/ ٢٠١١

أمـــــر جامعـــــي

م/ **ترقية الى مرتبة أستاذ مساعد**

أستنادا الى قرار مجلس الجامعة بجلسته السادسة عشرة المنعقدة بتاريخ ٢٠١١/٦/٧، تقرر ترقية المدرس الدكتورة أسماء ثامر أبراهيم التدريسية في كلية الهندسة الى مرتبة أستاذ مساعد أعتبارا من تاريخ تقديمها لطلب الترقية في ٢٠٠٩/٩/٦،أستنادا الى تعليمات الترقيات العلمية بالعدد ٣٦ لعام ١٩٩٢، على ان لايترتب على ذلك أية تبعات مالية قبل صدور أمرنا هذا.

أ.د. محمد جابر علي
رئيس الجامعة
/ حزيران/٢٠١١م

نسخة منه الى /
مكتب السيد رئيس الجامعـــة
السيد مساعد رئيس الجامعة للشؤون العلمية
عمادة كلية الهندسة / لأتخاذ اللازم ..مع التقدير.
اللجنة المركزية للترقيات العلمية / اشارة الى الفقرة (خامسا) من محضر الأجتماع التاسع للجنة المركزية للترقيات العلمية المنعقد بتاريخ ٢٠١١/٥/٣٠ مع التقدير.
وحدة الدراسات والتخطيط/ قاعدة البيانات
الأستاذالمساعدالدكتورة أسماء ثامر ابراهيم/مع التبريكات الخالصة متمنين لكم أستمرار العطاء العلمي ومزيدا من النجاح.
شعبة أمانـــة مجلس الجامعة

بسم الله الرحمن الرحيم

العدد: ١/٦/٦٢٢٢
التاريخ: ١٤/٥/٢٠١٩

أمـــر جامعي

م/ ترقية الى مرتبة استاذ مساعد

استنـــاداً الى قرار مجلس الجامعة بجلسته الخامسة عشرة المنعقدة بتاريخ 2019/5/6 للعام الدراسي 2018- 2019، تقرر تـرقية المدرس الدكتور **عبد الخالق جبار عبد الرضا** التدريسي في كلية الهندسة اختصاص هندسة مدنية – هندسة بناء وانشاءات الى مرتبة **استاذ مساعد** اعتبـارا من تاريخ تقديم طلب الترقية في **2018/11/1** وفقاً للمادة 4 من تعليمات الترقيات العلمية رقم 167 لعام 2017 على ان لاتترتب على ذلك ايـة تبعات مالية قبل صدور امرنا اعلاه.

أ.د. نبيل كاظم عبد الصاحب
رئيس الجامعة / وكالةً
2019 / ٥ / ١٣

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع ... مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ مايلزم ... مع التقدير.
- اللجنة المركزية للترقيات العلمية /اشارة الى الفقرة (ثانياً-7) من محضر الاجتماع السادس للتفضل بالاطلاع واتخاذ اللازم..مع التقدير.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ المساعد الدكتور عبد الخالق جبار عبد الرضا / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي ومزيدا من النجاح.
- الصادرة.

Republic Of Iraq
Ministry Of Higher Education
& Scientific Research
Al-Nahrain University
Department of postgraduate studies

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
قسم الدراسات العليا

العدد: ٢/٣/٦٣٨٤
التاريخ: ٢٠٢٢/٥/١٢
١١/ شوال/ ١٤٤٣هـ

امــــر جامعــــي

م/ منح شهادة ماجستير

بناءً على إكمال الطالبة **مناهل زينو محمد** متطلبات الدراسة العليا بنجاح، وتوصية مجلس كلية العلوم المتخذة بجلسته السابعة المفتوحة (الاجتماع السادس) المنعقدة بتاريخ ٢٠٢٢/٤/٦م، واستناداً الى الصلاحيات المخولة لنا، قررنا منحها شهادة ماجستير علوم/ الحاسوب بتقدير جيد مع تمتعها بالحقوق والامتيازات التي تخولها إياها هذه الشهادة اعتباراً من تاريخ صدور الامر الجامعي اعلاه .

رئاسة الجامعة
جامعة النهرين
شؤون الدراسات العليا

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
١١/ ايار/٢٠٢٢م

نسخة منه الى /
عمادة كلية العلوم / إشارة الى كتابكم ذي العدد (ع ص/٩٢/١/١/١ في ٢٠٢٢/٤/٢٦) مع التقدير
قسم شؤون الاقسام الداخلية / للتفضل بالاطلاع .. مع التقدير
قسم شؤون الدراسات العليا / للحفظ مع الاوليات
الطالبة المتخرجة / مع التمنيات بالموفقية والنجاح

هدى٥/١٠

التاريخ: / /

ت	الاسم الثلاثي	الدرجة والمرحلة الوظيفية	العنوان الوظيفي واللقب العلمي	الراتب الاسمي	المخصصات الجامعية	مخصصات الشهادة	مكان العمل
٨٠.	زينة مرشد كاظم	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	كلية الطب
٨١.	سارة جواد كاظم	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	مركز بحوث التقنيات الاحيائية
٨٢.	سارة صائب رشيد	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	مركز بحوث التقنيات الاحيائية
٨٣.	ايناس صادق عبد الكريم	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	مركز بحوث التقنيات الاحيائية
٨٤.	زينب ابراهيم علوان	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	كلية الصيدلة
٨٥.	نور فؤاد محمد	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	كلية الطب
٨٦.	سامر حسين علي	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	كلية الهندسة
٨٧.	كرم قيس ناجي	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	كلية الهندسة
٨٨.	ايمان خالد خلف	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	كلية العلوم
٨٩.	عربي شنين محمد خلف	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	كلية العلوم السياسية
٩٠.	ندى حسن محمد	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	مركز الدنا العدلي
٩١.	حسين علي مشوت	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	مكتب المساعد الاداري
٩٢.	حيدر عبد الحميد محمد	السادسة/٣	مدرس مساعد	٣٧٤,٠٠٠	١٠٠%	٧٥%	كلية الهندسة

العدد : ١/٩/١/٦٦٧٧ التاريخ : ٤/٨/٢٠٢١

أمـــر جامعي

م/ ترقية الى استاذ مساعد

استنادا الى مصادقة السيد رئيس الجامعة على الفقرة ثانياً /٤ من محضر الاجتماع الثالث عشر للجنة الترقيات العلمية المركزية للعام الدراسي ٢٠٢٠- ٢٠٢١، المقترنة بقرار مجلس الجامعة على الفقرة رابعا /١١/ من جلسته العاشرة للعام الدراسي ٢٠٢٠-٢٠٢١ تقرر ترقية المدرس الدكتور **حسن موسى جواد التريسي** في كلية الهندسة اختصاص **هندسة مدني - طرق ومواصلات** الى مرتبة **استاذ مساعد** اعتبارا من تاريخ استكمال متطلبات معاملة الترقية في ٢٠٢٠/٧/٨ واستناداً الى تعليمات الترقيات العلمية رقم ١٦٧ لسنة ٢٠١٧ النافذة على ان لا تترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
٢٠٢١/٨/٤

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- اللجنة المركزية للترقيات العلمية / للحفظ
- كلية الهندسة / للتفضل بالاطلاع واتخاذ ما يلزم ... مع التقدير
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم .. مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ المساعد الدكتور حسن موسى جواد / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

جامعة النهرين / شعبة الترقيات العلمية
العراق - بغداد - الجادرية - ص.ب ٦٤٠٧٤
Al-Nahrain University \ Scientific Promotions Division
Al-Nahrain University, Jadriah, Baghdad, Iraq
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جامعة النهرين
كلية الهندسة
مكتب العميد

العدد: هـ. ن/١/١/٣٦٣٧ التاريخ: ٧/٨/٢٠٢٣م

أمـــــر إداري

م/ تثبيت لقب (مدرس مساعد)

استنادًا الى الامر الجامعي ذي العدد (6064/2/3) المؤرخ في 2023/6/7 والحاقا بالامر الجامعي ذي العدد (3942/2/3) في 2023/4/12 والفقرة (1) من امرنا الاداري ذي العدد (هـ.ن/1/1/3093) في 2023/6/11 والى الامر الاداري الصادر من كلية الاسراء الجامعة الاهلية ذي العدد (ش أ/846) المؤرخ في 2017/3/18 والى الصلاحيات المخولة لنا تقرر:-

تثبيت اللقب العلمي (**مدرس مساعد**) للسيدة (مسرة جلاء يحيى) التدريسية على ملاك كليتنا / قسم الهندسة المدنية لحصوله على شهادة الماجستير علوم في الهندسة الكهربائية / قدرة ومكائن بموجب الامر الجامعي ذي العدد (د.ع/2496) المؤرخ في 2016/7/18 الصادر من جامعة بغداد / قسم شؤون الدراسات العليا وبدون تبعات مالية لحين اقرار الموازنة العامة لسنة 2023 او ورود تعليمات بشأن ذلك واعتبارا من **2017/1/21** تاريخ منح اللقب بموجب الامر الاداري اعلاه الصادر من كلية الاسراء الجامعة الاهلية وليس من تاريخ المباشرة بالتعيين في 2023/4/3 .

أ.د. باسم عبيد حسن
العميد
٦/اب/2023

نسخة عنه /

- رئاسة الجامعة / قسم الادارية والمالية / شعبة شؤون التدريسيين/ اشارة الى امركم الجامعي اعلاه/للاطلاع ... مع التقدير.
- السيد معاون العميد للشؤون الإدارية والمالية .. للتفضل بالاطلاع .. مع التقدير.
- قسم الهندسة المدنية / للتفضل بالاطلاع ... وابلاغ الموما اليها.... مع التقدير
- لجنة الترقيات العلمية / السيد رئيس اللجنة المحترم ... للتفضل بالاطلاع ... مع التقدير
- شعبة الموارد البشرية / الافراد / العلاوات / لاتخاذ مايلزم .. مع التقدير.
- شعبة الحسابات / الرواتب /لاتخاذ مايلزم بشأن صرف مخصصات اللقب العلمي اعتبارا من تاريخ المباشرة بالتعيين في 2023/4/3 / واعلامنا اجراءاتكم ... لطفا
- شعبة الرقابة والتدقيق .. مع التقدير.
- شعبة الدراسات والتخطيط / للتأشير لطفا.
- الاضبارة الشخصية / للحفظ .. لطفا.

ضياء 2023/8/6

Al-Nahrain University \ College of Engineering
P.O.Box: (64040) Jadriah , Baghdad , Iraq
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جامعة النهرين / كلية الهندسة
العراق - بغداد - الجادرية - ص.ب: ٦٤٠٤٠

Ministry of Higher Education & scientific Research
AL-Muthan'na university
Central scientific upgrading & Confirmation Committee

بسم الله الرحمن الرحيم

وزارة التعليم العالي والبحث العلمي
جامعة المثنى
لجنة الترقيات العلمية والتعضيد المركزية
العدد/ ٥٠١
التاريخ/ ١٧ /1/ 2012

رئاسة جامعة المثنى
الصادرة
العدد/
التاريخ/ ٢٠

أمر جامعي

م /ترقية إلى المرتبة الأستاذية

بناءأ على ماجاء بمحضر مجلس الجامعة بجلسته الثالثة والمنعقدة بتاريخ 2011/11/22 الفقرة (ثالثاً – 1) والمقترنة بمصادقة وزير التعليم العالي والبحث العلمي بموجب كتاب الوزارة /هيئة الرأي ذي العدد 12 س / 3487 في 2011 /12/28 وعملاً باحكام تعليمات الترقيات العلمية رقم 36 لسنة 1992 وتعديلاته ..تقرر ترقية الدكتور عبد العزيز عبد الرسول عزيز الكفائي/ الأستاذ المساعد في كلية الهندسة / قسم المدني بجامعتنا إلى مرتبة الاستاذية واعتباراً من تاريخ تقديم الطلب في 2010/7/7 م على أن لا يترتب على الجامعة أي تبعات مالية قبل صدور هذا الأمر..

أ.م.د.عز الدين ابو التمن
رئيس الجامعة
١٧/1/2012 م

نسخه منه إلى//

- مكتب السيد رئيس الجامعة/للتفضل بالاطلاع...مع التقدير.
- مكتب المساعد الاداري/للتفضل بالاطلاع...مع التقدير.
- مكتب المساعد العلمي/ للتفضل بالاطلاع...مع التقدير.
- عمادات الكليات كافة/ للتفضل بالاطلاع...مع التقدير.
- أمانة مجلس الجامعة/السيد أمين المجلس/للتفضل بالاطلاع ...مع التقدير.
- قسم الشؤون الادارية.
- وحدة قاعدة البيانات والمعلومات.
- قسم الشؤون المالية.
- قسم الرقابة والتدقيق الدخلي.
- لجنة الترقيات العلمية والتعضيد المركزية /جامعة المثنى/للتفضل بالاطلاع ...مع التقدير.
- الأستاذ الدكتور عبد العزيز عبد الرسول عزيز الكفائي مع خالص أمنياتنا بالتوفيق.
- الصادرة.

ورود

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

العدد : ١١٠٦٤/٩/١ التاريخ : ٢٠٢١/١١/٣

أمــر جامعي

م/ ترقية الى مرتبة استاذ

استـــنادا الى مصادقة مجلس الجامعة بجلسته الثالثة المنعقدة بتاريخ 2021/10/19 للعام الدراسي 2021 -2022 على الفقرة ثانياً -4 من محضر الاجتماع الثاني للجنة الترقيات العلمية المركزية للعام الدراسي 2021-2022 تقرر ترقية الأستاذ المساعد الدكتور **مصعب عايد كصب** التدريسي في كلية الهندسة اختصاص **هندسة مدنية – هندسة انشاءات** الى مرتبة **استاذ** اعتبارا من تاريخ استكمال متطلبات معاملة الترقية في **2021/6/22** استناداً الى المادة -4 من تعليمات الترقيات العلمية رقم 167 لسنة 2017 النافذة على ان لا تترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
2021/١١/٨

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع ... واتخاذ مايلزم ... مع التقدير
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك.. للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ الدكتور مصعب عايد كصب / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

Al-Nahrain University \ Scientific Promotions Division
P.O.Box: (64074) Jadriah , Baghdad , Iraq
E-Mail: sci.promotions.div_off@nahrainuniv.edu.iq
http://www.nahrainuniv.edu.iq
جامعة النهرين / شعبة الترقيات العلمية
العراق - بغداد - الجادرية - ص ب: ٦٤٠٧٤

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

جمهورية العراق - وزارة التعليم العالي والبحث العلمي

العدد : ١/٩/١٣٨٣١
التاريخ : ٢٠٢١/١٢/٣٠

أمـــر جامعي

م/ ترقية الى مرتبة مدرس

استنــادا الى مصادقة السيد رئيس الجامعة على الفقرة -١١ من محضر الاجتماع الخامس للجنة الترقيات العلمية المركزية للعام الدراسي ٢٠٢١- ٢٠٢٢، تقرر ترقية **المدرس المساعد دعاء عبد الرزاق فالح** التدريسية في كلية الهندسة تخصص **هندسة مدنية – هندسة جيوتكنيكية** الى مرتبة **مدرس** اعتباراً من تاريخ تقديم الطلب في ٢٠٢١/٧/١٣ أستناداً الى تعليمات الترقيات العلمية رقم ١٦٧ لسنة ٢٠١٧ على ان لا تترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
٢٠٢١/١٢/٣٠

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ مايلزم ... مع التقدير
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك.. للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- م. دعاء عبد الرزاق فالح / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادر

Republic of Iraq
Ministry of Higher Education
and Scientific Research
Al – Nahrain University

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
قسم الشؤون الادارية

No. : العدد: ٩٠١/١/٢٩٦٩
Date: التاريخ: ٢٠٠٨/٤/١٧

أمـر جامعي

استناداً لأحكام المادة ٢٥/١ من قانون وزارة التعليم العالي والبحث العلمي رقم ٤٠ لسنة ١٩٨٨ تقرر

١- منح الآنسة هبة عماد عباس الموظفة بعنوان (م . مهندس) في كلية الهندسة لقب (مدرس مساعد) لحصولها على شهادة الماجستير بموجب الأمر الجامعي المرقم ٣٠١٢/٥/٢ في ٢٠٠٨/٣/١٦ على ان تجتاز دورة طرائق التدريس واختبار الصلاحية خلال سنة

٢- يعدل راتبها ليكون ضمن الدرجة السادسة / المرحلة الأولى بمقدار (٢٦٠٠٠٠) مائتان وسبعون الف دينار شهرياً

ينفذ هذا الأمر اعتباراً من تاريخ حصولها على الشهادة في ٢٠٠٨/٣/١٦ .

د. عماد عبد اللطيف سالم
عـ . رئيس الجامعة
/ / ١٤٢٩هـ
١٧/ ٤/ ٢٠٠٨م

نسخة الى/
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير .
- مكتب السيد مساعد رئيس الجامعة للشؤون الادارية / للتفضل بالاطلاع ... مع التقدير .
- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع ... مع التقدير .
- كلية الهندسة / كتابكم هـ / ٦٤٢ في ٢٠٠٨/٤/١٠ .. مع التقدير .
- قسم الشؤون الادارية / شعبة التدريسين / مع الاوليات .
- قسم الشؤون المالية .
- قسم التدقيق والرقابة الداخلية .
- وحدة قاعدة البيانات .

سارة ٤/١٦
٤/١٦

AL – Jadria , Baghdad , Iraq
Tel . ٧٧٨٨٧٨٦ - ٧٧٨٢٥٦٤ - ٧٧٨٦٤٦٧ Fax ٧٧٨٠٢٩٧ P. O. Box : ٦٤٠٧٤

بسم الله الرحمن الرحيم

Republic of Iraq
Ministry of Higher Education
and Scientific Research
Al-Nahrain University
Central Scientific Promotion Committee

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
اللجنة المركزية للترقيات العلمية

١١٦
سكرتارية

العدد : ١/٦/١٣٩٥٦
التاريخ : ٢٠١٨/١٠/١٧

جامعة النهرين
عمادة كلية الهندسة
الواردة : ٤٢٧٠
التاريخ : ٢٠١٨/١١/٦

أمـــر جامعي

م/ ترقية الى مرتبة مدرس

استنادا الى توصية اللجنة المركزية للترقيات العلمية بالفقرة (16) من محضر اجتماعها الاول المنعقد بتاريخ 2018/9/27 والى تعليمات الترقيات العلمية بالعدد 36 عام 1992، تقرر ترقية المدرس المساعد ازهر صادق ياسين التدريسي في كلية الهندسة اختصاص هندسة مدنية الى مرتبة مدرس اعتبارا من تاريخ تقديم طلب الترقية في 2017/11/26 على ان لاتترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

[redacted]

أ.د. نبيل كاظم عبد الصاحب
رئيس الجامعة / وكالة
2018/١٠/١٦

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ اللازم...مع التقدير.
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- المدرس ازهر صادق ياسين / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي ومزيدا من النجاح.
- الصادرة.

لجنة الترقيات العلمية
المحترم
للتفضل بالاطلاع
مع التقدير

جامعة النهرين
كلية الهندسة
مكتب العميد

جمهورية العراق - وزارة التعليم العالي والبحث العلمي - جامعة النهرين

العدد: التاريخ:

أمــر إداري

م/ ترقية الى مرتبة (استاذ مساعد)

- استنادًا الى الأمر الجامعي ذي العدد (٢٦٦٢/٩/١) المؤرخ في ٢٠٢٣/٣/٧، والى الصلاحيات المخولة لنا تقرر: -

١- ترقية المدرس الدكتورة (**زينة رياض صالح**) التدريسية على ملاك كليتنا / قسم الهندسة المدنية في اختصاص **هندسة مدنية -انشاءات** الى مرتبة (**استاذ مساعد**) اعتبارًا من تاريخ تقديم البحث التعزيزي في ٢٠٢٢/٤/١٤ واستنادًا الى تعليمات الترقيات العلمية رقم ١٦٧ لسنة ٢٠١٧ النافذة على أن لا يترتب على ذلك اية تبعات مالية قبل صدور الأمر الجامعي اعلاه.

٢- بتمنح مخصصات اللقب العلمي والبالغة (٣٥)% من الراتب الاسمي استنادًا الى احكام المادة (٢/خامسًا) من قانون التعديل الاول المرقم (١) لسنة ٢٠١٤ لقانون الخدمة الجامعية رقم (٢٣) لسنة ٢٠٠٨.

٣- ينفذ هذا الأمر اعتبارًا من تاريخ صدور الأمر الجامعي في ٢٠٢٣/٣/٧.

أ.د. باسم عبيد حسن
العميد
/اذار/٢٠٢٣

نسخة عنه /

- السيد معاون العميد للشؤون الإدارية المحترم .. للتفضل بالاطلاع .. مع التقدير.
- قسم الهندسة المدنية .. للتفضل بالاطلاع .. مع التقدير.
- الاستاذ المساعد الدكتورة (زينة رياض صالح) / مبارك .. مع التهاني ودعاءنا لكم بالموفقية في مسيرتكم العلمية..مع التقدير.
- الشعبة الإدارية والمالية / الحسابات / لاتخاذ مايلزم .. مع التقدير.
- الشعبة الإدارية والمالية / الافراد / مع الاوليات .. مع التقدير.
- شعبة الرقابة والتدقيق
- شعبة الدراسات والتخطيط / للتأشير..لطفًا.
- امانة مجلس الكلية..للتفضل بالاطلاع .. مع التقدير.
- الاضبارة الشخصية / للحفظ..لطفًا.

منى ٢٠٢٢/٣/١٢

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

العدد : ١/٩/٦٧ التاريخ : ١٧ / ١ / ٢٠٢٢

أمــر جامعي

م/ ترقية الى مرتبة استاذ

استنادا الى مصادقة مجلس الجامعة بجلسته السادسة المنعقدة بتاريخ ٢٠٢٢/١/١٠ للعام الدراسي ٢٠٢١ -٢٠٢٢ على الفقرة اولاً -٤ من محضر الاجتماع الخامس للجنة الترقيات العلمية للعام الدراسي ٢٠٢١-٢٠٢٢، تــقرر ترقية الاستاذ المساعد الدكتور **حاتم عبد الكريم رشيد التدريسي** في كلية الهندسة اختصاص هندسة مدنية – ادارة مشاريع الى مرتبة استاذ اعتبارا من تاريخ تقديم الطلب في ٢٠٢١/٦/١ واستناداً الى المادة ٤ من تعليمات الترقيات العلمية رقم ١٦٧ لسنة ٢٠١٧ على ان لا تترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
٢٠٢٢/١/١٦

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ مايلزم .. مع التقدير
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك.. للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ الدكتور حاتم عبد الكريم رشيد / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

MINISTRY OF HIGHER EDUCATION & SCIENTIFIC RESEARCH

UNIVERSITY OF BAGHDAD

COLLEGE OF ENGINEERING

Higher Education Unit & Scientific Research

وزارة التعليم العالي والبحث العلمي

جامعة بغداد

عمادة كلية الهندسة

الدراسات العليا والبحث العلمي

العدد: ٣/٧/٨٥٢

التاريخ: ٩/٥/٢٠٠٦م

الموافق: هـ

تأييد تخرج

نؤيد لكم بأن السيد **ليث خالد كامل الحديثي** الملصقة صورته أعلاه أكمل متطلبات الدراسة ومنح درجة الدكتوراه في فلسفة الهندسة المدنية/إنشاءات بموجب الأمر الجامعي ذي العدد ٧٤٣٠ في ١٩٩٩/٦/١٠ وبمعدل ٨٤،٨% (جيدجداً).

أ.د. علي عبدالصالح الكليدار
العميد

أ.م.د. قاسم محمد دوس
معاون العميد

العراق - بغداد - الجادرية - ص.ب: 47024 هاتف: 7788504

e-mail: bceic@yahoo.com

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
قسم الموارد البشرية

Republic of Iraq
Ministry of Higher Education & Scientific Research
Al-Nahrain University
Department of Human Resource

العدد 1/3 / ٢٤٦٧
التاريخ ٨ - ١ - ٢٠١٧

Ref جامعة النهرين
Date: عمادة كلية الهندسة
الواردة : ١٢٦
التاريخ : / / ٢٠١٧

امر جامعي

استنادا لاحكام الفقرة(١) من المادة (٢٦) من قانون التعليم العالي والبحث العلمي رقم (٤٠) لسنة ١٩٨٨ المعدل تقرر ما ياتي :-
يمنح المدرس المساعد (مصطفى كمال محمود) عضو الهيئة التدريسية في كلية الهندسة /جامعتنا لقب (مدرس) لحصوله على شهادة الدكتوراه في اختصاص الهندسة المدنية / انشاءات بموجب قرار تقييم الشهادة المرقم ٢٤٣١٦ ذي العدد ص ب/٢٨٠٣٢/٢٣ المؤرخ في ٢٠١٦/١١/٧ الصادر من وزارة التعليم العالي والبحث العلمي/دائرة البعثات والعلاقات الثقافية .

ينفذ هذا الامر اعتباراً من تاريخ حصوله على الشهادة ٢٠١٦/١١/٧ .

أ.د. نبيل كاظم عبد الصاحب
رئيس الجامعة
٢٠١٧/١/٥م

قسم هندسة المدنية للعمل
م.د. علاء رياض زاهر
م.د. اسماعيل
٢٠١٧/١/١١

نسخة منه الى/
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع ... مع التقدير .
- مكتب السيد مساعد رئيس الجامعة للشؤون الادارية / للتفضل بالاطلاع ... مع التقدير.
- كلية الهندسة / اشارة الى كتابكم هـ/٥٠١٩ المؤرخ في ٢٠١٦/١٢/٢٧ للتفضل بالاطلاع ... مع التقدير .
- قسم الشؤون المالية / للاطلاع ... لطفا .
- قسم الرقابة والتدقيق الداخلي / للاطلاع ... لطفا .
- قسم الدراسات والتخطيط والمتابعة / للاطلاع ... لطفا .
- قسم الموارد البشرية / الملاك للتاشير ... لطفا .
- قسم الموارد البشرية / شعبة الموظفين / مع الاوليات ... لطفاً .

نسخة منه الى
د. مصطفى كمال
الف مبروك

د. اسماعيل
١١/١/

نـدى ٢٠١٧/١/٤

رئاسة جامعة النهرين ص.ب ٦٤٠٧٤ الجادرية ،بغداد العراق alnahrain_online@yahoo.com
p.o. Box 64074 Jadriah,Baghdad,Iraq

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

العدد : ٢٠٠/١/٩/٢٨٢٨ التاريخ : ٢٠٢٠/٥/١٤

أمــر جامعي

م/ ترقية الى مرتبة استاذ مساعد

استنــادا الى مصادقة السيد رئيس الجامعة على الفقرة (4) من محضر الاجتماع الثامن للجنة المركزية للترقيات العلمية المنعقد يوم الاربعاء الموافق 2020/4/29 للعام الدراسي 2019-2020، تقرر ترقية المدرس الدكتور **مصطفى كمال محمود** التدريسي في كلية الهندسة اختصاص **هندسة مدني / انشاءات الى مرتبة استاذ مساعد** اعتبـارا من تاريخ تحديث المعاملة في **2020/1/5** واستناداً الى الفقرة (4) من تعليمات الترقيات العلمية رقم 167 لسنة 2017 يمنح الموما اليه قدما لمدة عشرة اشهر ويومان على ان لا تترتب على ذلك ايـة تبعات مالية قبل صدور امرنا اعلاه.

أ.د. محمد صاحب مهـدي الطائي
رئيس الجامعة / وكالةً
2020 / ٥ / ١٤

اللجنة المركزية للترقيات العلمية
جامعة النهرين

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ ما يلزم .. مع التقدير
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ المساعد الدكتور مصطفى كمال محمود / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

ط/احمد

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E-Mail: sci.promotions.div_off@nahrainuniv.edu.iq
http://www.nahrainuniv.edu.iq
جامعة النهرين / شعبة الترقيات العلمية
العراق - بغداد - الجادرية - ص.ب: ٦٤٠٧٤

العدد : ٢٠٠/ ١/ ٩/ ٢٨٢٨ التاريخ : ١٤/ ٥/ ٢٠٢٠

أمـــر جامعي

م/ ترقية الى مرتبة استاذ مساعد

استنـــادا الى مصادقة السيد رئيس الجامعة على الفقرة (4) من محضر الاجتماع الثامن للجنة المركزية للترقيات العلمية المنعقد يوم الاربعاء الموافق 2020/4/29 للعام الدراسي 2019-2020، تقرر ترقية المدرس الدكتور **مصطفى كمال محمود** التدريسي في كلية الهندسة اختصاص هندسة مدني / انشاءات الى **مرتبة استاذ مساعد** اعتبـارا من تاريخ تحديث المعاملة في **2020/1/5** واستناداً الى الفقرة (4) من تعليمات الترقيات العلمية رقم 167 لسنة 2017 يمنح الموما اليه قدما لمدة عشرة اشهر ويومان على ان لا تترتب على ذلك ايـة تبعات مالية قبل صدور امرنا اعلاه.

أ.د. محمد صاحب مهـدي الطائي
رئيس الجامعة / وكالةً
2020 / ٥/ ١٤

اللجنة المركزية للترقيات العلمية
جامعة النهرين

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ ما يلزم .. مع التقدير
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ المساعد الدكتور مصطفى كمال محمود / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

ط/احمد

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العراق - بغداد - الجادرية - ص.ب: ٦٤٠٧٤

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

العدد: ٤٦٢/٩/١ التاريخ: ٢٠٢٤/١/٨

أمـــر جامعي

م/ ترقية الى مرتبة الاستاذية

استنادا الى مصادقة مجلس الجامعة الموقر بجلسته الخامسة المنعقدة بتاريخ 2024/1/2 للعام الدراسي 2023 -2024 على الفقرة ثانياً -2 من محضر الاجتماع الثالث للجنة الترقيات العلمية المركزية للعام الدراسي 2023-2024 تــقرر تــرقية الاستاذ المساعد الدكتور **احمد فالح احمد فاضل** التدريسي في كلية الهندسة تخصص هندسة مدنية / هندسة انشاءات الى مرتبة استاذ اعتبارا من تاريخ تقديم البحث التعزيزي في **2023/7/23** استناداً الى المادة 4 من تعليمات الترقيات العلمية رقم 167 لسنة 2017 على ان لا تترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
2024 / ١ / ٨

نسخة منه الى
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ مايلزم .. مع التقدير
- اللجنة المركزية للترقيات العلمية / للحفظ
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان الجودة والأداء الجامعي / للتفضل بالعلم مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ الدكتور احمد فالح احمد فاضل / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

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جامعة النهرين / شعبة الترقيات العلمية
العراق - بغداد - الجادرية - ص ب ٦٤٠٧٤

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

العدد : ١/٩/٢٩٤٥ التاريخ : ٢٠٢٢/٥/٣١

أمـــر جامعي

م/ ترقية الى مرتبة مدرس

استنـــادا الى مصادقة السيد رئيس الجامعة على الفقرة ثانياً /١٧ من محضر الاجتماع العاشر للجنة الترقيات العلمية المركزية للعام الدراسي ٢٠٢١- ٢٠٢٢ ، تقرر ترقية المدرس المساعد **نورة سعد فرج** التدريسية في كلية الهندسة اختصاص **الهندسة / الهندسة البيئية** الى مرتبة **مدرس** اعتبارا من تاريخ تقديم طلب الترقية في **٢٠٢١/٨/٢** واستناداً الى تعليمات الترقيات العلمية رقم ١٦٧ لسنة ٢٠١٧ النافذة على ان لا تترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه. ..

أ.د. علـي عبد العزيـــز الشـاوي
رئيـــس الجامعــــة
٢٠٢٢/٥/٢٩

نسخة منه الى
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ مايلزم .. مع التقدير .
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير.
- المدرس نورة سعد فرج/ مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

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جامعة النهرين / شعبة الترقيات العلمية
العراق - بغداد - الجادرية - ص.ب: ٦٤٠٧٤

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

العدد : ١/٩/ ٨٨٩٥ التاريخ : ٢٠٢١/٩/٧

أمـــر جامعي

م/ ترقية الى مرتبة استاذ

استـــنادا الى مصادقة مجــلس الجــامعة بجــلسته الرابعة عشر المفتوحة / الاجتماع الثاني المنعقدة بتاريخ ٢٠٢١/٨/١٦ على الفقرة ثانيا /١ من محضر الاجتماع الثالث عشر للجنة الترقيات العلمية المركزية للعام الدراسي ٢٠٢٠ -٢٠٢١ ، تــقرر تــرقية الاستاذ المـــساعد الدكتـــور **محمد عبد الخالق ابراهيم التـــدريسي** في كلـــية الهنـــدسة اختصـــاص **هندسة مدنية – هندسة بيئية** الى مرتبة **استاذ** اعتبـارا من تاريخ تقديم الطلب في **٢٠٢١/٣/٢٢** واستناداً الى المادة -٤ من تعليمات الترقيات العلمية رقم ١٦٧ لسنة ٢٠١٧ النافذة على ان لا تترتب على ذلك ايـة تبعات مالية قبل صدور امرنا اعلاه.

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
٢٠٢١/٩/٥

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع .. مع التقدير
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ الدكتور محمد عبد الخالق ابراهيم / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

٢٠٢١/٨/٢٦

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جامعة النهرين / شعبة الترقيات العلمية
العراق - بغداد - الجادرية - ص.ب: ٦٤٠٧٤

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

جمهورية العراق - وزارة التعليم العالي والبحث العلمي جمهورية العراق - وزارة التعليم العالي والبحث العلمي جمهورية العراق - وزارة التعليم العالي والبحث العلمي

العدد : ت ع/١٩١/١٠٨١
التاريخ : ٢٠٢١/٣/٨

أمــر جامعي

م/ ترقية الى مرتبة استاذ مساعد

استنــادا الى مصادقة السيد رئيس الجامعة على الفقرة ثانياً /٩ من محضر الاجتماع السادس المفتوح للجـنـة المركزية للترقيـات العلمية المنعقد بتـاريخ ٢٠ و٢٠٢١/٢/٢٧ والى تعليمات الترقيات العلمية بالعــــدد ١٦٧ عــام ٢٠١٧ ، تـــقرر تـــرقية المدرس الدكتور **رائد احمد داود** التدريسي في كلية الهندسة اختصاص هندسة مدنية -انشاءات الى مرتبة **استاذ مساعد** اعتبارا من تاريخ تقديم النشاطات التعزيزية في ٢٠٢٠/١٢/٣٠، على ان لاتترتب على ذلك اية تبعات مالية قبل صدور امرنا هذا.

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
٢٠٢١ / ٣/٤

مع التقدير
لش.ب.م/ (١) نسخة الى د.رائد احمد داود
ترقية لغرض ...

نسخة منه الى
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ مايلزم .. مع التقدير
- اللجنة المركزية للترقيات العلمية / للحفظ
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم .مع التقدير.
- قسم ادارة الموارد البشرية / شعبة املاك.. للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ المساعد الدكتورة رائد احمد داود / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

Republic of Iraq
Ministry of Higher Education
and Scientific Research
Al-Nahrain University
Central Scientific Promotion Committee

جمهورية العراق
وزارة التعليم العالي و البحث العلمي
جامعة النهرين
اللجنة المركزية للترقيات العلمية

العدد : ١٠/٦/١٤٦٧٢
التاريخ : ١٢/ ١١ /٢٠١٩

٤٤٨٠
٢٠١٩/١١/١٤

أمـــر جامعي

م/ ترقية الى مرتبة مدرس

استنـادا الى توصـية اللجـنة المركزية للترقيـات العلمية بالفقرة **(9)** مـن محضر اجتماعها **الثاني** المنعقد بتـاريخ **2019/10/24** والى تعليمات الترقيات العلمية بالعــــدد 167 عـــام 2017، تـــقرر تـــرقية المدرس المســـاعد زاهر نوري **محمد تقي** التدريسي في كلية الهندسة اختصاص هندسة – هندسة مدنية الى مرتبة **مدرس** اعتبارا من تاريخ تقديم طلب الترقية في **2019/6/16** على ان لاتترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

أ.د. محمد صاحب مهـدي الطائي
رئيس الجامعة / وكالة
2019 / ١١ / ١١

(١) - المعاون الاداري / موارد بشرية
شعبة دراسات وتخطيط
- المعاون العلمي
- امانة المجلس
- القسم المختص
٢٠١٩/١١/١٢

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ مايلزم .. مع التقدير
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- المدرس زاهر نوري محمد تقي / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي ومزيدا من النجاح.
- الصادرة.

(٢) السيد المدير المحترم
للتفضل بالاطلاع .. واتخاذ ما
مع الايعاز الى السكرتارية
للعمل بموجبه .. مع التقدير
٢٠١٩/١١/١٧

السكرتارية
للعمل بموجبه التنفيذ
٢٠١٩/١١/١٨

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

جمهورية العراق - وزارة التعليم العالي والبحث العلمي جمهورية العراق - وزارة التعليم العالي والبحث العلمي جمهورية العراق - وزارة التعليم العالي والبحث العلمي

العدد : ٩/١/٦٦١٢ التاريخ : ٧/٢/٢٠٢٣

أمــر جامعي

م/ ترقية الى مرتبة استاذ مساعد

استنـادا الى مصادقة السيد رئيس الجامعة على الفقرة ثانياً / ٩ من محضر الاجتماع السادس للجنة الترقيات العلمية المركزية للعام الدراسي ٢٠٢٢-٢٠٢٣ ، تقرر ترقية المدرس الدكتور **ضياء مصطفى ذيبان** التدريسي في كلية الهندسة اختصـــاص **هندسة مدنية – انشاءات** الى مرتبة **استاذ مساعد** اعتبارا من تاريخ تقديم طلب الترقية في ٢٠٢٢/١١/٩ واستناداً الى تعليمات الترقيات العلمية رقم ١٦٧ لسنة ٢٠١٧ النافذة على ان لا تترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

أ.د. علـــي عبد العزيـــز الشـاوي
رئيـس الجامعـــة
٦/٢/٢٠٢٣

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون الادارية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ مايلزم .. مع التقدير .
- اللجنة المركزية للترقيات العلمية / للدفة.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك.. للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ المساعد الدكتور ضياء مصطفى ذيبان/ مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة

Al-Nahrain University \ Scientific Promotions Division
P.O.Box: (64074) Jadriah , Baghdad , Iraq
E-Mail: sci.promotions.div_off@nahrainuniv.edu.iq
http://www.nahrainuniv.edu.iq
جامعة النهرين / شعبة الترقيات العلمية
العراق - بغداد - الجادرية - ص.ب: ٦٤٠٧٤

بسم الله الرحمن الرحيم

Republic of Iraq
Ministry of Higher Education
and Scientific Research
Al-Nahrain University
Central Scientific Promotion Committee

جمهورية العراق
وزارة التعليم العالي و البحث العلمي
جامعة النهرين
اللجنة المركزية للترقيات العلمية

العدد : ١/٦/١٣٤٩٨
التاريخ : ٢٠١٩/١٠/٢٤

أمــر جامعي

م/ ترقية الى مرتبة الاستاذية

استنـــادا الى قرار مجلس الجامعة بجلسته الثالثة المنعقدة بتاريخ 2019/10/14 للعام الدراسي 2019- 2020 ، تقرر ترقية الأستاذ المساعد الدكتور**عادل عبد الامير محمد سعيد** التدريسي في كلية الهندسة اختصاص هندسة مدنية – انشاءات الى مرتبة **الاستاذيـــة** اعتباراً من تاريـــخ تقديـــم طلب الترقية في **2018/4/10** على ان لايترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

أ.د. محمـــد صاحــب مهــدي
رئيس الجامعة / وكالةً
2019 / ١٠ / ٢٤

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية/ للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ اللازم ...مع التقدير.
- اللجنة المركزية للترقيات العلمية /إشارة الى الفقرة (ثانياً - 2) من محضر الاجتماع الاول للتفضل بالاطلاع واتخاذ اللازم...مع التقدير.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية ـ شعبة الملاك / للتفضل بالاطلاع .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الأستاذ الدكتور عادل عبد الامير محمد سعيد/ مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي ومزيدا من النجاح.
- امانة مجلس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- الصادرة.

Republic of Iraq
Ministry of Higher Education & Scientific Research
Al-Nahrain University
Department of Human Resource

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
قسم الموارد البشرية

Ref العدد ١/٣/ ١٩٤١
Date التاريخ ٢٠١٨/٢/٥

جامعة النهرين
عمادة كلية الهندسة
الواردة : ٥٦٧
التاريخ : ٢٠١٨/٢/٧

امر جامعي

استنادا لاحكام الفقرة (١) من المادة (٢٦) من قانون التعليم العالي والبحث العلمي رقم (٤٠) لسنة ١٩٨٨ المعدل تقرر ما ياتي :-

يمنح المدرس المساعد (احمد فرحان مويز) عضو الهيئة التدريسية في كلية الهندسة / جامعتنا لقب (مدرس) لحصوله على شهادة الدكتوراه في اختصاص الهندسة المدنية / مواصلات بموجب قرار تقييم الشهادة المرقم ٢٩٧٢٦ ذي العدد ص ب/٣١٣٩٨/٢٣ المؤرخ في ٢٠١٧/١١/٢٨ الصادر من وزارة التعليم العالي والبحث العلمي/ دائرة البعثات والعلاقات الثقافية .

ينفذ هذا الامر اعتباراً من تاريخ مباشرته بعد الانتهاء من الدراسة في ٢٠١٧/٨/٢٨ ق.ظ .

أ.د. نبيل كاظم عبد الصاحب
رئيس الجامعة / وكالة
٥ / ٢ / ٢٠١٨م

نسخة منه الى/
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع ... مع التقدير .
- مكتب السيد مساعد رئيس الجامعة للشؤون الادارية / للتفضل بالاطلاع ... مع التقدير.
- كلية الهندسة / اشارة الى كتابكم هـ/٥٠١ المؤرخ في ٢٠١٨/١/٣١ للتفضل بالاطلاع واتخاذ اللازم ... مع التقدير .
- قسم الشؤون المالية / للاطلاع ... لطفا .
- قسم الرقابة والتدقيق الداخلي / للاطلاع ... لطفا .
- قسم الدراسات والتخطيط / للاطلاع ... لطفا .
- قسم الموارد البشرية / التوظيف والملاك للتاشير ... لطفا .
- قسم الموارد البشرية / شعبة التدريسيين/ مع الاولويات ... لطفاً .

ندى ٢٠١٨/٢/١

نسخة الى د. احمد فرحان المحترم
د. هشام حازم
٢٠١٨/٢/٨

Republic of Iraq
Ministry of Higher Education & Scientific Research
Al-Nahrain University
Department of Human Resource

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
قسم الموارد البشرية

Ref
Date

جامعة النهرين
عمادة كلية الهندسة
الواردة : ٥٦٧
التاريخ : ٧/٢/٢٠١٨

العدد ١/٣/ ١٩٤١
التاريخ ٥/٢/٢٠١٨

امر جامعي

استنادا لاحكام الفقرة (١) من المادة (٢٦) من قانون التعليم العالي والبحث العلمي رقم (٤٠) لسنة ١٩٨٨ المعدل تقرر ما ياتي :-
يمنح المدرس المساعد (احمد فرحان مويز) عضو الهيئة التدريسية في كلية الهندسة / جامعتنا لقب (مدرس) لحصوله على شهادة الدكتوراه في اختصاص الهندسة المدنية / مواصلات بموجب قرار تقييم الشهادة المرقم ٢٩٧٢٦ ذي العدد ص ب/٣١٣٩٨/٢٣ المؤرخ في ٢٠١٧/١١/٢٨ الصادر من وزارة التعليم العالي والبحث العلمي/ دائرة البعثات والعلاقات الثقافية .

ينفذ هذا الامر اعتباراً من تاريخ مباشرته بعد الانتهاء من الدراسة في ٢٠١٧/٨/٢٨ ق.ظ .

أ.د. نبيل كاظم عبد الصاحب
رئيس الجامعة / وكالة
٥ / ٢ /٢٠١٨م

نسخة منه الى/
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع ... مع التقدير .
- مكتب السيد مساعد رئيس الجامعة للشؤون الادارية / للتفضل بالاطلاع ... مع التقدير.
- كلية الهندسة / اشارة الى كتابكم هـ/٥٠١ المؤرخ في٢٠١٨/١/٣١ للتفضل بالاطلاع واتخاذ اللازم ... مع التقدير .
- قسم الشؤون المالية / للاطلاع ... لطفا .
- قسم الرقابة والتدقيق الداخلي / للاطلاع ... لطفا .
- قسم الدراسات والتخطيط / للاطلاع ... لطفا .
- قسم الموارد البشرية / التوظيف والملاك للتاشير ... لطفا .
- قسم الموارد البشرية / شعبة التدريسيين/ مع الاوليات ... لطفاً .

ندى ٢٠١٨/٢/١

نسخة الى د. احمد فرحان المحترم
د. هشام خالد
٢٠١٨/٢/٨

p.o. Box 64074 Jadriah,Baghdad,Iraq alnahrain_online@yahoo.com رئاسة جامعة النهرين ص.ب ٦٤٠٧٤ الجادرية ،بغداد العراق

Republic of Iraq
Ministry of Higher Education & Scientific Research
Al-Nahrain University

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
قسم الموارد البشرية
شعبة شؤون التدريسين

Ref
Date:

العدد ٣/١/ ٥٥٠١
التاريخ ٢٥ - ٢ - ٢٠١٩م

جامعة النهرين
عمادة كلية الهندسة
الواردة : ٨١٤
التاريخ : ٢٦/٢/٢٠١٩

امر جامعي

استنادا لاحكام الفقرة (١) من المادة (٢٦) من قانون التعليم العالي والبحث العلمي رقم (٤٠) لسنة ١٩٨٨ (المعدل) تقرر ما ياتي :
يمنح المدرس المساعد (أحمد عبد الحافظ مصطفى) عضو الهيئة التدريسية في كلية الهندسة / جامعتنا لقب (مدرس) لحصوله على شهادة الدكتوراه في اختصاص الهندسة المدنية بموجب قرار تقييم الشهادة المرقم ٣٥٩٢٢ ذي العدد ص ب/٣٤١٢٣/٢٣ المؤرخ في ٢٠١٨/١٢/١٩ الصادر من وزارة التعليم العالي والبحث العلمي / دائرة البعثات والعلاقات الثقافية.

ينفذ هذا الامر اعتباراً من تاريخ صدور قرار تقييم معادلة الشهادة في ٢٠١٨/١٢/١٩ استنادا الى كتاب وزارة التعليم العالي والبحث العلمي / الدائرة القانونية والادارية / قسم الشؤون القانونية / شعبة الاستشارات القانونية ذي العدد ق/٣٧٣٨/١/٣ المؤرخ في ٢٠١٨/١١/١٥ .

أ.د. نبيل كاظم عبد الصاحب
رئيس الجامعة / وكالة
٢٥ / ٢ / ٢٠١٩م

موارد بشرية

نسخة منه الى/
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع ... مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون الادارية / للتفضل بالاطلاع ... مع التقدير.
- كلية الهندسة / اشارة الى كتابكم ذي العدد هـ/٦١٤ المؤرخ في ٢٠١٩/٢/١٩ للتفضل بالاطلاع واتخاذ اللازم .... مع التقدير.
- قسم الشؤون المالية / للاطلاع ... لطفا.
- قسم الرقابة والتدقيق الداخلي / للاطلاع ... لطفا.
- قسم الدراسات والتخطيط / للاطلاع ... لطفا .
- قسم الموارد البشرية / شعبة التوظيف والملاك / للتاشير ... لطفا.
- قسم الموارد البشرية / شعبة التدريسيين / مع الاوليات ... لطفاً.

ندى ٢٠١٩/٢/٢١

Republic of Iraq
Ministry of Higher Education & Scientific Research
Al-Nahrain University

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
قسم الموارد البشرية
شعبة شؤون التدريسين

Ref
Date:

العدد ٣/١/ ٥٥٠١
التاريخ ٢٥ - ٢ - ٢٠١٩م

جامعة النهرين
عمادة كلية الهندسة
الواردة: ٨١٤
التاريخ: ٢٦/٢/٢٠١٩

امر جامعي

استنادا لاحكام الفقرة (١) من المادة (٢٦) من قانون التعليم العالي والبحث العلمي رقم (٤٠) لسنة ١٩٨٨ (المعدل) تقرر ما ياتي :
يمنح المدرس المساعد (أحمد عبد الحافظ مصطفى) عضو الهيئة التدريسية في كلية الهندسة / جامعتنا لقب (مدرس) لحصوله على شهادة الدكتوراه في اختصاص الهندسة المدنية بموجب قرار تقييم الشهادة المرقم ٣٥٩٢٢ ذي العدد ص ب/٣٤١٢٣/٢٣ المؤرخ في ٢٠١٨/١٢/١٩ الصادر من وزارة التعليم العالي والبحث العلمي / دائرة البعثات والعلاقات الثقافية.

ينفذ هذا الامر اعتباراً من تاريخ صدور قرار تقييم معادلة الشهادة في ٢٠١٨/١٢/١٩ استنادا الى كتاب وزارة التعليم العالي والبحث العلمي / الدائرة القانونية والادارية / قسم الشؤون القانونية / شعبة الاستشارات القانونية ذي العدد ق/٣/١/٣٧٣٨ المؤرخ في ٢٠١٨/١١/١٥ .

أ.د. نبيل كاظم عبد الصاحب
رئيس الجامعة / وكالة
٢٥ / ٢ /٢٠١٩م

موارد بشرية
٢٠١٩/٢/٢٧

نسخة منه الى/
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع ... مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون الادارية / للتفضل بالاطلاع ... مع التقدير.
- كلية الهندسة / اشارة الى كتابكم ذي العدد هـ/٦١٤ المؤرخ في ٢٠١٩/٢/١٩ للتفضل بالاطلاع واتخاذ اللازم .... مع التقدير.
- قسم الشؤون المالية / للاطلاع ... لطفا.
- قسم الرقابة والتدقيق الداخلي / للاطلاع ... لطفا.
- قسم الدراسات والتخطيط / للاطلاع ... لطفا .
- قسم الموارد البشرية / شعبة التوظيف والملاك / للتاشير ... لطفا.
- قسم الموارد البشرية / شعبة التدريسيين / مع الاوليات ... لطفاً.

ندى ٢٠١٩/٢/٢١

REPUBLIC OF IRAQ
Ministry of Higher Education and Scientific Research

University of Babylon

بسمه تعالى

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة بابل
اللجنة الجامعية المركزية للترقيات العلمية والتعضيد

العدد: ١٦٢٤٠
التاريخ ٢٠١٣/٦/٢٤

وثق ماتفعل وافعل ماتوثق
ادارة الجودة الشاملة / الايزو

رئاسة جامعة بابل
الصادرة العادية
العدد:
التاريخ: / / ٢٠

أمر جامعي

استنادا" إلى توصية مجلس الجامعة بجلسته الخامسة عشرة المنعقدة بتاريخ ٢٠١٣/٦/١٢ وإشارة إلى محضر الجلسة الخامسة عشرة للجنة الجامعية المركزية للترقيات العلمية والتعضيد للعام الدراسي ٢٠١٢-٢٠١٣ والمنعقدة بتاريخ ٢٠١٣/٥/١٤ تقرر ترقية (الدكتور جبار حمود البيضاني) من مرتبة (أستاذ مساعد) إلى مرتبة (الأستاذية) واعتبارا" من تاريخ تقديم بحثه التعزيزي في ٢٠١٢/٧/٩ على إن لايترتب على ذلك أية تبعات مالية قبل صدور هذا الأمر.

أ.د. عادل هادي البغدادي
رئيس الجامعة

أ.د. فارس ناجي عبود
رئيس الجامعة وكالة
٢٠١٣/٦/٢٤

نسخة منه إلى

- مكتب السيد مساعد رئيس الجامعة للشؤون الإدارية والمالية / للعلم ... مع التقدير .
- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية / للعلم ... مع التقدير
- عمادة كلية الهندسة/...للتفضل بالعلم ...مع التقدير
- أمانة مجلس الجامعة / كتابكم المرقم ج / ١٥٣٤٨ في ٢٠١٣/٦/١٢ .
- قسم الشؤون القانونية والإدارية .
- شعبة المعلومات الإدارية لتأشير ذلك لديكم ...مع التقدير
- قسم الشؤون المالية.
- قسم التخطيط والمتابعة .
- اللجنة الجامعية المركزية للترقيات العلمية والتعضيد .
- **الدكتور جبار حمود البيضاني** / مع أجمل التمنيات بالموفقية .
- الصادرة

REPUBLIC OF IRAQ
Ministry of Higher Education and Scientific Research

University of Babylon

بسمه تعالى

جامعة بابل
UNIVERSITY OF BABYLON

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة بابل
اللجنة الجامعية المركزية للترقيات العلمية والتعضيد

العدد: ١٦٢٤٠
التاريخ ٢٠١٣/٦/٢٤
وثق ماتفعل وافعل ماتوثق
ادارة الجودة الشاملة / الايزو

رئاسة جامعة بابل
الصادرة العادية
العدد:
التاريخ: / / ٢٠

أمر جامعي

استنادا" إلى توصية مجلس الجامعة بجلسته الخامسة عشرة المنعقدة بتاريخ ٢٠١٣/٦/١٢ وإشارة إلى محضر الجلسة الخامسة عشرة للجنة الجامعية المركزية للترقيات العلمية والتعضيد للعام الدراسي ٢٠١٢-٢٠١٣ والمنعقدة بتاريخ ٢٠١٣/٥/١٤ تقرر ترقية (الدكتور جبار حمود البيضاني) من مرتبة (أستاذ مساعد) إلى مرتبة (الأستاذية) واعتبارا" من تاريخ تقديم بحثه التعزيزي في ٢٠١٢/٧/٩ على إن لايترتب على ذلك أية تبعات مالية قبل صدور هذا الأمر.

أ.د. عادل هادي البغدادي
رئيس الجامعة

أ.د. فارس ناجي عبود
رئيس الجامعة وكالة
٢٠١٣/٦/٢٤

<u>نسخة منه إلى</u>

- مكتب السيد مساعد رئيس الجامعة للشؤون الإدارية والمالية / للعلم ... مع التقدير .
- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية / للعلم ... مع التقدير
- عمادة كلية الهندسة/...للتفضل بالعلم ...مع التقدير
- أمانة مجلس الجامعة / كتابكم المرقم ج / ١٥٣٤٨ في ٢٠١٣/٦/١٢ .
- قسم الشؤون القانونية والإدارية .
- شعبة المعلومات الإدارية لتأشير ذلك لديكم ...مع التقدير
- قسم الشؤون المالية.
- قسم التخطيط والمتابعة .
- اللجنة الجامعية المركزية للترقيات العلمية والتعضيد .
- **الدكتور جبار حمود البيضاني** / مع أجمل التمنيات بالموفقية .
- الصادرة

REPUBLIC OF IRAQ
Ministry of Higher Education and Scientific Research

University of Babylon

بسمه تعالى

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة بابل
اللجنة الجامعية المركزية للترقيات العلمية والتعضيد

العدد: ١٦٢٤٠
التاريخ ٢٠١٣/٦/٢٤
وثق ماتفعل وافعل ماتوثق
ادارة الجودة الشاملة / الايزو

رئاسة جامعة بابل
الصادرة العادية
العدد:
التاريخ: / / ٢٠

أمر جامعي

استنادا" إلى توصية مجلس الجامعة بجلسته الخامسة عشرة المنعقدة بتاريخ ٢٠١٣/٦/١٢ وإشارة إلى محضر الجلسة الخامسة عشرة للجنة الجامعية المركزية للترقيات العلمية والتعضيد للعام الدراسي ٢٠١٢-٢٠١٣ والمنعقدة بتاريخ ٢٠١٣/٥/١٤ تقرر ترقية (الدكتور جبار حمود البيضاني) من مرتبة (أستاذ مساعد) إلى مرتبة (الأستاذية) واعتبارا" من تاريخ تقديم بحثه التعزيزي في ٢٠١٢/٧/٩ على إن لايترتب على ذلك أية تبعات مالية قبل صدور هذا الأمر.

أ.د. عادل هادي البغدادي
رئيس الجامعة

أ.د. فارس ناجي عبود
رئيس الجامعة وكالة
٢٠١٣/٦/٢٤

نسخة منه إلى

- مكتب السيد مساعد رئيس الجامعة للشؤون الإدارية والمالية / للعلم ... مع التقدير .
- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية / للعلم ... مع التقدير
- عمادة كلية الهندسة/...للتفضل بالعلم ...مع التقدير
- أمانة مجلس الجامعة / كتابكم المرقم ج / ١٥٣٤٨ في ٢٠١٣/٦/١٢ .
- قسم الشؤون القانونية والإدارية .
- شعبة المعلومات الإدارية لتأشير ذلك لديكم ...مع التقدير
- قسم الشؤون المالية.
- قسم التخطيط والمتابعة .
- اللجنة الجامعية المركزية للترقيات العلمية والتعضيد .
- **الدكتور جبار حمود البيضاني** / مع أجمل التمنيات بالموفقية .
- الصادرة

The Ministry of Higher Education and
Scientific Research
University of Technology
Office of Higher Education

وزارة التعليم العالي والبحث العلمي
الجامعة التكنولوجية
قسم الدراسات العليا

No.:
Ref.:

العدد: ٥٦٥ د.ع
التاريخ: ١/١٢/٣-٢

- أمـــر جـــامـعـي -

منح شهادة الدكتوراه

بناءا على إكمال الطالب جبار حمود عبد النبي متطلبات الدراسات العليا الدكتوراه بنجاح . واستنادا إلى الصلاحيات المخولة لنا من قبل مجلس الجامعة وبناء على ما جاء بمحضر مجلس قسم هندسة البناء والانشاءات بجلسته الرابعة المنعقدة في ٢٠٠٣/١٠/٢٩ .

تقـــرر منحـــه درجـــة دكتـــوراه فلســـفة فـــي هندســـة البنـــاء والانشاءات/تخصص هندسة البيئة مع تمتعه بكافة الحقوق والامتيازات التي تخوله إياها هذه الدرجة .

أ.د. وائل نور الدين الرفاعي
رئيس الجامعة

١/١٢

أ.د .كريكور سيروب كريكور
رئيس الجامعة وكالة

نسخه منه الى /
-قسم هندسة البناء والانشاءات.
-قسم الشؤون المالية .
-نقابة المهندسين.
-قسم الدراسات العليا.

١/٢٩
سوابق

بسم الله الرحمن الرحيم

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
اللجنة المركزية للترقيات العلمية

Republic of Iraq
Ministry of Higher Education and Scientific Research
Al- Nahrain University
Central Scientific Promotion Committee

العـدد: ١/٦/ ٨٥٥
التاريخ: ٢٣/ ١/ ٢٠١٣م

أمـر جامعي

م/ ترقية الى مرتبة استاذ مساعد

استنادا الى توصية اللجنة المركزية للترقيات العلمية بالفقرة (٥) من محضر اجتماعها السادس المنعقد بتاريخ ٢٤/ ١١/ ٢٠١٢ والى تعليمات الترقيات العلمية بالعدد ٣٦ لعام ١٩٩٢، تقرر ترقية المدرس الدكتور ليث خالد كامل التدريسي في كلية الهندسة الى مرتبة استاذ مساعد اعتبارا من تاريخ تقديم طلب الترقية في ٢٠١١/٥/٢٦ على ان لاتترتب على ذلك اية تبعات مالية قبل صدور امرنا هذا.

أ.د. محمد جابر علي
رئيس الجامعة
٢٣ / كانون الثاني /٢٠١٣

نسخة منه الى

- مكتب السيد رئيس الجامعة.
- السيد مساعد رئيس الجامعة للشؤون العلمية/ للتفضل بالاطلاع .. مع التقدير.
- عمادة كلية الهندسة / لاتخاذ اللازم ...مع التقدير.
- اللجنة المركزية للترقيات العلمية / للتفضل بالاطلاع واتخاذ اللازم...مع التقدير.
- قسم ضمان الجودة والأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / للتفضل بالاطلاع .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ المساعد ليث خالد كامل / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي ومزيدا من النجاح.

جيـــــا/٢١/ـــهـــان

المعاملة / اجراءات المعروض
[illegible] ليث [illegible]
لجنة الترقيات العلمية + قاعدة البيانات
[illegible]

١/٢٩
سوار

بسم الله الرحمن الرحيم

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
اللجنة المركزية للترقيات العلمية

Republic of Iraq
Ministry of Higher Education and Scientific Research
Al- Nahrain University
Central Scientific Promotion Committee

العــدد: ١/٦/ ٨٥٥
التاريخ: ٢٩/ ١/ ٢٠١٣

أمــر جامعي

م/ ترقية الى مرتبة استاذ مساعد

استنادا الى توصية اللجنة المركزية للترقيات العلمية بالفقرة (٥) من محضر اجتماعها السادس المنعقد بتاريخ ٢٤/ ١١/ ٢٠١٢ والى تعليمات الترقيات العلمية بالعدد ٣٦ لعام ١٩٩٢، تقرر ترقية المدرس الدكتور ليث خالد كامل التدريسي في كلية الهندسة الى مرتبة استاذ مساعد اعتبارا من تاريخ تقديم طلب الترقية في ٢٠١١/٥/٢٦ على ان لاتترتب على ذلك اية تبعات مالية قبل صدور امرنا هذا.

أ.د. محمد جابر علي
رئيس الجامعة
٢٣ / كانون الثاني/ ٢٠١٣

نسخة منه الى

- مكتب السيد رئيس الجامعة.
- السيد مساعد رئيس الجامعة للشؤون العلمية/ للتفضل بالاطلاع .. مع التقدير.
- عمادة كلية الهندسة / لاتخاذ اللازم ...مع التقدير.
- اللجنة المركزية للترقيات العلمية / للتفضل بالاطلاع واتخاذ اللازم...مع التقدير.
- قسم ضمان الجودة والأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / للتفضل بالاطلاع .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ المساعد ليث خالد كامل / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي ومزيدا من النجاح.

جيـــ١/٣١ـــلهـــان

المعاملة / أجراء المطلوب
...
لجنة الترقيات العلمية + قاعدة البيانات
...

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

العدد: ت ع/١٠١١/٨١٠
التاريخ: ٨/٢/١ ٢٠٢م

أمــر جامعي

م/ ترقية الى مرتبة استاذ مساعد

استنـــادا الى مصادقة السيد رئيس الجامعة على الفقرة ثانياً /٩ من محضر الاجتماع السادس المفتوح للجـنة المركزية للترقيـات العلمية المنعقد بتـاريخ ٢٠ و٢٧/٢/٢٠٢١ والى تعليمات الترقيات العلمية بالعـــــدد ١٦٧ عـــام ٢٠١٧ ، تـــقرر تـــرقية المدرس الدكتور **رائد احمد داود** التدريسي في كلية الهندسة اختصاص هندسة مدنية -انشاءات الى مرتبة **استاذ مساعد** اعتبارا من تاريخ تقديم النشاطات التعزيزية في ٢٠٢٠/١٢/٣٠، على ان لاتترتب على ذلك اية تبعات مالية قبل صدور امرنا هذا.

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
٢٠٢١ / ٢/٤

هيئة ...
لنشر بحوث/ النسخة الى ٢٠٢١/١ د. رائد احمد داود
... مرتبة لغة ...

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ مايلزم .. مع التقدير
- اللجنة المركزية للترقيات العلمية / للحفظ
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة املاك.. للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ المساعد الدكتورة رائد احمد داود / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

Al-Nahrain University \ Scientific Promotions Division
P.O.Box: (64074) Jadriah , Baghdad , Iraq
E-Mail: sci.promotions.div_off@nahrainuniv.edu.iq
http://www.nahrainuniv.edu.iq
جامعة النهرين / شعبة الترقيات العلمية
العراق - بغداد - الجادرية - ص ب: ٦٤٠٧٤

جامعة النهرين
قسم الشؤون الادارية والمالية
الموارد البشرية
شعبة الملاك

العدد: ٢١٣/٣/٢٣٥٣

التاريخ: ٢٠٢٣/٢/٢٧

أمـــر جامعـــي

استناداً الى الامر الوزاري الصادر من وزارة التعليم العالي والبحث العلمي / الدائرة الادارية والمالية / قسم الموارد البشرية / شعبة شؤون الموظفين ذي العدد (٢٦١) المؤرخ في ٢٠٢٣/٢/٧ والامر الاداري بالمباشرة ذي العدد (٩٢٤/ظ/٤/١١) المؤرخ في ٢٠٢٣/٢/٢٠ وامرنا الجامعي ذي العدد (٢٢٤٤/٢/٣) المؤرخ في ٢٠٢٣/٢/٢٢ ولتوفر شروط التعيين المنصوص عليها في المادة (٧) من قانون الخدمة المدنية رقم ٢٤ لسنة ١٩٦٠ المعدل وقانون الخدمة الجامعية رقم ٢٣ لسنة ٢٠٠٨ المعدل واستناداً الى الصلاحيات المخولة لنا تقرر مايأتي:

اولاً : تعيين الذوات المدرجة اسمائهم في الجدول المرافق طياً والذي يبدأ بالتسلسل (١-اسعد تركي سواري) وينتهي بالتسلسل (٨١-تبارك صباح جاسم) من حملة شهادة الدكتوراه ضمن الدرجة الوظيفية (الخامسة/٣) بالعنوان الوظيفي (مدرس جامعي) وبراتب اسمي مقداره (٤٤١,٠٠٠) اربعمائة وواحد واربعون الف دينار والمؤشرة تخصصاتهم ازاء كل منهم في الجدول على ملاك جامعتنا و يمنحون المخصصات التالية:-

١. مخصصات الخدمة الجامعية البالغة (١٠٠٪) مائة من المائة من الراتب الاسمي.

٢. مخصصات الشهادة البالغة (١٠٠٪) مائة من المائة من الراتب الاسمي.

ثانياً : يكون المومأ اليهم تحت التجربة لمدة سنة خدمة فعلية اعتباراً من تاريخ مباشراتهم وعلى ان يجتازوا دورة طرائق التدريس واختبار الصلاحية.

ينفذ هذا الامر ابتداءً من تاريخ المباشرة.

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
٢٠٢٣/٢/٢٧ م

نسخة منه الى/

* وزارة التعليم العالي والبحث العلمي / الدائرة لادارية والمالية / قسم الموارد البشرية/شعبة شؤون الموظفين /اشارة الى امركم الاداري المشار اليه في اعلاه/للتفضل بالاطلاع... مع التقدير.
* مكتب السيد رئيس الجامعة / للتفضل بالاطلاع ...مع التقدير.
* مكتب السيد مساعد رئيس الجامعة للشؤون الادارية /اشارة الى هامش السيد مساعد رئيس الجامعة للشؤون الادارية المحترم المؤرخ في ٢٠٢٣/٢/٢٢ للتفضل بالاطلاع ...مع التقدير.
* كلية الطب / للتفضل بالاطلاع واتخاذ اللازم واصدار امر الاداري بالمباشرة ... مع التقدير .
* كلية الصيدلة / للتفضل بالاطلاع واتخاذ اللازم واصدار امر الاداري بالمباشرة ... مع التقدير .
* كلية الهندسة / للتفضل بالاطلاع واتخاذ اللازم واصدار امر الاداري بالمباشرة ... مع التقدير .
* كلية هندسة المعلومات / للتفضل بالاطلاع واتخاذ اللازم واصدار امر الاداري بالمباشرة ... مع التقدير .
* كلية العلوم / للتفضل بالاطلاع واتخاذ اللازم واصدار امر الاداري بالمباشرة ... مع التقدير .
* كلية العلوم السياسية / للتفضل بالاطلاع واتخاذ اللازم واصدار امر الاداري بالمباشرة ... مع التقدير .
* كلية التقنيات الاحيائية / للتفضل بالاطلاع واتخاذ اللازم واصدار امر الاداري بالمباشرة ... مع التقدير .
* كلية الحقوق / للتفضل بالاطلاع واتخاذ اللازم واصدار امر الاداري بالمباشرة ... مع التقدير .
* كلية اقتصاديات الاعمال / للتفضل بالاطلاع واتخاذ اللازم واصدار امر الاداري بالمباشرة ... مع التقدير .
* مركز بحوث التقنيات الاحيائية / للتفضل بالاطلاع واتخاذ اللازم واصدار امر الاداري بالمباشرة ... مع التقدير .
* قسم الشؤون القانونية/ للتفضل بالأطلاع...لطفا.
* قسم الرقابة والتدقيق الداخلي/ للتفضل بالأطلاع واتخاذ اللازم...لطفا.
* قسم الدراسات والتخطيط والمتابعة/ للتأشير ... لطفا.
* مكتب التصاريح والمعلومات/ للتفضل بالاطلاع...لطفا.
* قسم الشؤون الادارية والمالية / الشؤون المالية/لاتخاذ مايلزم ...لطفا .
* قسم الشؤون الادارية والمالية /شعبة الملاك / مع الأوليات ... لطفا
* البريد المركزي ...لطفا.
* الملفة الشخصية ...لطفا

محمد نبيل // فائز ضياء ٢/٢٧

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جامعة النهرين /الموارد البشرية
العراق - بغداد - الجادرية - ص. ب: ٦٤٠٧٤

التاريخ ٢٧/٢/٢٠٢٣

ت	الاسم الثلاثي	الدرجة والمرحلة الوظيفية	العنوان الوظيفي	الراتب الاسمي	المخصصات الجامعية	مخصصات الشهادة	مكان العمل
٣٥.	سميه ضاري عواد	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية هندسة المعلومات
٣٦.	علي احسان عبد الصاحب	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية هندسة المعلومات
٣٧.	منى مصطفى كريم	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية الهندسة
٣٨.	ايات فرحان عبد جويد	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	مكتب مساعد رئيس الجامعة للشؤون العلمي
٣٩.	سمر عبد الكريم ثابت	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	مكتب مساعد رئيس الجامعة للشؤون العلمي
٤٠.	ياسر محمود كاظم	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية الهندسة
٤١.	حيدر ضياء كامل	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية هندسة المعلومات
٤٢.	شيرين اكرم سعيد	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية الحقوق
٤٣.	ورقاء عبد السلام عبد الوهاب	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية الحقوق
٤٤.	يونس حسن حسين	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	رئاسة الجامعة /قسم النشاطات الطلابية
٤٥.	نشوان تكليف جيثوم	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية الحقوق
٤٦.	وداد نجم عبود	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	رئاسة الجامعة / قسم الاعلام
٤٧.	زياد خلف نزال	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية الحقوق
٤٨.	احمد علي احمد	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية الحقوق
٤٩.	دريد داود خضير	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية الحقوق
٥٠.	علي ناصر علوان	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية اقتصاديات الاعمال
٥١.	لمى ماجد حميد	الخامسة/٣	مدرس جامعي	٤٤١,٠٠٠	١٠٠%	١٠٠%	كلية اقتصاديات الاعمال

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جامعة النهرين /الموارد البشرية
العراق - بغداد - الجادرية - ص.ب: ٦٤٠٧٤

العدد: هـ ن/ ١/١/ ١٢٨١ التاريخ: ٥/ ٣/ ٢٠٢٣

أمـــــر إداري

م/ تعيين ومباشرة

استنادا الى الأمر الجامعي ذي العدد (٢٣٥٣/٢/٣) في ٢٠٢٣/٢/٢٧ والى الصلاحيات المخولة لنا تقرر :-

- تعيين السادة المدرجة اسماؤهم في القائمة المرفقة طيًا والتي تبدأ بالتسلسل (١- د.منى مصطفى كريم) وتنتهي بالتسلسل (٧- د. لمى زهير حمد) من حملة شهادة الدكتوراه ضمن الدرجة الوظيفية (الخامسة / ٣) وبالعنوان الوظيفي (مدرس جامعي) وبراتب اسمي (٤٤١،٠٠٠) اربعمائة وواحد واربعون الف دينار والمؤشرة تخصصاتهم ازاء كل منهم في الجدول على ملاك جامعتنا / كلية الهندسة، ويمنحون المخصصات التالية:-

١- مخصصات الخدمة الجامعية البالغة (١٠٠%) مائة من المائة من الراتب الأسمي.
٢- مخصصات الشهادة البالغة (١٠٠%) مائة من المائة من الراتب الاسمي.

- باشر الموما اليهم في مهام عملهم بحسب التواريخ كلًا حسب ما مبين أزاء كل منهم.

أ.د. باسم عبيد حسن
العميد
٥/ اذار/ ٢٠٢٣

نسخة عنه /

- رئاسة الجامعة / قسم الشؤون الادارية والمالية / شعبة الملاك / اشارة الى امركم الجامعي اعلاه ... للعلم ... مع التقدير .
- رئاسة الجامعة / قسم الدراسات والتخطيط / للتفضل بالاطلاع وتأشير ذلك لديكم ... مع التقدير .
- السيد معاون العميد للشؤون الإدارية والمالية .. للتفضل بالاطلاع .. مع التقدير.
- الاقسام المعنية.. للفضل بالاطلاع وتبليغ الموما اليهم .. مع التقدير.
- الشعبة الإدارية والمالية / الافراد .. مع التقدير.
- الشعبة الادارية والمالية / الرواتب / لاتخاذ مايلزم .... مع التقدير
- شعبة الرقابة والتدقيق .. مع التقدير.
- شعبة الدراسات والتخطيط / للتاشير .. لطفا.
- امانة مجلس الكلية
- الاضبارة الشخصية / للحفظ .. لطفا.

منى ٢٠٢٣/٣/١

ت	الاسم	الدرجة والمرحلة الوظيفية	العنوان الوظيفي	مكان العمل	تاريخ المباشرة
١	د.منى مصطفى كريم	الخامسة / ٣	مدرس جامعي	هندسة الطب الحياتي	٢٠٢٣/٢/٢٨
٢	د.حسين عبد جابر كرم	الخاسة / ٣	مدرس جامعي	قسم هندسة الطب الحياتي	٢٠٢٣/٢/٢٨
٣	د.صهيب جواد كاظم	الخامسة / ٣	مدرس جامعي	قسم الهندسة الميكانيكية	٢٠٢٣/٢/٢٨
٤	د.ياسر محمود كاظم	الخامسة / ٣	مدرس جامعي	قسم الهندسة المدنية	٢٠٢٣/٢/٢٨
٥	د.ناظم نصير ناظم	الخامسة / ٣	مدرس جامعي	قسم الهندسة الميكانيكية	٢٠٢٣/٢/٢٨
٦	د. شهد عماد يونس	الخامسة / ٣	مدرس جامعي	هندسة الليزر والالكترونيات البصرية	٢٠٢٣/٢/٢٨
٧	د.لمى زهير محمد	الخامسة /٣	مدرس جامعي	هندسة الليزر والالكترونيات البصرية	٢٠٢٣/٢/٢٨

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جامعة النهرين
قسم الشؤون الادارية والمالية
الموارد البشرية
شعبة شؤون التدريسيين

جمهورية العراق - وزارة التعليم العالي والبحث العلمي - جامعة النهرين

العدد: ٢/٢/ ٢٩٩٢

التاريخ: ١٦/ ٤/ ٢٠٢٣

امر جامعي

استناداً لأحكام الفقرة (١) من المادة (٣٦) من قانون وزارة التعليم العالي والبحث العلمي رقم (٤٠) لسنة ١٩٨٨ المعدل والصلاحيات المخولة لنا تقرر مايأتي :-

يمنح الدكتور (ياسر محمود كاظم محمد) التدريسي على ملاك كلية الهندسة / جامعتنا لقب (مدرس) لحصوله على شهادة دكتوراة فلسفة في الهندسة المدنية بموجب الامر الجامعي ذي العدد (١٥٤٧) المؤرخ في ٢٠٠٩/٤/١٢ الصادر من قسم الدراسات العليا / جامعة بغداد وبدون تبعات مالية لحين إقرار الموازنة لعام ٢٠٢٣ وذلك بناءاً على ما جاء بكتاب وزارة التعليم العالي والبحث العلمي /الدائرة الإدارية والمالية/قسم الموارد البشرية/شعبة شؤون الجامعات ذي العدد (ق/٤/٦/٨٣١٢) المؤرخ في ٢٠٢٠/٨/١٦ .

ينفذ امرنا هذا اعتباراً من ٢٠٢٣/٢/٢٨ تاريخ المباشرة بالتعيين

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
١٢/ ٤/ ٢٠٢٣م

السيد المحترم / م.د. ياسر محمود المحترم
للعلم وإتخاذ ما يلزم

نسخة منه الى//

- مكتب السيد رئيس الجامعة/ للتفضل بالاطلاع ... مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية/ للتفضل بالاطلاع ... مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون الادارية / للتفضل بالاطلاع ... مع التقدير.
- كلية الهندسة / اشارة الى كتابكم ذي العدد (١٩٨٤) المؤرخة في ٢٠٢٣/٣/٣٠...للتفضل بالاطلاع واتخاذ اللازم ...مع التقدير.
- قسم الشؤون القانونية/للتفضل بالاطلاع ...مع التقدير.
- قسم الدراسات والتخطيط /للتفضل بالاطلاع ... مع التقدير.
- قسم الرقابة والتدقيق الداخلي/ للتفضل بالاطلاع ...مع التقدير.
- قسم الشؤون الادارية والمالية/ السيدة معاون مدير القسم المحترمة/للتفضل بالاطلاع و اتخاذ اللازم من قبلكم بشأن توفر التخصيص المالي اللازم حين اقرار الموازنة لعام ٢٠٢٣...لطفاً
  /شعبة شؤون التدريسين/مع الاوليات...لطفاً
  /شعبة الملاك/للتأشير...لطفاً
- شعبة البريد المركزي/لطفاً

نادية ٥ /٤/ ٢٠٢٣

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العراق - بغداد - الجادرية - ص. ب: ٦٤٠٧٤

العدد: هـ ن / ١ / ١ / ٥ - ٢٦٠٥   التاريخ: ١١ / ٥ / ٢٠٢٣

أمـــــر إداري

م/ منح لقب (مدرس)

استنادًا الى الأمر الجامعي ذي العدد (٣٩٩٢/٢/٣) في ٢٠٢٣/٤/١٦ والى الصلاحيات المخولة لنا تقرر :-

١-يمنح الدكتور (**ياسر محمود كاظم محمد**) التدريسي على ملاك كليتنا لقب (مدرس) لحصوله على شهادة دكتوراه فلسفة في الهندسة المدنية بموجب الأمر الجامعي ذي العدد (١٥٤٧) في ٢٠٠٩/٤/١٢ الصادر من قسم الدراسات العليا/جامعة بغداد وبدون تبعات مالية لحين اقرار الموازنة لعام ٢٠٢٣، بناءً على ما جاء بكتاب وزارة التعليم العالي والبحث العلمي/الدائرة الإدارية والمالية/قسم الموارد البشرية/شعبة شؤون الجامعات ذي العدد (ق/٨٣١٢/٦/٤) في ٢٠٢٠/٨/١٦.

٢-يمنح مخصصات اللقب العلمي والبالغة (٢٥)% من الراتب الاسمي استنادًا الى المادة(١-سادسًا) من قانون رقم (٣٢) لسنة ٢٠١٢ قانون التعديل الاول لقانون الخدمة الجامعية رقم ٢٣ لسنة ٢٠٠٨.

٣-ينفذ هذا الأمر اعتبارًا من تاريخ ٢٠٢٣/٢/٢٨ تاريخ المباشرة بالتعيين.

م.د. ياسر للعلم واتخاذ مايلزم

أ.د. باسم عبيد حسن
العميد
/ ايار / ٢٠٢٣

نسخة عنه /
- رئاسة الجامعة / قسم الشؤون الادارية والمالية / الموارد البشرية / شعبة شؤون التدريسيين / اشارة الى امركم الجامعي اعلاه .. للعلم .. مع التقدير.
- رئاسة الجامعة / قسم الدراسات والتخطيط / للتفضل بالاطلاع وتأشير ذلك لديكم ... مع التقدير .
- السيد معاون العميد للشؤون الإدارية والمالية .. للتفضل بالاطلاع .. مع التقدير.
- قسم الهندسة المدنية .. للتفضل بالاطلاع وتبليغ المومأ اليه .. مع التقدير.
- الشعبة الإدارية والمالية / الافراد .. مع التقدير.
- الشعبة الادارية والمالية / الرواتب / لاتخاذ مايلزم .... مع التقدير
- شعبة الدراسات والتخطيط / للتأشير .. لطفًا.
- امانة مجلس الكلية .. للتفضل بالاطلاع .. مع التقدير.
- الاضبارة الشخصية / للحفظ .. لطفًا.

منى ٢٠٢٣/٥/٩

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بسم الله الرحمن الرحيم

جمهورية العراق
وزارة التعليم العالي و البحث العلمي
جامعة النهرين
اللجنة المركزية للترقيات العلمية

Republic of Iraq
Ministry of Higher Education and Scientific Research
Al-Nahrain University
Central Scientific Promotion Committee

العدد : ١/٩/٥/٢٢٠
التاريخ : ٢٦/ ٢ /٢٠٢٣

جامعة النهرين
الرقم/ ٧٢٨
التاريخ ٢٦/ ٣ /٢٠٢٣

أمـــر جامعي

م/ ترقية الى مرتبة الاستاذية

استنـــادا الى مصادقة مجلس الجامعة بجلسته العاشرة المنعقدة بتاريخ ٢٠٢٣/٣/١٣ للعام الدراسي ٢٠٢٢-٢٠٢٣ على الفقرة ثانياً /٢ من محضر الاجتماع السادس للجنة الترقيات العلمية المركزية ، تقرر ترقية الاستاذ المساعد الدكتور **ابراهيم سليم ابراهيم** التدريسي في **كلية الهندسة** اختصاص **هندسة مدنية – انشاءات** الى **مرتبة الاستاذية** اعتبارا من تاريخ تقديم طلب الترقية في ٢٠٢٢/١٠/٤ واستنـاداً الى المـادة -٤ من تعليمـات الترقيات العلمية رقم ١٦٧ لسنة ٢٠١٧ النافذة على ان لا تترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

أ.د. علــي عبد العزيــز الشـاوي
رئيــس الجامعـــة
٢٦/ ٣ / ٢٠٢٣

نسخة منه الى

- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة / للتفضل بالاطلاع واتخاذ مايلزم .. مع التقدير .
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير
- الاستاذ الدكتور ابراهيم سليم ابراهيم / مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

جمهورية العراق - وزارة التعليم العالي والبحث العلمي جمهورية العراق - وزارة التعليم العالي والبحث العلمي جمهورية العراق - وزارة التعليم العالي والبحث العلمي

العدد : ١/٩/٥٤٩٧ التاريخ : ٢٠٢٣/٥/٢٥

أمــر جامعي

م/ ترقية الى مرتبة استاذ مساعد

استنـــادا الى مصادقة السيد رئيس الجامعة على الفقرة 8 من محضر الاجتماع االتاسع اللجنة الترقيات العلمية المركزية للعام الدراسي 2022-2023 ، تقرر تـرقية المدرس الدكتور **محمد علي اكرم شعبان** التدريسي في كلية الهندسة اختصاص **هندسة البناء والانشاءات / البيئة** الى مرتبة **استاذ مساعد** اعتبـارا من تاريخ تقديم الطلب في **2022/12/11** واستناداً الى تعليمات الترقيات العلمية رقم 167 لسنة 2017 النافذة على ان لا تترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

أ.د. علـــي عبد العزيـــز الشـاوي
رئيـس الجامعـــة
2023 / ٥/ ٢٤

نسخة منه الى
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة/ للتفضل بالاطلاع .. مع التقدير .
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير.
- الاستاذ المساعد محمد علي اكرم شعبان/ مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

Al-Nahrain University \ Scientific Promotions Division
P.O.Box: (64074) Jadriah , Baghdad , Iraq
E-Mail: sci.promotions.div_off@nahrainuniv.edu.iq http://www.nahrainuniv.edu.iq

جامعة النهرين / شعبة الترقيات العلمية
العراق - بغداد - الجادرية - ص.ب: ٦٤٠٧٤

جامعة النهرين
شعبة الترقيات العلمية
اللجنة المركزية للترقيات العلمية

Al-Nahrain University Iraq 1987 العراق

جمهورية العراق - وزارة التعليم العالي والبحث العلمي جمهورية العراق - وزارة التعليم العالي والبحث العلمي جمهورية العراق - وزارة التعليم العالي والبحث العلمي

العدد : ١/٩/٧ ٥٤٩٧ التاريخ : ٢٠٢٣/٥/٢٥

أمــر جامعي

م/ ترقية الى مرتبة استاذ مساعد

استنـــادا الى مصادقة السيد رئيس الجامعة على الفقرة 8 من محضر الاجتماع التاسع اللجنة الترقيات العلمية المركزية للعام الدراسي 2022-2023 ، تقرر تـرقية المدرس الدكتور **محمد علي اكرم شعبان** التدريسي في كلية الهندسة اختصاص **هندسة البناء والانشاءات / البيئة** الى مرتبة **استاذ مساعد** اعتبـارا من تاريخ تقديم الطلب في **2022/12/11** واستناداً الى تعليمات الترقيات العلمية رقم 167 لسنة 2017 النافذة على ان لا تترتب على ذلك اية تبعات مالية قبل صدور امرنا اعلاه.

أ.د. علــي عبد العزيــز الشــاوي
رئيـس الجامعـــة
2023 / ٥/ ٢٤

نسخة منه الى
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع .. مع التقدير.
- السيد مساعد رئيس الجامعة للشؤون العلمية / للتفضل بالاطلاع .. مع التقدير.
- كلية الهندسة/ للتفضل بالاطلاع .. مع التقدير .
- اللجنة المركزية للترقيات العلمية / للحفظ.
- قسم الشؤون العلمية والعلاقات الثقافية / للتفضل بالعلم .. مع التقدير.
- قسم ضمان جودة الأداء الجامعي / للتفضل بالعلم..مع التقدير.
- قسم ادارة الموارد البشرية / شعبة الملاك... للتأشير .. مع التقدير.
- قسم الدراسات والتخطيط والمتابعة / قاعدة البيانات / للتفضل بالعلم .. مع التقدير.
- الاستاذ المساعد محمد علي اكرم شعبان/ مع التبريكات الخالصة متمنين لكم استمرار العطاء العلمي.
- الصادرة.

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http://www.nahrainuniv.edu.iq

جامعة النهرين / شعبة الترقيات العلمية
العراق - بغداد - الجادرية - ص.ب: ٦٤٠٧٤

العدد: ٢ك/ ٥٠٢٥

التاريخ: ٢٠٢٢/٨/٢٩

جامعة النهرين
عمادة كلية الهندسة
الواردة: ١٩٢٢
التاريخ: ٢٠٢٢/٨/٢٩

امر جامعي

استناداً لأحكام الفقرة (١) من المادة (٢٥) من قانون وزارة التعليم العالي والبحث العلمي رقم (٤٠) لسنة ١٩٨٨ المعدل والصلاحيات المخولة لنا تقرر مايأتي :-

تمنح السيدة (مناهل زينو محمد) الموظفة بعنوان (مبرمج اقدم) على ملاك كلية الهندسة/جامعتنا لقب (مدرس مساعد) لحصولها على شهادة الماجستير علوم الحاسوب بموجب الامر الجامعي المرقم (٤٨٣٦/٣/٢) في ٢٠٢٢/٥/١٢ الصادر من جامعة النهرين/قسم الدراسات العليا وبدون تبعات مالية لحين إقرار الموازنة للعام ٢٠٢٢ وذلك بناءاً على ما جاء بكتاب وزارة التعليم العالي والبحث العلمي /الدائرة الإدارية والمالية/قسم الموارد البشرية/شعبة شؤون الجامعات ذي العدد (ق/٦/٤/٨٣١٢) المؤرخ في ٢٠٢٠/٨/١٦ .

ينفذ امرنا هذا اعتباراً من ٢٠٢٢/٥/١٢ تاريخ الحصول على الشهادة

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
٢٠٢٢/٨/١٨م

نسخة منه الى//

- مكتب السيد رئيس الجامعة/اشارة الى هامش السيد رئيس الجامعة المحترم المؤرخ في ٢٠٢٢/٤/٣... للتفضل بالاطلاع ... مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية/ للتفضل بالاطلاع ... مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون الادارية /للتفضل بالاطلاع ... مع التقدير.
- كلية الهندسة/اشارة الى كتابكم ذي العدد (١٦٨٤) المؤرخ في ٢٠٢٢/٧/٣...للتفضل بالاطلاع ...مع التقدير.
- قسم الشؤون القانونية/للتفضل بالاطلاع ...مع التقدير .
- قسم الدراسات والتخطيط /للتفضل بالاطلاع ... مع التقدير.
- قسم الرقابة والتدقيق الداخلي/ للتفضل بالاطلاع ...مع التقدير.
- قسم الشؤون الادارية والمالية/ السيدة معاون مدير القسم المحترمة/للتفضل بالاطلاع واتخاذ اللازم من قبلكم بشأن توفر التخصيص المالي اللازم حين اقرار الموازنة لعام ٢٠٢٢...لطفا
  /شعبة شؤون التدريسيين/مع الاوليات...لطفا
  /شعبة الملاك/للتأشير...لطفا
- شعبة البريد المركزي/لطفا

دعاء ٢٠٢٢/٧/٥

Republic of Iraq
Ministry of Higher Education & Scientific Research
Al-Nahrain University
Department of Human Resource

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
قسم الموارد البشرية

Ref
Date:

العدد ٣/١/ ١١٨٦٦
التاريخ ٢١-٨-٢٠١٦

جامعة النهرين
عمادة كلية الهندسة
الواردة : ٣٠٤٣٠
التاريخ : ٤/ ٩/ ٢٠١٦

أمر جامعي

استناداً لأحكام الفقرة (١) من المادة (٢٥) من قانون وزارة التعليم العالي والبحث العلمي رقم (٤٠)لسنة ١٩٨٨ المعدل تقرر مايأتي :-

تمنح السيدة (ربى حنا مجيد) الموظفة بعنوان (مهندس اقدم) في كلية الهندسة/جامعتنا لقب (مدرس مساعد) لحصولها على شهادة ماجستير علوم/ الهندسة المدنية بموجب الامر الجامعي ذي العدد ٩٩٢٨/٥/٢ والمؤرخ في ٢٠١٦/٧/١٣ الصادر من جامعتنا / قسم الدراسات العليا على ان تجتاز دورة طرائق التدريس واختبار الصلاحية خلال مدة سنة من تاريخ منحها اللقب .

ينفذ هذا الامر ابتداءاً من تاريخ حصولها على الشهادة في ٢٠١٦/٧/١٣ .

أ.د. نبيل كاظم عبد الصاحب
رئيس الجامعة
/ ٨ / ٢٠١٦م

- ش ع م / شؤون

- م . ٣ ...

٢٠١٦/٩/٤

م.٣ / الحسابات

نسخة منه الى/
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع ... مع التقدير .
- مكتب السيد مساعد رئيس الجامعة للشؤون الادارية / للتفضل بالاطلاع ... مع التقدير.
- كلية الهندسة / اشارة الى كتابكم ذي العدد هـ/٣٢١١ المؤرخ في ٢٠١٦/٨/٢٨ للتفضل بالاطلاع ... مع التقدير.
- قسم الشؤون المالية / للاطلاع ... لطفا .
- قسم الرقابة والتدقيق الداخلي / للاطلاع ... لطفا .
- قسم الدراسات والتخطيط والمتابعة / للتاشير ... لطفا .
- قسم الموارد البشرية / الملاك للتاشير ... لطفا .
- قسم الموارد البشرية / شعبة الموظفين / مع الاوليات ... لطفا .

ندى ٢٠١٦/٨/٢٩

المعيار السابع

الدعم الاداري

جامعة النهرين

كلية الهندسة

قسم الهندسة المدنية

مضمون المعيار السابع ضمن تقرير التقييم الذاتي للاعتماد البرامجي

المعيار السابع: الدعم الاداري

ان المعيار يبين مدى كفاية الفقرات الاتية لتمكين الطلبة في البرنامج من اكتساب محصلات الخريجين

الغاية:

اثبات ان المؤسسة توفر الدعم الاداري للبرنامج من خلال الخدمات المؤسسية المقدمة للبرنامج بالاضافة الى كيفية استقطاب واستيفاء وتطوير اعضاء هيئة التدريس الجيدين والموظفين التقنين والاداريين الجيدين بطريقة مناسبة لتلبية جميع احتياجات البرنامج

1-7 القيادة والخدمات الادارية

ان المعاير يبين دور الادارات الجامعية وكفاية الخدمات الادارية المقدمة للبرنامج وشرح مدى ملائمتها لضمان جودة البرنامج واستمراريته وكيفية مشاركة الادارات الجامعية في القرارات التي تؤثر في البرنامج . وايضاح الدعم المباشر للبرنامج من قبل المؤسسة بما يعزز العملية التعليمية ويتم تنفيذ ذلك من خلال الهيكلية الادارية والتنضيمية في الكلية والصلاحيات المثبتة في الهيكل التنظيمي اضافة الى اللجان الدائمية في الاقسام العلمية والتي من خلالها يتم مشاركة القرارات العلمية والادارية في الاقسام العلمية مثل (اللجنة العلمية، مجلس القسم، اللجنة الامتحانية، لجنة ضمان الجودة في القسم ولجنة جودة المختبرات ،..... الخ)

الغاية :

اثبات وجود قيادة وخدمات ادارية وافية لضمان جودة واستمرارية البرنامج، وتوفير بيئة مناسبة لتحقيق محصلات الخريجين وذلك بان تكون القيادة تفاعلية ابداعية ومستقرة وقادرة على صياغة وتنفيذ سياسات وخطط فعالة وتعظيم موارد التمويل واتخاذ القرارات لتطوير الاداء ضمن اطر زمنية مناسبة وان جميع المهام محددة بوضوح مع تفويض وافي للصلاحيات. وان يكون هناك هيكل تنظيمي فعال ومعلن ويضم

نشاطات لضمان الجودة وان هنالك توثيق فعال لجميع الانشطة والاصدارات والتعليمات. وان اختيار القادة الاكاديمين مبني على اسس منطقية عادلة.

الدليل

- الهيكلية الادارية في الكلية وقسم الهندسة المدنية
- الامر الوزاري بصلاحيات الادارية للهيكل التنظيمي
- الامر الاداري بللجان الرئيسية في القسم

2-7 دعم هيئة التدريس

المعيار السابع يوضح الية تعيين التدريسين الجدد، والسياسات المتبعة للاحتفاظ بالجيدين منهم وترقيتهم ومدى كفاية الدعم الاداري للتطوير المهني لاعضاء هيئة التدريس (كيف يتم تخطيط ودعم انشطة مثل الزمالات البحثية، والزمالات الدراسية، والدورات والورش وغيرها)

الغاية

اثبات وتوقير الدعم الاداري اللازم لتوظيف مايلزم من تدريسين والاحتفاظ بهم وترقيتهم وتطويرهم وتوثيق مدى كفاية ذلك بشكل جيد ويشمل

1-2-7 توظيف اعضاء هيئة التدريس

ان الضوابط والاجراءات الخاصة بتعيين اعضاء هيئة التدريس الجدد هي مناسبة للوفاء بمتطلبات البرنامج ومستندة الى تثبيت الاحتياجات في الهيكلية الادارية وفق حاجة القسم العلمية للاختصاصات العلمية والشهادات العلمية من دكتوراة وماجستير وبكلوريوس

الدليل

- كتاب شعبة الدراسات والتخطيط المتضمن الهيكلية لقسم المدني متضمنا الاحتياج للتخصصات العلمية

7-2-2 استيفاء وترقية اعضاء هيئة التدريس

ان الضوابط والاجراءات الخاصة بالحفاظ على اعضاء هيئة التدريس وترقية مراتبهم العلمية مناسبة للوفائ بمتطلبات البرنامج ، كون الترقيات تعتمد على البحوث المنشورة في المستوعبات العالمية مما يساعد على دخول وارتقاء الجامعة العائد لها صاحب الترقية في التصنيفات العالمية الاولى اضافة الى حاجة القسم للالقاب العلمية في استمرارية الدراسات العليا وهذا يساعد في ديمومة ايصال المعرفة وفتح دراسة الدكتوراة والماجستير في الاقسام العلمية

الدليل

- كتاب امانة مجلس الكلية لاعضاء الهيئة التدريسية المنتسبين لقسم الهندسة المدنية والذين اكتملت اجراءات الترقية العلمية لهم لسنة 2023-2024

7-2-3 دعم وتطوير هيئة التدريس

ان المعيار يبين مضمون ووصف لانشطة التطوير المهني المستمر لاعضاء هيئة التدريس مع التوثيق الجيد لكيفية تخطيط ودعم هذة الانشطة، كالاجازات العلمية والزمالات البحثية والبعثات وحضور الانشطة العلمية في الخارج ويمكن الاستفادة من نتاجات البحث العلمي والدراسات العليا

الدليل

- كتاب الشؤون العلمية في الكلية المتضمن الندوات والورش والسمنرات العلمية والتطويرية للقسم
- كتاب ايفاد م.د. احمد هادي زمالة بحثية الى الجامعة الامريكية في دولة الامارات العربية

7-3 دعم الموظفين الفنين والاداريين

المعيار يبن مدى كفاية الموظفين الفنين والاداريين ومساعدي التعليم من حيث الحجم والمؤهلات والاساليب المستخدمة في توظيفهم والاحتفاظ بهم وترقيتهم وتطويرهم

الغالية:

توفير العدد الكافي من الموظفين الفنيين والاداريين لتلبية احتياجات البرنامج وتوفير البيئة المناسبة لتحقيق محصلات الخريجين وتوثيق ذلك بشكل جيد ويشمل

7-3-1 عدد ومؤهلات الموظفين

المعيار يبين مدى كفاية عدد الموظفين الفنيين والاداريين ومدى ملائمة مؤهلاتهم والتوثيق الجيد لذلك من خلال الادلة ادناه

الدليل

- الهيكلية الادارية في الكلية وقسم الهندسة المدنية.
- كتاب شعبة الدراسات والتخطيط المتضمن الهيكلية لقسم الهندسة المدنية متضمنا الاحتياج التخصصات العلمية

7-3-2 توظيف واستيفاء الموظفين

المعيار يبين مدى كفاءة الضوابط والاجاراءات الخاصة بتعيين الموظفين الفنيين والاداريين الجدد بما يفي بمتطلبات البرنامج والاحتفاظ بالموظفين الجيدين منهم، والتوثيق الجيد لذلك ويتم ذلك وفق الهيكلية والادارية للقسم المتضمنة احتياجات القسم من المنتسبين الاداريين

7-3-3 تطوير وترقية الموظفين

المعيار يبين مدى كفاية الدعم الاداري للتطوير المهني المستمر للموظفين الفنين والاداريين والاجراءات الخاصة بترقيتهم، والتوثيق الجيجد لذلك من خلال الاوامر الادارية بالدروراتالعلمية والادارية في قسم الهندسة المدنية

الدليل

الاوامر الادارية بالدورات العلمية والادارية في قسم الهندسة المدنية

اعداد:

ا.م.د. رائد احمد داود

ا.م.د ضياء مصطفى ذيبان

م.د. احمد فرحان التميمي

REPUBLIC OF IRAQ
MINSTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH
AL-NAHRAIN UNIVERSITY
COLLEGE OF ENGINEERING

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامـعة النهريـــن
كليــة الهندســـة
قسم الهندسة المدنية

العـــدد:هـ.ن.م.د./ ٦٥
الـتاريخ : ٢٠/٢/٢٠٢٤

السيـــد العميـــد المحتـــرم

م/ الهيكلية الادارية للمختبرات

تحية طيبة

يرجـــى تفضـــلكم بالموافقـــة علـــى اصـــدار امـــر اداري خـــاص بالهيكليـــة الاداريـــة لمختبرات قسم الهندسة المدنية وحسب الجدول المرفق طيا.

مع التقدير

ا.د.مصعب عايد كصب
رئيس قسم الهندسة المدنية
٢٠/٢/2024

نسخة منه الى:
- مقررية القسم
- الملف

ت	المختبر	المشرف العلمي	المسؤول الفني	لجنة الاشراف على المختبرات
1.	مختبر الصحية	ا.د. محمد عبدالخالق	م.د. محمد علي اكرم	ا.م.د. محمد علي اكرم م.م. نورة سعد فرج م.مهندس/هبه عبدالرزاق
2.	مختبر الحاسوب	أ.م.د. حسن موسى جواد	م.م.مناهل زينو	م.د. الاء وليد حميد م.م.مناهل زينو م.م. مسره جلاء يحيى م.مهندس/ رشا جمال علي
3.	مختبر الانشاءات والمقاومة	ا.م.د. ابراهيم سليم ابراهيم	م.د. الاء وليد حميد	ا.م.د. احمد فالح البياتي ا.م.د. عبدالخالق جبار عبدالرضا م.د. الاء وليد حميد م. زاهر نوري محمد تقي مدير فني اقدم محمود ناجي كاظم
4.	مختبر التربة	أ. د. قاسيون سعدالدين شفيق	م. ازهر صادق ياسين	أ. عباس جواد عبدالحسين م. ازهر صادق ياسين م.م. ربى حنا مجيد م.ر.مهندسين/ اسراء عبدالقادر عبدالكريم م.مهندس/رشا جمال علي
5.	مختبر المواصلات	ا.د. علاء عبدالحسين عبد	م.م. محمد هاشم عبدالجبار	أ.م.د. حسن موسى جواد م.د احمد فرحان مويز م.م. محمد هاشم عبدالجبار م.مهندس/ ايات حسين مجيد م.مهندس/زهراء طالب هاشم
6.	مختبر المواد	ا.د. احمد سلطان علي	م.م. حوراء سعيد جواد	م.م. حوراء سعيد جواد م.مهندس/لؤي حسن جبار م.مهندس/فاروق رعد سعدالله ملاحظ فني علي لطيف عاصي
7.	مختبر المساحة	أ.م.د. اسماء ثامر ابراهيم	م.م. ربى حنا مجيد	أ.م.د. اسماء ثامر ابراهيم م.مهندس/لؤي حسن جبار م.مهندس/فاروق رعد سعدالله م.مهندس/ ايات حسين مجيد مدير فني اقدم محمود ناجي كاظم

REPUBLIC OF IRAQ
MINSTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH
AL-NAHRAIN UNIVERSITY
COLLEGE OF ENGINEERING

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

العدد: هـ ن م د / ٤٠٠
التاريخ : ٨/١٠/٢٠٢٣

السيد معاون العميد للشؤون العلمية المحترم

م/ خطة الورش والندوات

اشارة الى كتابكم ذي العدد هـ.ن./2015/4/2 بتاريخ 2023/8/20، نرافق لكم خطة الورش والندوات في قسم الهندسة المدنية للعام الدراسي 2023-2024.

للتفضل بالاطلاع ... مع التقدير

أ. د. مصعب عايد كصب
رئيس قسم الهندسة المدنية
2023/ /١٠/٨

العلمية
٨/ ١٠/ ٢٠٢٣
د. نصير عبود عيسى الحبوبي

جامعة النهرين

كلية الهندسة

قسم الهندسة المدنية

خطة الورش والندوات في قسم الهندسة المدنية للعام الدراسي 2023-2024

ت	اسماء المحاضرين	جهة الانتساب	عنوان المحاضرة	الاختصاص	الموعد
1	أ.د. قاسيون سعدالدين شفيق	جامعة النهرين	Behavior and Influence of Piles under Earthquakes with different Loading Conditions	Geotechnical Engineering	الفصل الثاني
2	أ.د. زياد سليمان محمد خالد + أ.د. جلال محمد جليل	مجلس اعتماد التعليم الهندسي في العراق	The Role of Program Accreditation in Successful Bologna Process Implementation	Education system	الفصل الاول
3	أ.م.د. رياض جواد عزيز	كلية الاسراء الجامعة	Joint Performance of Wood Concrete Pre-cast Panels under Lateral Loads	Structural Engineering	الفصل الثاني
4	م.د. علاء موسى جواد	جامعة بغداد	Structural Assessment and Maintenance of Bridges	Structural Engineering	الفصل الاول
5	م.د. حسن علي عباس	كلية مدنية العلم الجامعة	Insight on challenges of utilizing of nondestructive techniques in characterizing in weak rock failure	Geotechnical Engineering	الفصل الاول

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NAHRAIN UNIVERSITY
COLLEGE OF ENGINEERING

(1-2-7) دليل

وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة
شعبة الدراسات والتخطيط والمتابعة

العدد : هـ.ن / ٢/٥/ ١٦٢٤
التاريخ : ٢٠٢٤/٥/١٩

السيد رئيس قسم الهندسة المدنية المحترم

م/الهيكلية العلمية والادارية

تحية طيبة...

اشارة الى كتابكم ذي العدد (هـ.ن.م.د/٣٦ المؤرخ في ٢٠٢٤/١/٣١) المتضمن الهيكلية العلمية والادارية للقسم ، بصدده نود اعلامكم بأنه قد تم ارسالها الى رئاسة الجامعة /قسم الدراسات والتخطيط بموجب كتابنا ذي العدد (هـ ن/١/١/٢١٢١ المؤرخ في ٢٠٢٤/٤/١٥) والمعطوف على كتاب رئاسة الجامعة ذي العدد (٢/٥/١٢٠٠٤ المؤرخ في ٢٠٢٤/١/١٨) .

مع التقدير...

المرفقات:
-نسخة من كافة الاوليات اعلاه.

أ. د. نصير عبود عيسى
معاون العميد للشؤون العلمية والدراسات العليا
١٤ / أيار / ٢٠٢٤م

جامعة النهرين/ كلية الهندسة
معاون العميد
الشؤون العلمية و الطلبة

نسخه منه الى/
- مكتب السيد العميد /للتفضل بالاطلاع ...مع التقدير
- مكتب المعاون العميد للشؤون الادارية / للتفضل بالاطلاع ...مع التقدير
- شعبة الدراسات والتخطيط
- الملف.

P.O Box 64040 Jadriya – Baghdad –Iraq
Phone: 7786417- 7784696

العراق - بغداد - ص ب ٦٤٠٤٠ الجادرية
هاتف: ٧٧٨٦٤١٧ - ٧٧٨٤٦٩٦

REPUBLIC OF IRAQ
MINISTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH
AL-NAHRAIN UNIVERSIT Y
COLLEGE OF NGINEERING

Department of Civil Engineering

بسم الله الرحمن الرحيم

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة

قسم الهندسة المدنية

العدد : هـ.ن.٣.د/٣٦
التاريخ: ٢٩/١/٢٠٢٤

السيد عميد كلية الهندسة المحترم

م/الهيكلية العلمية والادارية

تحية طيبة.....

اشارة الى كتاب رئاسة جامعة النهرين/قسم الدراسات والتخطيط والمتابعة بالعدد 1204/5/2 في 2024/01/18 المتضمن تزويدهم بالهيكلية العلمية والادارية، نرافق لكم الهيكلية العلمية للعام الدراسي 2023-2024 والهيكلية الادارية لقسم الهندسة المدنية وعلى قرص مدمج(CD).

مع التقدير

ا.د.مصعب عايد كصب

رئيس القسم

٣١/١/٢٠٢٤

نسخة منه الى/

- شعبة الدراسات والتخطيط ومتابعة
- الملف

E-Mail: civildept@eng.nahrainuniv.edu.iq

جدول رقم (1)

التوصيف الوظيفي					الحالي					الاحتياج او الفائض				
التخصص العام	التخصص الدقيق	عدد التدريسيين حسب التوصيف الوظيفي الامثل			التخصص العام	التخصص الدقيق	عدد التدريسيين الحالي			التخصص العام	التخصص الدقيق	عدد التدريسيين حسب الاحتياج او الفائض =عدد التدريسيين الحالي -عدد التدريسيين حسب التوصيف		
	(اختياري)	ماجستير	دكتوراه	المجموع			ماجستير	دكتوراه	المجموع		(اختياري)	ماجستير	دكتوراه	المجموع
المدني	مساحة	1	2	3	المدني	مساحة	1	0	1	المدني	مساحة	-	2-	2-
	انشاءات	4	13	17		انشاءات	4	13	17		انشاءات	-	-	0
	طرق ومواصلات	2	5	7		طرق ومواصلات	1	4	5		طرق ومواصلات	1-	1-	2-
	جيوتكنيك	5	3	8		جيوتكنيك	5	2	7		جيوتكنيك	-	1-	1-
	البيئة	1	2	3		البيئة	1	3	4		البيئة	-	1	1
	مواد البناء	3	2	5		مواد البناء	3	1	4		مواد البناء	-	1-	1-
	ادارة مشاريع	1	1	2		ادارة مشاريع	0	1	1		ادارة مشاريع	1-	0	1-
	الهيدروليك والموارد المائية	2	2	4		الهيدروليك والموارد المائية	0	1	1		الهيدروليك والموارد المائية	2-	1-	3-

جدول رقم (2)

ت	الشهادة	الاختصاص العام	العنوان الوظيفي	العدد وفق التعليمات	العدد الحالي	الاحتياج او الفائض (-) او (+)
1	بكالوريوس	ادارة اعمال	م. مدير	2	1	-1
2	بكالوريوس	برمجة	م. مبرمج	1	0	-1
3	بكالوريوس	هندسة مدني	م. مهندس	2	2	0
4	دبلوم	تقني فني	ملاحظ	4	1	-3

(7-2-2) دليل

جامعة النهرين
كلية الهندسة
مكتب العميد

العدد: هـ. ن/ ١/٢/ ٦٦٦ التاريخ: ١٤/ ٥/ ٢٠٢٤

السيد رئيس قسم الهندسة المدنية المحترم

م/ ترقيات علمية

تحية طيبة ....

لأغراض استكمال ملف الاعتماد المؤسسي، في أدناه أسماء التدريسيين ممن تمت ترقيتهم الى المراتب العلمية المؤشرة إزاء كل منهم للفترة من (١/٩/٢٠٢٢ – ١/٥/٢٠٢٤) ، قدر تعلق الأمر بقسم الهندسة المدنية .

ت	أسماء التدريسيين	المرتبة العلمية للترقية
١-	د. حسام كاظم رسن	أستاذ
٢-	د. ابراهيم سليم ابراهيم	أستاذ
٣-	د. احمد فالح احمد فاضل	أستاذ
٤-	أ.م. رنا اسماعيل خليل	أستاذ مساعد
٥-	د. ضياء مصطفى ذيبان	أستاذ مساعد
٦-	د. محمد علي أكر محمد شعبان	أستاذ مساعد
٧-	د. زينة رياض صالح	أستاذ مساعد
٨-	د. زهير خضر علاوي	أستاذ مساعد
٩-	م. حوراء سعيد جواد	مدرس

أ.د. جمعة سلمان جياد
العميد
١٤/أيار/ ٢٠٢٤ م

نسخة منه الى //
- مكتب السيد العميد / مع التقدير.
- أمانة مجلس الكلية.

Al-Nahrain University \ College of Engineering.
P.O.Box: (64040) Jadriah , Baghdad , Iraq
E-Mail: dean.office@eng.nahrainuniv.edu.iq , https://engar.nahrainuniv.edu.iq

جامعة النهرين / كلية الهندسة
العراق - بغداد - الجادرية- ص. ب: ٦٤٠٤٠

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COLLEGE OF ENGINEERING

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامـعة النهريـــن
كليـــة الهندســـة
قسم الهندسة المدنية

العـــدد : م.ه.د.م / ٢٣٣٤

التاريخ: ٢٩/ ٨/ ٢٠٢٣

7.3.1

امر داخلي

الكادر الفني لمختبرات قسم الهندسة المدنية

بناءا على مقتضيات مصلحة العمل، تقرر اعادة تشكيل الكادر الفني الخاص بمختبرات قسم الهندسة المدنية لتكون كالاتي:

اسم المختبر	الكادر الفني
مختبر الانشاءات	م.مهندس/ فاروق رعد سعد مدير فني اقدم/محمود ناجي كاظم ملاحظ فني/علي لطيف عاصي
مختبر المواد	م.مهندس/ فاروق رعد سعد م.مهندس/ هبه عبدالرزاق يوسف ملاحظ فني/علي لطيف عاصي
مختبر التربة	مهندس اقدم/ اسراء عبدالقادر عبدالكريم م.مهندس/ لؤي حسن جبار م.مهندس/ هبه عبدالرزاق يوسف مدير فني اقدم/محمود ناجي كاظم ملاحظ فني/علي لطيف عاصي
المساحة	م.مهندس/ لؤي حسن جبار م.مهندس/ ايات حسين مجيد م.مهندس/ فاروق رعد سعد
الطرق	م.مهندس/ لؤي حسن جبار م.مهندس/ ايات حسين مجيد مدير فني اقدم/مجيد جعفر مجيد
الصحية	م.مهندس/ هبه عبدالرزاق يوسف م.مهندس/ ايات حسين مجيد مدير فني اقدم/مجيد جعفر مجيد

ا.د.مصعب عايذ كصب
رئيس قسم الهندسة المدنية
2023/8/29

نسخة منه الى
- مقررية القسم
- الموما اليهم اعلاه....مع التقدير
- الملف

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
مكتب الوزير

Republic of Iraq
Ministry of Higher Education & Scientific Research
Minister office

No : م و ٢/ ٢٠٠

Date: التاريخ: ٨ / ٤ / ٢٠٢٤

العدد: م و ٢/ ٢٠٠
التاريخ: ٨ / ٤ / ٢٠٢٤

دليل (4-1-7)

منتسبي وزارة التعليم العالي والبحث العلمي المحترمون

منتسبي الجامعات والكليات الأهلية المحترمون

م/ شكر وتقدير

السلام عليكم ورحمة الله وبركاته ..

بمناسبة حلول عيد الفطر المبارك يسعدنا أن نتقدم بأطيب التهاني والتبريكات إلى الإدارات الجامعية والهيئات التدريسية والملاكات الوظيفية في مركز الوزارة وتشكيلاتها ثميناً وعرفاناً لجهودهم المهنية وحرصهم في إنجاز الأعمال والواجبات الموكلة إليهم بكل تفانٍ وإخلاص والإستجابة لأهداف التنمية المستدامة ورعاية أبنائنا الطلبة ودعم الخدمات العلمية والتعليمية في مختلف التخصصات، ولا يسعنا في هذا المقام إلا أن نسأل المولى (عز وجل) أن يوفقكم لخدمة عراقنا الحبيب... ومن الله التوفيق.

الدكتور نعيم العبودي
وزير التعليم العالي والبحث العلمي
٨ / ٤ / ٢٠٢٤

الدكتور
نعيم العبودي
وزير التعليم العالي والبحث العلمي

صورة عنه إلى/
- المكتب مع الأوليات.
- تشكيلات الوزارة كافة (الجامعات – الهيئتين - المجلس العراقي للاختصاصات الطبية) / للتفضل بالاطلاع واتخاذ ما يلزم بشأن منح منتسبيكم القدم المنصوص عليه قانوناً ويستثنى من ذلك أصحاب الاجازات الطويلة التي تزيد عن ثلاثة اشهر ومن صدرت بحقهم عقوبات انضباطية خلال العام الدراسي ٢٠٢٣- ٢٠٢٤ .. مع التقدير.
- دوائر الوزارة كافة / للتفضل بالاطلاع .. مع التقدير
- الدائرة الإدارية والمالية / للتفضل بالاطلاع واتخاذ ما يلزم بشأن منح منتسبي مركز الوزارة القدم المنصوص عليه قانوناً وحفظه في أضابيرهم الشخصية ويستثنى من ذلك اصحاب الاجازات الطويلة التي تزيد عن ثلاثة اشهر ومن صدرت بحقهم عقوبات انضباطية خلال العام الدراسي ٢٠٢٣- ٢٠٢٤ .. مع التقدير.
- شعبة الدرجات الخاصة / للتفضل بالإطلاع وإتخاذ اللازم .. مع التقدير.

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com@mohesr.gov.iq
www.mohesr.gov.iq

No : العدد: ٥٠٨/٢٩٣
Date: التاريخ: ٢٠٢٤/٣/٦

السيدات منتسبات وزارة التعليم العالي والبحث العلمي وتشكيلاتها المحترمات

م/ شكر وتقدير

لا الأقلام والأفكار تنصفكِ ولن ترقى   فأنتِ فريدة لا تشبهين أحداً

في عيدكن الأغر يسعدنا أن نتقدم إليكن بخالص الشكر تقديراً لجهودكن القيمة والمتميزة ونعاهد أنفسنا على دعمكن وتمكينكن لتستمرن في بناء مستقبل مشرق لبلادنا، فلا يكفينا يوم واحد للتعبير عن امتناننا لكن، فأنتن النجوم المنيرة في سماء وزارتنا وتشكيلاتها وبلادنا، وختاماً لا يسعنا إلا أن نسأل المولى (عز وجل) أن يوفقكن لخدمة بلدنا العزيز.. ومن الله التوفيق.

عيد سعيد لكن

الدكتور
نعيم العبودي
وزير التعليم العالي والبحث العلمي

الدكتور نعيم العبودي
وزير التعليم العالي والبحث العلمي
٢٠٢٤/٣/

صورة عنه إلى/
- مكتب الوزير/ مع الأوليات.
- مكاتب السادة الوكلاء/ للتفضل بالاطلاع .. مع التقدير
- مكتب مستشار الوزارة/ للتفضل بالاطلاع .. مع التقدير
- جهاز الاشراف والتقويم العلمي/ للتفضل بالاطلاع .. مع التقدير
- الجامعات الحكومية كافة/ مكاتب السادة رؤساء الجامعات/ للتفضل بالاطلاع واتخاذ اللازم [illegible] المنصوص عليه قانوناً .. مع التقدير
- الجامعات والكليات الاهلية كافة/ للتفضل بالاطلاع .. مع التقدير
- دوائر الوزارة كافة/ للتفضل بالاطلاع .. مع التقدير
- الدائرة الادارية والمالية/ للتفضل بالاطلاع واتخاذ اللازم بشأن منح منتسبات مركز الوزارة [illegible] في اضابيرهن الشخصية .. مع التقدير
- قسم تمكين المرأة/ اشارة الى مذكرتكم ذات العدد (م وم د/٥٦) في ٢٠٢٤/٢/٢٦ للتفضل بالاطلاع .. مع التقدير

بسم الله الرحمن الرحيم

REPUBLIC OF IRAQ
Ministry of Higher Education &
Scientific Research
Ministry Deputy Office
for Scientific Research Affairs

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
مكتب وكيل الوزارة لشؤون البحث العلمي

No — العدد: ق ب ١٦/ش ١٥٩٥
Date — التاريخ: ٢٠٢٣/٣/٧

الى/ منتسبات وزارة التعليم العالي والبحث العلمي وتشكيلاتها كافة

الصادرة

م/ شكر وتقدير

السلام عليكم ورحمة الله وبركاته...

في يوم العالمي للمرأة الموافق الثامن من شهر اذار من كل عام والذي يعد من ابرز المناسبات، وتقديراً واحتراماً لها وامتنان لما تقدمه المرأة العراقية بشكل خاص من خلال دورها المتميز في المجالات كافة والذي يسهم بشكل فعال لبناء وتطور المجتمع

لا يسعنا في هذه المناسبة الا أن نقدم شكرنا وتقديرنا لهن ، متمنين بذل مزيداً من العطاء خدمةً للصالح العام.

والله ولي السداد والتوفيق

أ. د. حيدر عبد ضهد
وكيل الوزارة لشؤون البحث العلمي
٢٠٢٣/٣/٧

نسخة منه الى///
- ... مع الاوليات
م م سرى

E-mail:ministry_res_deputy@mohesr.gov.iq

٤/١٥
كولاج

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
قسم الشؤون العلمية والعلاقات الثقافية
شعبة الشؤون العلمية

جامعة النهرين - وزارة التعليم العالي والبحث العلمي - جمهورية العراق - جامعة النهرين - وزارة التعليم العالي والبحث العلمي - جمهورية العراق

العدد: ٢/٦/٥٥٦٧
التاريخ: ٢٠٢٤/٤/٧

م/ شــكر وتقــديــر

تثمينا لجهودكم العلمية المتميزة من خلال نشر بحوثكم في مجلات علمية مسجلة ضمن قاعدة بيانات (Scopus) لا يسعنا الا ان نقدم لكم شكرنا و تقديرنا لدعم المسيرة العلمية في العراق متمنين لكم المزيد من العطاء والتوفيق .

ت	الاسم	جهة الانتساب	عنوان البحث	اسم المجلة
١	ا.د. احمد وحيد مصطفى ا.م.د. هالة سلمان حسن	كلية الهندسة	Constructal Design of Vertical Multiscale Triangular Fins in Natural Convection	Heat Transfer
٢	ا.د. سوزان عبد حسن	كلية الهندسة	Urban Attractiveness Soundscape Index for Evaluating Traditional Open Spaces: Insights from Baghdad, Iraq	ISVS e-journal
٣	ا.م.د. اسماء ثامر ابراهيم	كلية الهندسة	Sustainable Road Paving: Enhancing Concrete Paver Blocks with Zeolite-Enhanced Cement	Open Engineering
٤	م.د. دعاء عبد الرزاق فالح ا.د. مصعب عايد كصب	كلية الهندسة	Data-Driven Prediction of Maximum Settlement in Pipe Piles under Seismic Loads	Journal of Marine Science and Engineering

أ. د. علي عبد العزيز الشاوي
رئيس الجامعة
٧ / نيسان / ٢٠٢٤

السيد المقرر / للتفضل بالاطلاع
يبلغ المعنيين عن طريق القسم وتصوير نسخة
١٠/٤/٢٠٢٤

نسخة منه الى:

- مكتب السيد رئيس الجامعة للتفضل بالاطلاع ... مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية للتفضل بالاطلاع ... مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون الادارية للتفضل بالاطلاع... مع التقدير.
- عمادة كلية الهندسة / اشارة الى كتابكم ذي العدد (هـ.ن/١/١/١٨٩٤ في ٢٠٢٤/٣/٢٨) للتفضل بالاطلاع واتخاذ ما يلزم وابلاغ تسلسل (٢) من اعلاه بكتابة جهة الانتساب مستقبلا كما ورد في استمارة تحفيز البحث العلمي (القسم، التشكيل، الجامعة) ... مع التقدير.
- قسم ضمان الجودة والاداء الجامعي للتفضل بالاطلاع ... مع التقدير.
- قسم الدراسات والتخطيط للتفضل بالاطلاع والتأشير ... مع التقدير.
- الصادرة .

Nada 2/4

العدد: ٣/٩/٣٥٤٥ التاريخ: ٢/٤/٢٠٢٤

م/ شـــكر وتقـديـر

تثمـينا لجهـودكم المتميـزة مـن خـلال مشاركتكم ببحثكم في مؤتمر علمي الذي تمت فهرسة وقائعه في قاعدة بيانات (Scopus) لا يسعنا الا ان نقدم لكم شكرنا و تقديرنا لدعم المسيرة العلمية في العراق متمنين لكم المزيد من العطاء و التوفيق.

ت	الاسم	الكلية	عنوان البحث	اسم فهرس وقائع المؤتمر
١	ا.د. قاسيون سعد الدين محمد ا. عباس جواد عبد الحسين	كلية الهندسة	Evaluation of Tikrit Dune Sand Soil Enhanced with CKD	E3S Web of Conferences

ابلاغ لوما ليهما

أ. د. علي عبد العزيز الشاوي
رئيس الجامعة
٢ / نيسان/ ٢٠٢٤

نسخة منه الى:

- مكتب السيد رئيس الجامعة للتفضل بالاطلاع ... مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية للتفضل بالاطلاع... مع التقدير.
- عمادة كلية الهندسة / اشارة الى كتابكم ذي العدد (هـ.ن/١/١/١٨٩٤ في ٢٠٢٤/٣/٢٨) للتفضل بالاطلاع واتخاذ ما يلزم وابلاغ المومأ اليهما بكتابة جهة الانتساب مستقبلا كما ورد في استمارة تحفيز البحث العلمي (القسم، التشكيل، الجامعة) ... مع التقدير.
- قسم الدراسات والتخطيط للتفضل بالاطلاع والتأشير ... مع التقدير.
- قسم ضمان الجودة والاداء الجامعي للتفضل بالاطلاع ... مع التقدير.
- الصادرة.

Nada 2/4

العدد: ٣/٤/٢٥٥٢ التاريخ: ١٢/٢/٢٠٢٤

م/ شـــكر وتقـــديـــر

تثمينا لجهودكم العلمية المتميزة من خلال نشر بحوثكم في مجلات علمية مسجلة ضمن قاعدة بيانات (Scopus) لا يسعنا الا ان نقدم لكم شكرنا و تقديرنا لدعم المسيرة العلمية في العراق متمنين لكم المزيد من العطاء والتوفيق .

ت	الاسم	الكلية	عنوان البحث	اسم المجلة
١	ا.م. د. عبد الخالق جبار عبد الرضا	كلية الهندسة	The Behavior of Reinforced Lightweight Concrete Beams with Initial Cracks	Frattura ed Integrita Strutturale
٢	م.د. احمد ايوب يوسف	كلية العلوم	A Developed Technique of Homotopy Analysis Method for Solving Nonlinear Systems of Volterra Integro-Differential Equations of Fractional Order	Partial Differential Equations in Applied Mathematics
٣	م. عبير خزعل شمس م. رنا عبد حمزة م.اخلاص عبد الخضر سلمان ا.د. تغريد علي سلمان	كلية العلوم	Experimental and Theoretical Evaluations of Naproxen Drug as a Green Corrosion Inhibitor for Carbon Steel in an Acidic Medium	International Journal of Corrosion and Scale Inhibition

أ.د. علي عبد العزيز الشاوي
رئيــس الجامعــة
١٢/ شباط / ٢٠٢٤

نسخة منه الى:

- مكتب السيد رئيس الجامعة للتفضل بالاطلاع ... مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية للتفضل بالاطلاع ... مع التقدير.
- عمادة كلية الهندسة / اشارة الى كتابكم ذي العدد (هـ. ن /١/٢/٥١٨ في ٢٠٢٤/١/٢٩) للتفضل بالاطلاع واتخاذ ما يلزم... مع التقدير.
- عمادة كلية العلوم / اشارة الى كتابيكما ذيا العددين (ع. ص/٢/٤/٦٦٣ في ٢٠٢٤/٢/١) و (ع. ص/٢/٤/٦٦٤ في ٢٠٢٤/٢/١) للتفضل بالاطلاع واتخاذ ما يلزم ... مع التقدير.
- قسم ضمان الجودة والاداء الجامعي للتفضل بالاطلاع ... مع التقدير.
- قسم الدراسات والتخطيط للتفضل بالاطلاع والتأشير ... مع التقدير.
- الصادرة .

Nada 5/2

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جامعة النهرين /قسم الشؤون العلمية والعلاقات الثقافية
العراق - بغداد - الجادرية - ص. ب: ٦٤٠٧٤

جامعة النهرين
كلية الهندسة

مكتب العميد

العدد: هـ - ن / ١ / ١ / ٥٧٦ التاريخ: ٤ / ٢ / ٢٠٢٤

الذوات المدرجة أسماؤهم أدناه المحترمون / قسم الهندسة المدنية

المدرس المساعد / قتيبة عبدالهادي عبود
م.مهندس / هبة عبدالرزاق يوسف
م.مهندس / فاروق رعد سعدالله

م/ شكر وتقدير

تحية طيبة ...

يسر عمادة كلية الهندسة ان تتقدم اليكم بالشكر والتقدير عن جهودكم المتميزة ومساندتكم لأعمال اللجنة الامتحانية خلال فترة الامتحانات النهائية للفصل الأول من العام الدراسي (٢٠٢٣/٢٠٢٤) ، فضلاً عن المهام الأخرى المهام المكلفين بها في قسم الهندسة المدنية ، متمنين لكم دوام الموفقية وآملين بذل المزيد والأستمرار بالعطاء خدمة لكليتنا وجامعتنا العزيزة.

مع التقدير

أ.د. جمعة سلمان جياد
العميد
٤/ شباط/ ٢٠٢٤م

السكرتارية
يدرج في اضبارة المعنيين
٤/٢

نسخة منه الى /
مكتب السيد العميد / للتفضل بالإطلاع... مع التقدير.
السيدين معاوني العميد/ مع التقدير.
قسم الهندسة المدنية / مع التقدير .
شعبة الموارد البشرية / مع التقدير.
أمانة مجلس الكلية.

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جامعة النهرين / كلية الهندسة
العراق - بغداد - الجادرية- ص. ب: ٦٤٠٤٠

جامعة النهرين
كلية الهندسة
مكتب العميد

جمهورية العراق - وزارة التعليم العالي والبحث العلمي - جامعة النهرين - جمهورية العراق - وزارة التعليم العالي والبحث العلمي - جامعة النهرين - جمهورية العراق - وزارة التعليم العالي والبحث العلمي - جامعة النهرين

العدد: ه.ع / ١/١/ ٥٧٧ التاريخ: ٤ / ٢ / ٢٠٢٤

الذوات المدرجة أسماؤهم أدناه المحترمون / قسم الهندسة المدنية

الأستاذ الدكتور جبار حمود عبدالنبي البيضاني
المدرس المساعد هبة عماد عباس
المدرس المساعد مسرة جلاء يحيى

م/ شكر وتقدير

تحية طيبة ...

يسر عمادة كلية الهندسة ان تتقدم اليكم بالشكر والتقدير عن جهودكم المتميزة المبذولة خلال تكليفكم بمهام لجنة امتحانية لتهيئة المتطلبات ومتابعة تنفيذ الامتحان الشامل لطلبة الدكتوراه في قسم الهندسة المدنية للعام الدراسي (٢٠٢٣/٢٠٢٤) بمستوى عالٍ من الحرص ودقة الإنجاز، فضلاً عن المهام الأخرى المكلفين بها ، متمنين لكم دوام الموفقية والرقي العلمي والأستمرار بالعطاء خدمة لكليتنا وجامعتنا العزيزة.

مع التقدير

أ.د. جمعة سلمان جياد
العميد
٤/ شباط/ ٢٠٢٤م

نسخة منه الى /
مكتب السيد العميد / للتفضل بالإطلاع... مع التقدير.
السيدين معاوني العميد/ مع التقدير.
قسم الهندسة المدنية / مع التقدير .
شعبة الموارد البشرية / مع التقدير.
أمانة مجلس الكلية.

جامعة النهرين
قسم التسجيل وشؤون الطلبة
شعبة التسجيل والقبول

جمهورية العراق - وزارة التعليم العالي والبحث العلمي - جامعة النهرين - جمهورية العراق - وزارة التعليم العالي والبحث العلمي - جامعة النهرين

العدد: ٢/٢/١٤٤٦ التاريخ: ٣١/١/٢٠٢٤

جامعة النهرين
عمادة كلية الهندسة
الواردة: ٤٠٦
التاريخ: ٢٥/١/٢٠٢٤

شكر وتقدير

اشارة الى الفقرة (أ.هـ.) من امتيازات اعضاء اللجان الأمتحانية الواردة في دليل ادارة الامتحانات الجامعية / الدراسات الاولية ونظرا للجهود المبذولة من قبل التدريسيين في كلية الهندسة المدرجة أسماؤهم في القائمة المرفقة طيا والتي تبدأ بالتسلسل (١. أ.د. جمعة سلمان جياد) و تنتهي بالتسلسل (٧٧.م.م. احمد مكي) لمساهمتهم الفاعلة والقيام بواجبهم الأكمل في اللجان الأمتحانية للسنة الدراسية ٢٠٢٢/٢٠٢٣ لا يسعنا الأن نقدم شكرنا وتقديرنا ، وفقكم الله لخدمة بلدنا العزيز ولجامعتنا الرفعة والأرتقاء.

رئاسة جامعة النهرين
قسم التسجيل و شؤون الطلبة
الدراسات الاولية

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
٢٠٢٤/١/٣١

م. ادوارى

السيد المعاون / للاستشارة

ابلاغ المشمولين من القسم وتصوير نسخة منه لي رجاءً
٢٩/١

للحفظ في الاضبارة ومنح الشكر للاعضاء بالحد والاستحقاق

زينب هادي //١/٢١

كلية الهندســـة //

ت	أسماء أعضاء اللجان الامتحانية
١	أ.د. جمعة سلمان جياد
٢	أ.د. باسم عبيد حسن
٣	أ.د. مصعب عايد كصب
٤	أ.د. عقيل عبد الله محمد
٥	أ.د. احمد وحيد مصطفى
٦	أ.د . محمد قاسم عبد الغفور
٧	أ.د. نصير عبود عيسى الحبوبي
٨	أ.د.خالد مخلف موسى
٩	أ.د. احمد عبد السميع عبد الوهاب
١٠	أ.د. ابراهيم سليم ابراهيم
١١	أ.م.د. رعد كاظم محمد
١٢	أ.م.د. احمد رياض عباس
١٣	أ.م.د. أنوار عبد الستار عبد الرزاق
١٤	أ.م.د. صادق جعفر عباس
١٥	أ.م.د. أنس قصي هاشم
١٦	أ.م.د. ياسر يعرب قحطان
١٧	أ.م.د. محمد صبري سالم
١٨	أ.م.د. احمد فالح احمد فاضل
١٩	أ.م.د. ليث خالد كامل
٢٠	أ.م.د ضياء مصطفى ذبيان
٢١	أ.م.د. عمر خالد فياض
٢٢	أ.م.د. سماح عبد العزيز ابراهيم
٢٣	أ.م.د. محمد علي أكرم شعبان
٢٤	أ.م.د عباس عبد الكريم محمود
٢٥	أ.م.د.حيدر موفق توفيق
٢٦	أ.م.د. أنس لطيف محمود
٢٧	أ.م.د.عمار عصام صالح
٢٨	أ.م.د. رائد احمد داود
٢٩	أ.م.د. فهد مهند كاظم
٣٠	أ.م.د.رشيد نعمة عبد عفين
٣١	أ.م.د. أمينة محمود شاكر
٣٢	أ.م.د.غانم شاكر صادق
٣٣	أ.م.د. فاطمة حامد رجب
٣٤	م.د. أثيل نوفل محمد طاهر
٣٥	م.د. محمد صباح محمد

العدد: ط ن / ١ / ١ / ٢٧٩
التاريخ: ٢٠٢٤/١/٢٤

الأستاذ المساعد الدكتور سلطان احمد داود المحترم
قسم الهندسة المدنية

م/ شكر وتقدير

تحية طيبة ...

يسر عمادة كلية الهندسة بجامعة النهرين ان تتقدم اليكم بالشكر والتقدير عن جهودكم المبذولة خلال فترة تكليفكم بمهام (مسؤول وحدة التأهيل والتوظيف) في كلية الهندسة ، وتعاونكم مع الأقسام العلمية في تنفيذ المهام والواجبات، متمنين لكم دوام الموفقية والرقي العلمي خدمة لكليتنا وجامعتنا العزيزة .

مع التقدير

أ.د. جمعة سلمان جياد
العميد
٢٤/ كانون الثاني/ ٢٠٢٤ م

نسخة منه الى /
مكتب السيد العميد / للتفضل بالإطلاع .... مع التقدير.
السيدين معاوني العميد / مع التقدير.
قسم الهندسة المدنية / مع التقدير.
شعبة الموارد البشرية / مع التقدير.
أمانة مجلس الكلية .

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جامعة النهرين / كلية الهندسة
العراق - بغداد - الجادرية - ص.ب : ٦٤٠٤٠

١/٦١

جامعة النهرين
قسم الشؤون العلمية
والعلاقات الثقافية
شعبة الشؤون العلمية

جمهورية العراق - وزارة التعليم العالي والبحث العلمي - جامعة النهرين

العدد: ٢/٤/٢٠٥٤٢

التاريخ: ٩/١/٢٠٢٤

جامعة النهرين
عمادة كلية الهندسة
الواردة: ١٠٤٢
التاريخ: ٢٠٢٤/١/١٠

م/ شكر وتقدير

تثمينا لجهودكم العلمية المتميزة من خلال نشر بحوثكم في مجلات علمية رصينة لا يسعنا الا ان نقدم شكرنا وتقديرنا لهذه الجهود المتميزة في دعم المسيرة العلمية في العراق متمنين لكم المزيد من العطاء والتوفيق.

ت	الاسم	الكلية	اسم البحث	اسم المجلة	درجة معامل التأثير
١	ا.د. احمد كمال احمد	كلية الهندسة	First- and Third-Order Chromatic Aberrations in Glaser Magnetic Lens for Object Magnetic Immersion	Heliyon	4
٢	ا.م.د. حسن موسى جواد	كلية الهندسة	Appraising the Synergistic Use of Recycled Asphalt Pavement and Recycled Concrete Aggregate for the Production of Sustainable Asphalt Concrete	Case Studies in Construction Materials	6.2

ا.د. علي عبد العزيز الشاوي
رئيس الجامعة
٨/ كانون الثاني / ٢٠٢٤

نسخة منه الى:

- مكتب السيد رئيس الجامعة للتفضل بالاطلاع ... مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية للتفضل بالاطلاع ... مع التقدير.
- عمادة كلية الهندسة / اشارة الى كتابكم ذي العدد (هـ. ن ٣٢/١/١ في ٢٠٢٤/١/٣) للتفضل بالاطلاع واتخاذ ما يلزم وابلاغ تسلسل (٢) بكتابة جهة الانتساب مستقبلا كما ورد في استمارة تحفيز البحث العلمي (القسم، التشكيل، الجامعة) ... مع التقدير.
- قسم ضمان الجودة والاداء الجامعي للتفضل بالاطلاع ... مع التقدير.
- قسم الدراسات والتخطيط للتفضل بالاطلاع والتأشير ... مع التقدير.
- الصادرة.

Nada 4/1

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العراق - بغداد - الجادرية - ص. ب: ٦٤٠٧٤

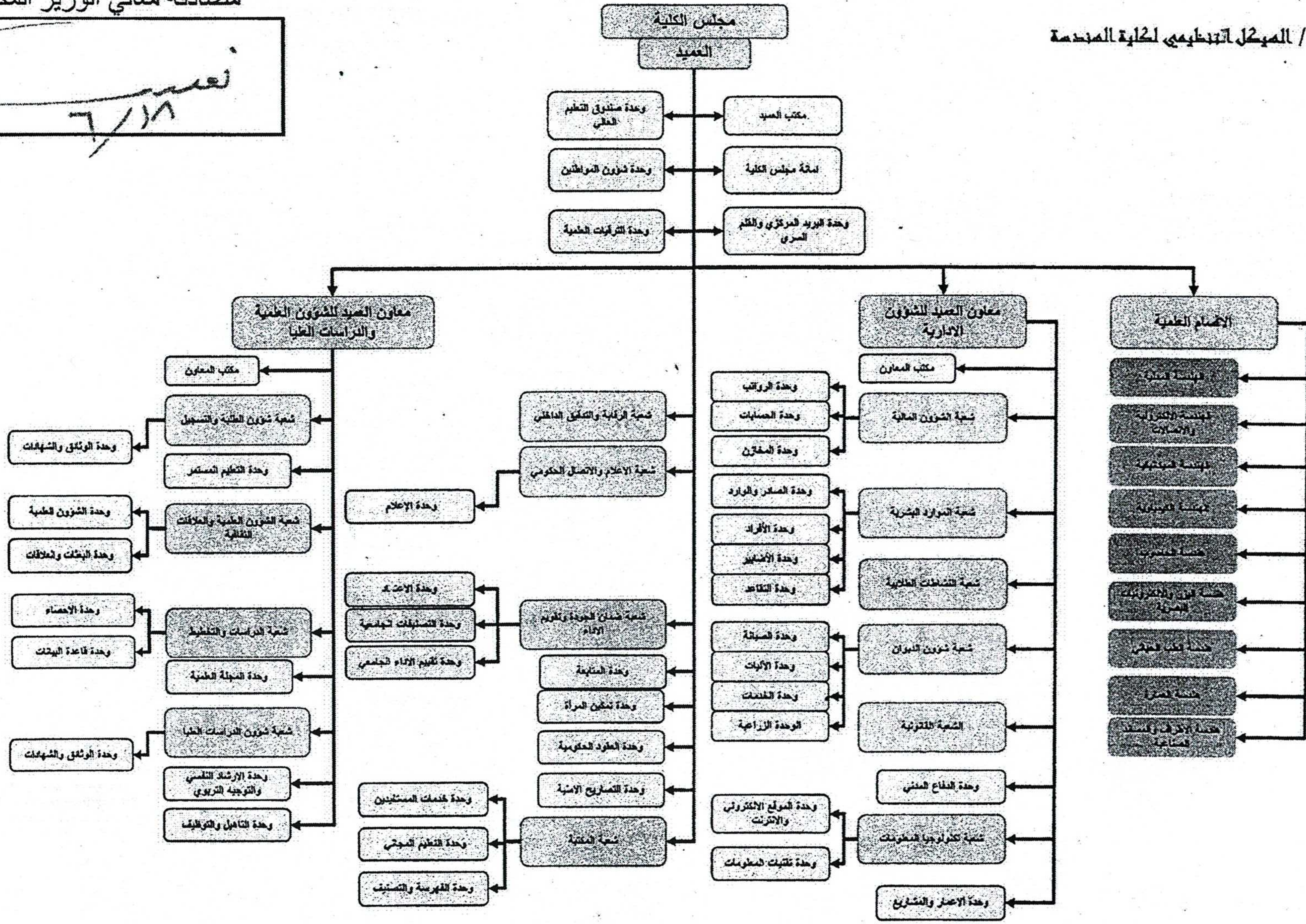
دليل (7-1) - 1 - هـ الهيكلية الادارية

دليل (1) / دليل (7)

مصادقة معالي الوزير المحترم

نعم 6/18

جامعة النهرين / الهيكل التنظيمي لكلية الهندسة



رئيس الجامعة

دليل (٧-١) - 2

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
الدائرة القانونية

العـدد :ق/ ٣٢١
التاريخ : ٣ / ٦ / ٢٠٢٠

دليل 2

(امر وزاري)

استناداً الى الصلاحيات المخولة لنا والحاقاً بالأمرين الوزاريين المرقمين (ق/٤/٤/٣٤٩٥) في ٢٠١٧/٨/٢٩ و (ق/٤/٤/٥٧٦٤) في ٢٠١٨/١٢/٩ تقرر :-

- تخويل الصلاحيات المدرجة ادناه وكما يلي :-

صلاحيات هيأة الرأي

١- دراسة واقرار مشروع موازنة الوزارة والتعديلات اللاحقة عليه قبل ارساله الى الجهة المختصة .
٢- دراسة واقرار مشروع خطة التنمية للوزارة والتعديلات اللاحقة عليه قبل ارساله الى الجهة المختصة.
٣- دراسة واقرار مشروعات القوانين والانظمة التي تقترحها الوزارة قبل رفعها الى مجلس الوزراء او الجهة المختصة .
٤- دراسة الانشطة والمشاريع والبرامج الرئيسة في الوزارة ومتابعة تنفيذها .
٥- التنسيق بين اجهزة الوزارة بما يحقق التكامل والتعامل الافضل بينها .
٦- دراسة المقترحات والخطط المتعلقة بتحسين الاداء وتطوير الانتاج وفق الطاقات التصميمية المتاحة وتقليص الهدر .
٧- الموافقة على تشكيل لجان دائمة او مؤقتة ذات علاقة بنشاط الوزارة للقيام بالمهام الموكلة اليها .
٨- الاشراف والمراقبة على طريقة وصحة تطبيق التشريعات والتعليمات الخاصة بالمكافئات والمخصصات ذات العلاقة بتحسين الاداء وتطوير الانتاج .
٩- النظر في المظالم التي تقع على منتسبي الوزارة ولها الحق في تشكيل لجنة او اكثر للتحقيق فيها .
١٠- مراقبة مدى قانونية القرارات والاجراءات المتخذة في الوزارة ولها حق وقف العمل بها اذا كانت مخالفة للقوانين والانظمة والتعليمات لحين البت في المخالفة وفق القانون .
١١- للوزارة ان تقترح على مجلس الوزراء مهام اخرى للهيئة ذات طبيعة الزامية او استشارية وتعد ضمن مهام الهيئة بعد موافقة مجلس الوزراء عليها .
١٢ لرئيس مجلس الوزراء ان يحيل على الهيئة ما يراه من القضايا او ان يكفلها بما يقرره من المهام .

الصلاحيات الحصرية للسيد وزير التعليم العالي والبحث العلمي

١- المصادقة على لجان الائتلاف المركزية وفق القانون والتعليمات.
٢- التوصية بالإدراج في القائمة السوداء استناداً الى احكام المادة ١٥/ اولاً من تعليمات تصنيف المقاولين والمقاولات والادراج في القائمة السوداء رقم ١ لسنة ٢٠١٥ .
٣- المصادقة على توصيات اللجنة المركزية للمفصولين السياسيين استناداً للمادة (السابعة/ اولاً) من القانون رقم ٢٤ لسنة ٢٠٠٥ المعدل .
٤- المصادقة على محاضر (لجنة الشطب المركزية) وفقا للتشريعات النافذة .
٥- ترشيح اسماء وكلاء الوزير ورؤساء الجامعات والهيئات ورئيس جهاز الاشراف والمدراء العامين الى مجلس الوزراء.
٦- الموافقة على تكليف معاوني المدراء العامين ومدراء الاقسام في مركز الوزارة.

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جمهورية العراق
وزارة التعليم العالي والبحث العلمي
الدائرة القانونية

العـدد :ق/
التاريخ : / / ٢٠٢٠

٧- عزل الموظف من الوظيفة .
٨- الموافقة على الغاء العقوبة استناداً لنص المادة ١٣ من قانون انضباط موظفي الدولة والقطاع العام للعقوبات الصادرة بأوامر وزارية .
٩- المعاقبة بأشد من عقوبة التوبيخ .
١٠- فرض عقوبة (لفت النظر، انذار، قطع راتب) على المدراء العامين فما فوق والاقتراح على مجلس الوزراء بفرض العقوبات الاشد .
١١- اصدار قرار تضمين الموظف والبت بموضوع التظلم بهذا القرار.
١٢- المصادقة على توصيات اللجان المشكلة وفق القانون رقم ٢٠ لسنة ٢٠٠٩ المعدل .
١٣- نقل موظفي الدوائر الثقافية والمستخدمين المحليين العاملين فيها.
١٤- التوصية بتأسيس جامعات او كليات او معاهد اهلية (عراقية او اجنبية) او فتح فروع لجامعات اجنبية رصينة.
١٥- الموافقة على تعيين رؤساء الجامعات وعمداء الكليات غير المرتبطة بجامعة والمعاهد الاهلية .
١٦- غلق القسم او الفرع العلمي في الجامعة او الكلية الاهلية .
١٧- التوصية الى مجلس الوزراء بإلغاء اجازة الجامعة او الكلية الاهلية.
١٨- حرمان عضو الهيئة التدريسية من التدريس في الجامعة او الكلية الاهلية لمدة مؤقتة او نهائية.
١٩- تسمية رئيس مجلس التعليم العالي الاهلي .
٢٠- الموافقة على التفرغ العلمي وفق قانون الخدمة الجامعية .
٢١- الموافقة على توصيات مجلس الجامعة على منح مخصصات الموقع الجغرافي .
٢٢- الرجوع الى الصلاحيات الممنوحة للوزير المختص بموجب قانون الموازنة العامة الاتحادية و تعليمات تنفيذ الموازنة العامة الاتحادية وتعليمات تنفيذ العقود الحكومية وضوابطها النافذة.
٢٣- تجديد تشغيل الاشخاص الذين يعملون بصفة اجراء يوميين .
٢٤- للوزير لأسباب مشروعة يقتنع بها احتساب سنة عـدم رسوب للطالب الراسب سنتـين متتاليتين.
٢٥- الموافقة على تأسيس مكاتب خدمات علمية واستشاريـة متخصصة او متعـددة لاختصاصات والغاءها ودمجها .
٢٦- اصدار التعليمات لتسهيل تنفيذ القوانين والانظمة .
٢٧- تحديد اجور السكن في الاقسام الداخلية بعد مراعاة النفقات المصروفة فعليا على انشائها وتأثيثها والخدمات المقدمة فيها.
٢٨- تحديد مبالغ الخدمات التي تقدمها الوزارة عن(تأجيل اداء الطالب امتحان كل مادة دراسية في الامتحانات الفصلية او النهائية، الاعتراض على نتيجة الامتحان لكل مادة دراسية، امتحان الطالب المكمل في الدور الثاني لكل مادة دراسية، نقل الطالب من كلية الى اخرى او من معهد الى اخر او عند تغيير اختياراته) بعد عرضها على هيئة الراي في الوزارة .
٢٩- الموافقة على ايفاد اصحاب الدرجات الخاصة خارج العراق.
٣٠- الموافقة على ايفاد منتسبي مركز الوزارة الى خارج العراق بعد تأييد توفر التخصيص المالي.
٣١- الموافقة على منح الاجازات الدراسية داخل العراق وخارجه لمنتسبي مركز الوزارة.
٣٢- الموافقة على منح البعثات والزمالات .
٣٣- اهداء السلع والخدمات وفقا لقانون الموازنة العامة الاتحادية وتعليمات تنفيذه.
٣٤- اجراء المناقلات بين اعتمادات الفصول وفقا لما يقرره قانون الموازنة العامة الاتحادية وتعليمات تنفيذه .

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-٣٥ تشكيل اللجان للأشراف ومتابعة تأهيل المختبرات في الجامعات والكليات والمعاهد الاهلية ومدى مطابقتها لبنود المواصفات الدولية الخاصة بذلك.
-٣٦ المصادقة على محاضر اجتماع مجالس الجامعات الاهلية والكليات غير المرتبطة بجامعة .
-٣٧ بالمصادقة على محاضر اجتماع مجلس التعليم العالي الاهلي.

صلاحيات السادة وكلاء السيد وزير التعليم العالي

اولاً :- الصلاحيات العامة للسادة الوكلاء:

١- تمثيل الوزارة في الاجتماعات والندوات والاتفاقيات ذات العلاقة بالتعاون العلمي داخل العراق بعد موافقة الوزير
٢- تشكيل اللجان التحقيقية والمصادقة على قراراتها اذا كانت تتضمن فرض عقوبة التوبيخ فما دون الموجهة لمنتسبي الدوائر التي يشرف عليها
٣- التوصية بإيفاد السادة المدراء العامين للدوائر التي يشرف عليها في داخل العراق لمدة عشرة ايام
٤- التوصية بإيفاد منتسبي مركز الوزارة خارج العراق بعد التأكد من توفر التخصيص المالي.
٥- منح الاجازات الاعتيادية لموظفي الدوائر التي يشرف عليها وفقاً لقانون الخدمة المدنية وقانون الخدمة الجامعية النافذين .
٦- الموافقة على ترشيح منتسبي الدوائر التي يشرف عليها للمشاركة في المؤتمرات والندوات والورش والحلقات الدراسية والدورات التدريبية والتطويرية والوفود داخل العراق.
٧- التوصية بالمصادقة على محاضر اللجان التحقيقية التي تتضمن توصياتها توجيه عقوبة اشد من التوبيخ
٨- التوصية بإلغاء العقوبة المفروضة على موظفي الدوائر التي يشرف عليها وفق القانون.
٩- منح كتب الشكر والتقدير لمنتسبي الدوائر التي يشرف عليها .
١٠- منح المكافآت المالية لمنتسبي الدوائر التي يشرف عليها بما لا يتجاوز (٢٥٠٠٠٠) الف دينار.
١١-تخويل بعض الصلاحيات للسادة المدراء العامين .

ثانياً:- السيد وكيل الوزارة للشؤون الادارية:

١. الاشراف على كل من الدائرة القانونية والدائرة الادارية والمالية ودائرة الاعمار والمشاريع ومتابعة اعمالها ورفع تقارير اداء المهام الخاصة بها.
٢. تنسيب الموظفين من والى خارج مركز الوزارة وتمديد التنسيب بعد استحصال موافقة الدوائر.
٣. نقل خدمات الموظفين من والى خارج الوزارة او الوزارات والجهات غير المرتبطة بوزارة بعد استحصال موافقة الجامعات والدوائر والتشكيلات.

٤. التوصية بتكليف موظفي الخدمة الجامعية في مركز الوزارة للعمل في العطلة الصيفية بعد تأييد دوائرهم الحاجة الى خدماتهم وتعويضهم عنها في حالة عدم منحهم اياها.
٥. تشكيل اللجان التحقيقية وفقاً لقانون انضباط موظفي الدولة والقطاع العام رقم ١٤لسنة ١٩٩١ المعدل.
٦. تثبيت موظفي مركز الوزارة على الملاك الدائم بعد انتهاء مدة التجربة المحددة قانوناً وحسب استمارة التقييم.
٧. إحالة منتسبي مركز الوزارة من الموظفين والتدريسيين على التقاعد وفقاً لقانون التقاعد الموحد رقم ٩ لسنة ٢٠١٤ المعدل بالقانون رقم ٢٦ لسنة ٢٠١٩ وقانون الخدمة الجامعية رقم ٢٣ لسنة ٢٠٠٨ المعدل.
٨. الموافقة على الصرف من تخصيصات الموازنة على وفق البنود المقررة في قانون الموازنة العامة الاتحادية وتعليمات تنفيذها .
٩. الموافقة على صرف نفقات الايفادات والاعمال الاضافية بحدود المبالغ المحددة بموجب التشريعات النافذة
١٠. منح الاجازة من دون راتب لمدة سنتين استناداً لأحكام القرار ٤١٨ لمنتسبي مركز الوزارة .
١١. منح اجازة المصاحبة الزوجية لموظفي مركز الوزارة وفق القانون.
١٢. منح التفرغ الجزئي لموظفي الخدمة الجامعية العاملين في مركز الوزارة.
١٣. المصادقة على تقارير ايفاد منتسبي مركز الوزارة دون درجة مدير عام.
١٤. المصادقة على محاضر(الاعمال الاضافية ، لجنة الترفيع واضافة الخدمة وتغيير العناوين الوظيفية وفقاً للتشريعات النافذة.
١٥. تكليف منتسبي مركز الوزارة للعمل الاضافي خارج اوقات الدوام الرسمي وايام العطل على وفق التشريعات النافذة بعد موافقة الدوائر المختصة وبيان الاسباب الضرورية لهذا التكليف .
١٦. التوصية بالموافقة على ترشيح منتسبي دوائر مركز الوزارة للمشاركة في المؤتمرات والندوات والورش والحلقات الدراسية والدورات التدريبية والتطويرية والوفود خارج العراق.
١٧. المصادقة على قرارات اللجان المشكلة في مركز الوزارة الخاصة بتثمين وايجار وبيع اموال الدولة .
١٨. الموافقة على ايفاد منتسبي مركز الوزارة داخل العراق.
١٩. اصدار الاوامر الوزارية عن الوزير بعد استحصال موافقته في كل ما يتعلق بتنفيذ المهام الخاصة بعمل الدوائر التي يشرف عليها .
٢٠. الموافقة على اعارة خدمات التدريسيين من مركز الوزارة الى الجامعات والكليات والمعاهد الاهلية داخل العراق وخارجه بعد موافقة دوائرهم .
٢١. استثناء موظف الخدمة الجامعية في مركز الوزارة من التفرغ بناءً على طلبه.
٢٢. منح مخصصات الخطورة المهنية لمنتسبي مركز الوزارة وفق القانون رقم ٢٢ لسنة ٢٠٠٨ .
٢٣. تخويل بعض صلاحياته الى السادة المدراء العامين للدوائر التي يشرف عليها .

ثالثاً:- السيد وكيل الوزارة لشؤون البحث العلمي:

١. الاشراف على الدوائر المرتبطة به ورفع تقارير اداء المهام الخاصة بها.
٢. الاشراف على المراكز والوحدات البحثية والوقوف على تنفيذ سياسات البحث العلمي في العراق.
٣. التوصية بالتعاقد مع الباحثين العراقيين وغير العراقيين المرشحين من الجامعات ومراكز البحث العلمي في حالة وجود حاجة ماسة لاختصاصاتهم في مراكز البحوث العراقية وفق القانون.

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
الدائرة القانونية

العـــدد :ق/
التاريخ : / / ٢٠٢٠

Republic of Iraq
Ministry of Higher Education and Scientific Research

٤. التوصية بتشكيل اللجان التحضيرية الخاصة بالمؤتمرات والندوات العلمية والمصادقة على خطتها.
٥. تشكيل اللجان الدائمة والمؤقتة في الوزارة المختصة بالبحث العلمي.
٦. التوصية بقبول الموظفين في مركز الوزارة في الدراسة على وفق قناة المتميزين في الدراسة الاولية.
٧. اعداد سياسة البحث العلمي في المراكز والوحدات العلمية بالتعاون والتنسيق مع رؤساء الجامعات.
٨. اصدار الاحصاءات الرسمية الخاصة بالوزارة.
٩. التوصية بإلغاء الترشيح او الموافقة على الانسحاب من البعثة البحثية للطالب او المشرف وكذلك انسحاب التدريسيين او الغاء ترشيحهم لبرنامج تطوير الملاكات التدريسية.
١٠. التوصية بترشيح طالب البعثة البحثية والمشرف وكذلك تمديد مدة البعثة البحثية على النفقة الخاصة بتوصية من الجامعات.
١١. التوصية بنقل دراسة طلبة الدراسات العليا من خارج العراق الى الجامعات العراقية وفقاً للضوابط.
١٢. قبول ذوي الشهداء في الدراسة الاولية وفق القانون.
١٣. استحداث مشاريع بحثية او ريادية جديدة.
١٤. التوصية باستحداث المجلات العلمية او تعليق عملها وفق الضوابط.
١٥. منح اللقب العلمي لمنتسبي وزارة التربية المشمولين بقانون الخدمة الجامعية رقم ٢٣ لسنة ٢٣المعدل.
١٦. التوصية بالموافقة على ايفاد طلبة الدراسات العليا والتدريسيين لمدة لا تزيد على ستة اشهر لأجراء البحوث.
١٧. الموافقة على تمديد مدة البعثات البحثية.
١٨. التوصية بالموافقة على التقويم الجامعي.
١٩. الموافقة على ضوابط التدريب الصيفي لطلبة الجامعات.
٢٠. الموافقة على شراء الكتب والمجلات والدوريات التي تحتاجها الوزارة ومراكز البحوث وطبع البحوث والكتب والتقارير التي تصدر عنها
٢١. الاشراف على المكتبة الافتراضية.
٢٢. المصادقة على تغيير جهة ترشيح القبول لطالب البعثة البحثية او المشرف.
٢٣. التوصية بتغيير النظام الدراسي في الكليات والمعاهد ضمن الضوابط المعتمدة في الوزارة.
٢٤. تشكيل اللجان للأشراف ومتابعة تأهيل المختبرات في الجامعات الحكومية ومدى مطابقتها لبنود المواصفات الدولية الخاصة بذلك.
٢٥. التوصية بإيقاف او تعليق القبول في الكليات والاقسام العلمية في الدراسة المسائية التي لا تتوفر فيها الشروط العلمية والمتطلبات الضرورية.
٢٦. التوصية بإيقاف او تعليق القبول في الاقسام العلمية التي تخل بشروط الاستحداث.
٢٧. الغاء نقل الطلبة بناءً على طلبهم بعد مصادقة معالي الوزير.
٢٨. اقرار خطة القبول للدراسة الاولية في الجامعات وفق الضوابط المعتمدة من الوزارة بعد مصادقة معالي الوزير.
٢٩. اقرار خطة القبول في الدراسات العليا بعد مصادقة معالي الوزير.
٣٠. اقرار خطة النفقة الخاصة في الدراسات العليا بعد مصادقة معالي الوزير.
٣١. اقرار خطة توسيع القبول في الدراسات العليا.
٣٢. الموافقة على إقرار الاستضافة بين الجامعات.
٣٣. المصادقة على محاضر تسويق النتاجات العلمية.
٣٤. المصادقة على محاضر هيئة البحث العلمي .

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٣٥. المصادقة على محاضر لجان التنسيق بين الكليات المختلفة ومؤسسات الدولة الاخرى.
٣٦. اقرار المصادقة على قرار الاستحداث والاستمرار والتعليق في الدراسات العليا بتوصية من دائرة البحث والتطوير.
٣٧. المصادقة على محاضر اللجان العلمية الخاصة بدائرة البحث والتطوير ودائرة الدراسات والتخطيط والمتابعة.
٣٨. المصادقة على توصيات لجان العمداء.
٣٩. المصادقة على المناقلة بين فقرات برنامج تطوير الملاكات التدريسية والبعثات البحثية.
٤٠. المصادقة على محاضر الهيئة المشرفة على الدراسات المسائية.
٤١. المصادقة على الية تنفيذ المشاريع البحثية الريادية وتعديلها.
٤٢. التوصية بالمصادقة على محاضر اللجنة المركزية للإجازات الدراسية لمنتسبي الوزارة وتشكيلاتها داخل العراق.
٤٣. التوصية بترشيح طلبة البعثات البحثية استثناءً من الضوابط.
٤٤. التوصية باستحداث الكليات والاقسام العلمية .
٤٥. تشكيل اللجان الوزارية الخاصة بعمل الدوائر التي يشرف عليها او هيئة البحث العلمي وكذلك اللجان (العلمية المتنوعة) التي لها علاقة بالتقييم وابداء الآراء وتقييم الدراسات والزيارات الميدانية.
٤٦. توقيع الاوامر الوزارية التي تتعلق بتشكيل واعادة تشكيل المجالس التنسيقية التخصصية بعد مصادقة الوزير.
٤٧. اصدار الاوامر الوزارية التي تتعلق بعملية تسويق النتاجات العلمية(مثل لجان تقييم النتاجات العلمية لبيان مدى قابلية التسويق ، لجان متابعة الاستفادة من المنتج المسوق وغيرها) وكذلك التي تتعلق بتشكيل فريق عمل حاضنات الاعمال المتنوعة والمتخصصة.
٤٨. توقيع الاوامر الوزارية بتكليف الفريق البحثي بإنجاز البحوث المقترحة من التدريسيين بعد مصادقة وكيل الوزارة لشؤون البحث العلمي على محاضر اللجان.
٤٩. حل الجمعية العلمية .
٥٠. دمج الجمعيات العلمية.
٥١. تخويل بعض صلاحياته الى السادة المدراء العامين للدوائر التي يشرف عليها .

رابعاً:- السيد وكيل الوزارة للشؤون العلمية والعلاقات الدولية:

١. الاشراف على دائرة البعثات والعلاقات الثقافية ورفع تقارير اداء المهام الخاصة بها.
٢. التوصية بالموافقة على انضمام طلبة البعثة والزمالة بالدراسة وتوقيع قرار الضم.
٣. التوصية على تغيير اختصاص الطلبة الدارسين في الخارج.
٤. الموافقة على الغاء الترشيح للزمالات.
٥. التوصية بالموافقة على تغيير بلد الدراسة للطالب الدارس خارج العراق.
٦. التوصية بالموافقة على ايفاد المدير العام للدائرة التي يشرف عليها الى داخل العراق لمدة لاتزيد عن عشرة ايام.
٧. الموافقة على اعادة فتح الملفات الدراسية لأغراض تقييم الشهادات الدراسية.

٨. التوصية بالمصادقة على محاضر اللجنة المركزية للإجازات الدراسية لمنتسبي الوزارة وتشكيلاتها خارج العراق.
٩. التوصية بالمصادقة على محاضر لجنة انتقاء طلبة البعثات والزمالات.
١٠. التوصية بالموافقة على ترشيح العاملين في الدوائر الثقافية وفقاً لنظام الدوائر الثقافية.
١١. التوصية بالموافقة على ايفاد منتسبي مركز الوزارة خارج العراق بعد التأكد من وجود التخصيص المالي
١٢. تخويل بعض صلاحياته الى السادة المدراء العامين للدوائر التي يشرف عليها .

صلاحيات السيد رئيس جهاز الاشراف والتقويم العلمي

١. منح المنتسبين الاجازات الاعتيادية وفقاً لقانون الخدمة المدنية رقم ٢٤ لسنة ١٩٦٠ المعدل وقانون الخدمة الجامعية رقم ٢٣ لسنة ٢٠٠٨ المعدل وبما لا تتجاوز(٣٠) يوماً.
٢. اقتراح الخطة السنوية للدائرة.
٣. احالة منتسبي الدائرة الى اللجان الطبية وتوقيع الاستمارات المعدة لهذا الغرض او من يخوله.
٤. تشكيل اللجان التحقيقية والمصادقة على قراراتها اذا كانت تتضمن فرض عقوبة دون عقوبة التوبيخ الموجهة لمنتسبي دائرته.
٥. تشكيل اللجان الدائمة والمؤقتة التي لها صلة بتنفيذ مهام دائرته وتسمية اعضائها.
٦. ترشيح معاوني الجهاز ومدراء الاقسام وتكليف مسؤولي الشعب وتوزيع المهام والمسؤوليات عليهم بما يؤمّن انسيابية العمل وتطويره .
٧. ترشيح منتسبي الدائرة للإجازات الدراسية والاعارات داخل العراق وخارجه.
٨. الموافقة على ايفاد اللجان الوزارية داخل العراق ، لتنفيذ المهام التي تتعلق بنشاط الدائرة والمصادقة على قوائم اجور الايفاد.
٩. الموافقة على اشتراك منتسبي دائرته في المؤتمرات والندوات والحلقات الدراسية والورش والوفود والدورات التدريبية والتطويرية داخل العراق.
١٠. الموافقة على نقل وتنسيب منتسبي دائرته ما بين الاقسام والشعب بما يؤمن انسيابية العمل وتطويره ورفع كفاءة الاداء.
١١. ترشيح منتسبي الدائرة للاشتراك في المؤتمرات والندوات والورش والحلقات الدراسية والوفود والدورات التدريبية والتطويرية خارج العراق.
١٢. التوصية بالموافقة على احالة منتسبي دائرته الى التقاعد وقبول الاستقالة.
١٣. التوصية بالموافقة على الايفادات خارج العراق بعد التأكد من وجود التخصيص المالي.
١٤. التوصية بالمصادقة على محاضر اللجان التحقيقية التي تتضمن توصياتها توجيه عقوبة اشد من التوبيخ.
١٥. التوصية بإلغاء العقوبة المفروضة على موظفي الدوائر التي يشرف عليها وفق القانون.
١٦. الموافقة على تثبيت منتسبي دائرته الذين هم تحت التجربة.
١٧. الموافقة على منح الاستحقاقات الوظيفية (العلاوة والترفيع)لمنتسبي دائرته وفق التشريعات النافذة.
١٨. التوصية بتشكيل اللجان الدائمة والمؤقتة بما يؤمن تسهيل عمل دائرته وتسمية اعضاءها.
١٩. التوصية بإلغاء العقوبة المفروضة على موظفي الدوائر التي يشرف عليها وفق القانون.

٢٠. تسمية المقومين العلميين لاطاريح الدكتوراه ورسائل الماجستير بعد استلامها من الجامعات على وفق الشروط الخاصة بها واتخاذ الاجراءات اللازمة لتحقيق الرصانة العلمية .
٢١. الاعتراض على لجان المناقشة المشكلة من الجامعات والكليات وفق التعليمات النافذة .
٢٢. متابعة سير العملية الامتحانية في المؤسسات التعليمية.
٢٣. اقرار المناهج الدراسية للدراسات الاولية والعليا المقترحة من الجامعات.
٢٤. تشكيل اللجان التفتيشية والتدقيقية الخاصة بالأقسام الداخلية في الجامعات.
٢٥. التوصية بالمصادقة على محاضر اجتماع مدراء الاقسام الداخلية في الجامعات كافة.
٢٦. التوصية بتشكيل اللجان التدقيقية والتفتيشية الخاصة بالتدريسيين والموظفين والطلبة في الجامعات الرسمية والاهلية والمصادقة على قراراتها.
٢٧. الاشراف التربوي والعلمي على الجامعات والكليات والمعاهد الحكومية والاهلية.
٢٨. الاشراف العام على الانشطة الطلابية الصفية واللاصفية في الجامعات والكليات والمعاهد كافة.
٢٩. الاشراف العام على القضايا الطلابية كافة ومتابعة سلوكهم وانضباطهم.
٣٠. الاشراف على الندوات والمهرجانات والفعاليات الفنية للجامعات كافة.
٣١. الاشراف على شؤون الاقسام الداخلية والطلبة الساكنين فيها وتوفير مستلزمات اسكانهم ورفع التقارير عن واقعها.
٣٢. الاشراف والمتابعة على الاقسام الداخلية في الجامعات بما يؤمن انسيابية العمل وتطويره .
٣٣. التوصية بالمصادقة على توصيات محاضر الزيارات التفتيشية بالاقسام الداخلية .
٣٤. الاشراف العام على عمل النشاطات الطلابية في الجامعات الحكومية والاهلية .
٣٥. اعداد وتنفيذ المنهاج السنوي الوزاري للنشاطات الطلابية فضلا عن النشاطات المضافة خارج المنهاج المعد والتي تقع ضمن مهام عمل النشاطات الطلابية .
٣٦. الاشراف على عقود التأهيل للمختبر الجيد.
٣٧. الاشراف على تقارير قسم اعتماد المختبرات بخصوص الاستحداث.
٣٨. اعداد وتحديث استمارات تقييم الاداء لمنتسبي وزارة التعليم العالي والبحث العلمي ومتابعة تنفيذها .
٣٩. الاشراف على الامتحان التنافسي ومتابعة تنفيذه .
٤٠. الاشراف والمتابعة والتنسيق مع اقسام وشعب ضمان الجودة والأداء الجامعي في الجامعات والكليات الحكومية والأهلية .
٤١. متابعة برامج الاعتماد المؤسسي والبرامج في الجامعات والكليات الحكومية والأهلية .
٤٢. الاشراف والمتابعة على عمل مجالس تحسين الجودة لكافة التخصصات العلمية والانسانية للجامعات والكليات الحكومية والأهلية .
٤٣. الموافقة على تشكيل اللجان الخاصة لضمان الجودة والاعتماد الاكاديمي لمتابعة تنفيذ تقارير التقييم الذاتي المؤسسي لكافة الجامعات والكليات الحكومية والأهلية ولكافة التخصصات .
٤٤. متابعة عمل المكاتب الاستشارية في الجامعات الرسمية وفقاً للتعليمات والقوانين النافذة لعملها .
٤٥. التوصية بتشكيل اللجان التدقيقية والتحقيقية والخاصة بعمل المكاتب الاستشارية في الجامعات الرسمية .
٤٦. منح كتب الشكر والتقدير لمنتسبي جهاز الاشراف والتقويم العلمي .
٤٧. لرئيس الجهاز تخويل بعض صلاحياته لمعاونيه ومدراء الدوائر ومدراء الاقسام التابعة له .

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صلاحيات السادة المدراء العامين في مركز الوزارة

اولاً:- الصلاحيات العامة للسادة مدراء الدوائر العامين

١- منح المنتسبين الاجازات الاعتيادية وفقاً لقانون الخدمة المدنية رقم ٢٤ لسنة ١٩٦٠ المعدل وقانون الخدمة الجامعية رقم ٢٣ لسنة ٢٠٠٨ المعدل وبما لا تتجاوز(٣٠) يوماً.
٢- اقتراح الخطة السنوية للدائرة.
٣- احالة منتسبي الدائرة الى اللجان الطبية وتوقيع الاستمارات المعدة لهذا الغرض او من يخوله.
٤- تشكيل اللجان التحقيقية والمصادقة على قراراتها اذا كانت تتضمن فرض عقوبة دون عقوبة التوبيخ الموجهة لمنتسبي دائرته.
٥- ترشيح معاونين له ومدراء الاقسام وتكليف مسؤولي الشعب وتوزيع المهام والمسؤوليات عليهم بما يؤمّن انسيابية العمل وتطويره .
٦- ترشيح منتسبي الدائرة للإجازات الدراسية والاعارات داخل العراق وخارجه.
٧- التوصية بالموافقة على ايفاد اللجان الوزارية داخل العراق ، لتنفيذ المهام التي تتعلق بنشاط الدائرة والمصادقة على قوائم اجور الايفاد.
٨- الموافقة على اشتراك منتسبي دائرته في المؤتمرات والندوات والحلقات الدراسية والورش والوفود والدورات التدريبية والتطويرية داخل العراق.
٩- الموافقة على نقل وتنسيب منتسبي دائرته ما بين الاقسام والشعب بما يؤمن انسيابية العمل وتطويره ورفع كفاءة الاداء.
١٠-ترشيح منتسبي الدائرة للاشتراك في المؤتمرات والندوات والورش والحلقات الدراسية والوفود والدورات التدريبية والتطويرية خارج العراق.
١١-التوصية بالموافقة على احالة منتسبي دائرته الى التقاعد وقبول الاستقالة.
١٢-التوصية بالموافقة على الايفادات خارج العراق بعد التأكد من وجود التخصيص المالي.
١٣-التوصية بالمصادقة على محاضر اللجان التحقيقية التي تتضمن توصياتها توجيه عقوبة اشد من التوبيخ.
١٤-التوصية بإلغاء العقوبة المفروضة على موظفي الدوائر التي يشرف عليها وفق القانون.
١٥-الموافقة على تثبيت منتسبي دائرته الذين هم تحت التجربة.
١٦-الموافقة على منح الاستحقاقات الوظيفية (العلاوة والترفيع) لمنتسبي دائرته وفق التشريعات النافذة .
١٧-الموافقة على نقل وتنسيب منتسبي دائرته ما بين الاقسام والشعب بما يؤمن انسيابية العمل وتطويره ورفع كفاءة الاداء.
١٨-التوصية بتشكيل اللجان الدائمة والمؤقتة بما يؤمن تسهيل عمل دائرته وتسمية اعضاءها
١٩-منح كتب الشكر والتقدير لمنتسبي دائرته عن الاعمال المتميزة .
٢٠-للمدير العام تخويل بعض صلاحياته للمعاونين ومدراء الاقسام .

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ثانياً:- صلاحيات السيد مدير عام الدائرة القانونية:

١. اصدار الاوامر الوزارية والادارية بتشكيل اللجان التحقيقية وفقاً لقانون انضباط موظفي الدولة بعد استحصال الموافقات.
٢. الموافقة على استبدال واضافة الاعضاء في اللجان التحقيقية والتدقيقية .
٣. تسمية الممثلين القانونيين للحضور امام المحاكم المدنية والجزائية ومحكمة قضاء الموظفين ومحكمة القضاء الاداري وهيئة النزاهة ومجلس شورى الدولة.
٤. اصدار الاوامر الوزارية عن الوزير بعد استحصال موافقة معالي الوزير في كل ما يتعلق بعمل الدائرة.
٥. تدقيق توصيات اللجان التحقيقية المشكلة في مركز الوزارة من الناحية القانونية قبل المصادقة عليها .
٦. مصادقة العقود والكفالات الدراسية وفقاً لقانون كتاب العدول .
٧. تدقيق التظلمات الواردة على توصيات اللجان التحقيقية الوزارية .
٨. ابداء المشورة من الناحية القانونية في كل مايخص عمل تشكيلات الوزارة .

ثالثاً:- السيد مدير عام الدائرة الادارية والمالية :-

١. التوقيع على سندات الصرف وسندات القيد بعد اكمال الموافقات الاصولية على الصرف وحسب الصلاحيات .
٢. صرف مستحقات الرواتب والمخصصات لمنتسبي مركز الوزارة وحسب الاستحقاقات القانونية .
٣. صرف المواد المخزنية (القرطاسية ،الاجهزة والمواد والاثاث) .
٤. الموافقة على الصرف من تخصيصات الموازنة بما لا يتجاوز (١٠٠٠٠٠٠٠٠) مائة مليون دينار وضمن التخصيصات المالية لكل حالة مع مراعاة احكام التشريعات الخاصة بتنفيذ الموازنة العامة الاتحادية للدولة.
٥. الموافقة على تمويل الدوائر الثقافية في الخارج للصرف على رواتب واجور ومصاريف ومستحقات الطلبة والموظفين العاملين فيها حسب حاجة تلك الدوائر .
٦. التوصية بصرف اجور الاعمال الاضافية للموظفين المكلفين بالعمل بعد اوقات الدوام الرسمي.
٧. تحويل المبالغ الخاصة لمستحقات الطلبة الى السفارات العراقية في الخارج التي لا توجد فيها دوائر ثقافية بعد الحصول على الموافقات الاصولية على التحاقهم بالدراسة وتدقيقها من قبل قسم الرقابة والتدقيق الداخلي.
٨. الاشراف والتنسيق ومتابعة تشكيلات الوزارة في اعداد الموازنة السنوية .
٩. مفاتحة وزارة المالية بشأن مناقلات التخصيص المالي للدرجات الوظيفية .
١٠. اقرار الحسابات الختامية .
١١. منح الموظفات من منتسبي مركز الوزارة إجازة الوضع والامومة وإجازة العدة وفق التشريعات النافذة.
١٢. منح مخصصات الالقاب العلمية و مخصصات الخدمة الجامعية والشهادة لمنتسبي مركز الوزارة وفقاً للتشريعات النافذة.

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١٣. اصدار الاوامر الوزارية بالنقل والتنسيب من والى خارج مركز الوزارة للتشكيلات او الوزارات والجهات غير المرتبطة بوزارة بعد استحصال الموافقات الاصولية
١٤. مفاتحة وزارة المالية بشأن اجراء الحذف والاستحداث للدرجات الوظيفية وفقا للتشريعات النافذة.
١٥. اصدار الاوامر الوزارية المتعلقة بشؤون موظفي مركز الوزارة وفق قوانين الخدمة النافذة بعد استحصال موافقات الدوائر المختصة ووفق الصلاحيات .

رابعاً:- السيد مدير عام دائرة الاعمار والمشاريع:

١. اعداد دراسة الجدوى الفنية والهندسية لمشاريع مركز الوزارة.
٢. تقديم الاستشارات الفنية والهندسية فيما يتعلق بمشاريع الاعمار في مركز الوزارة وتشكيلاتها.
٣. المصادقة على اوامر الغيار والمواد الاضافية للمشاريع بحسب الشروط العامة للمقاولات لمركز الوزارة .
٤. تقديم التوصية الى الهيئة الاستراتيجية لإعادة الاعمار في وزارة التخطيط والتعاون الأنمائي بشأن المنح المقدّمة للوزارة بعد التنسيق مع تشكيلاتها والجهات ذات العلاقة داخلها واستحصال موافقة الوزارة عليها.
٥. الاشراف على تنفيذ الخطة الاستثمارية ومتابعة موازنتها والاشراف على حملات الاعمار الاخرى.
٦. توقيع كتب الاحالة للمشاريع الخاصة بمركز الوزارة او بتشكيلاتها في حالة قيام الوزارة بالأعلان عنها وتوقيع العقود التي تبرمها الوزارة بعد استحصال الموافقات الاصولية عليها.
٧. الموافقة على إطلاق مبالغ المواد المفحوصة والمطابقة للمواصفات.
٨. تمثيل الوزارة تجارياً امام الوزارات والدوائر الاخرى.
٩. ممارسة الصلاحيات التعاقدية الواردة في تعليمات تنفيذ الموازنة العامة الاتحادية او ايّة تعليمات تحل محلها فيما يخص مشاريع مركز الوزارة.
١٠. التوصية بايفاد اللجان الفنية وفرق المتابعة من منتسبي دائرته .
١١. الموافقة على تنفيذ اعمال الصيانة والتأهيل لمركز الوزارة وبمبلغ لا يتجاوز (١٠٠٠٠٠٠٠) عشرة ملايين دينار ومن تخصيصات الموازنة التشغيلية .

خامساً:- السيد مدير عام البعثات والعلاقات الثقافية:

١. التوصية بالموافقة على فتح وإعادة فتح الملف الدراسي المغلق لأغراض تقييم الشهادة.
٢. التوصية بالموافقة على التحاق عائلة الطالب الموفد للدراسة خارج العراق وفق التعليمات النافذة.
٣. الموافقة على غلق الملف الدراسي وتنفيذ العقد بحق الطالب المخالف وتأجيل التنفيذ في حالة حاجة الطالب الى مدة إضافية لانهاء متطلبات شهادته.
٤. التوصية بالموافقة على انضمام طلبة البعثة والزمالة الدراسية بعد حصول الموافقات على الترشيحات .
٥. الموافقة على فتح وغلق الملفات الدراسية للطلبة.
٦. التوصية بصرف المستحقات المالية للطالب الدارس في الخارج.
٧. التوصية بتقديم الدعم المالي للطالب الدارس في الخارج.

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Republic of Iraq
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٨. التوصية بالموافقة على تغيير تخصص الطالب وبلد الدراسة بعد الاستئناس برأي جهة الابتعاث.
٩. الموافقة على تمديد الدراسة لطلبة البعثة او الزمالة او الاجازة الدراسية او طلبة المساعدة المالية .
١٠. اصدار قرارات التقييم الاداري للشهادات والدرجات العلمية والمهنية العربية والاجنبية.
١١. الاشراف على الدوائر الثقافية في الخارج وسير العمل فيها والطلبة الدارسين خارج العراق
١٢. الموافقة على انفكاك ومباشرة الموظفين المعينين في الدوائر الثقافية.

سادساً : - السيد مدير عام دائرة البحث والتطوير :

١. المصادقة على محاضر هيئة البحث العلمي في حالة عدم تواجد السيد وكيل الوزارة لشؤون البحث العلمي(ايفاد، اجازة، او اية مهمة اخرى)
٢. تشكيل اللجان العلمية الدائمة والمؤقتة بما يؤمن تسهيل عمل دائرته وتسمية ممثلي الوزارة لعضوية هذه اللجان بأوامر ادارية .
٣. اقرار تمويل المشاريع البحثية المقترحة من قبل الاقسام العلمية في الجامعات والهيئات والمجالس والمراكز والوحدات البحثية ومركز الوزارة ضمن الموازنة الاستثمارية ومتابعة تنفيذها.
٤. توقيع العقود مع رؤساء الفرق البحثية لتنفيذ المشاريع البحثية المقترحة في الجامعات والهيئات والمراكز والوحدات البحثية كافة ضمن الموازنة الاستثمارية على ان لا يتجاوز مبلغ العقد الواحد(مليار دينار.)
٥. تشكيل اللجان الخاصة بإعادة فتح واستحداث الدراسات العليا والوحدات والمراكز البحثية.
٦. التوصية بغلق او تعليق الدراسات العليا في الاقسام العلمية.
٧. التوصية بمنح اللقب العلمي لمنتسبي وزارة التربية من حملة الشهادات العليا.
٨. المصادقة على قرارات لجنة السيطرة على تداول المواد الكيميائية والبيولوجية الخطرة والسامة ومتابعة تنفيذ القرارات.
٩. الاشراف على تأسيس الجمعيات العلمية ومتابعة نشاطها .
١٠. توقيع العقود الاستثمارية للنتاجات العلمية المسوقة بعد مصادقة الوزير على المحضر .
١١. اعداد ضوابط وشروط القبول في الدراسات العليا على وفق التشريعات النافذة ومتابعة تنفيذها.
١٢. ترويج معاملات الترقيات العلمية لمنتسبي مركز الوزارة.
١٣. الاشراف على تنفيذ تعليمات اصدار المجلات العلمية المعتمدة لأغراض الترقيات العلمية ومعايير تقييمها .
١٤. الاشراف على اعمال هيئة البحث العلمي والمراكز والوحدات البحثية في الجامعات.
١٥. التوصية بالمصادقة على خطة القبول في الدراسات العليا.
١٦. مفاتحة اصحاب المشاريع مباشرة بالنسبة للمشاريع المقدمة من قبل الجامعات او الوزارات الاخرى التي تحال من قبل هيئة الرأي دون الرجوع الى هيئة الرأي مرة اخرى .
١٧. التوصية بالمصادقة على خطة المؤتمرات والندوات.

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سابعاً:- السيد مدير عام دائرة الدراسات والتخطيط والمتابعة:

١. التوصية بترشيح منتسبي دائرته للاشتراك في المؤتمرات والندوات والورش والحلقات الدراسية والوفود والدورات التدريبية والتطويرية خارج العراق بعد التأكد من توفر التخصيص المالي .
٢. التوصية بتجديد عقد الموظف المعين بعقد موقت وانهائه.
٣. الاعلان عن نتائج القبول المركزي للدراسة الاولية.
٤. تشكيل اللجان الخاصة بـ(الكشف على متطلبات فتح واستحداث الدراسات الاولية(الفروع والاقسام والكليات) في الجامعة والهيئة ، وتدقيق توافر المستلزمات البشرية والمادية الملائمة لحالات الاستحداث للدراسات الاولية الصباحية والمسائية.)
٥. التوصية بتشكيل اللجان التحقيقية والتدقيقية الوزارية على الجامعات الحكومية والهيئات تتولى التحقيق بحالات (مخالفات الطلبة ، تزوير الوثائق و المستمسكات والكتب الرسمية ، عدم الالتزام بتوفير مستلزمات الاستحداث ، متابعة خطط القبول ، الحالات الاخرى التي هي من ضمن مهام الدائرة)
٦. تقييم وتطوير الهياكل التنظيمية للجامعات والمعاهد.
٧. التوصية بزيادة عدد مقاعد خطة قبول طلبة الدراسة الاعدادية ، لاستيعاب الزيادة في مخرجات وزارة التربية.
٨. التوصية باستحداث دراسات مسائية في الكليات والمعاهد.
٩. الاشراف فنياً على العمليات الاحصائية التي تعدها اقسام الدائرة وتقديم الاستشارات الفنية بشأنها
١٠. التنسيق مع الوزارات والجهات غير المرتبطة بوزارة والجهات الاخرى ومجالس المحافظات بما يمكنها من تنفيذ واجباتها وتحقيق برامجها وسياساتها.
١١. تأشير الجوانب الايجابية والسلبية لإداء الجامعات والمعاهد للمهمات المتعلقة بمجال عمل الدائرة خدمة للعملية التخطيطية.

صلاحيات مدير دائرة التعليم الجامعي الاهلي

١- ترشيح معاون ومدراء الاقسام ومسؤولي الشعب بما يؤمن انسيابية عمل الدائرة وتطويرها .
٢- توزيع المهام والمسؤوليات على اقسام الدائرة بما يضمن انسيابية العمل فيه .
٣- ترؤس مجلس ادارة الدائرة والاشراف على تنفيذ قرارات ووضع الخطة السنوية لعمل الدائرة .
٤- التوصية بتشكيل اللجان الدائمية و المؤقته فيما يخص عمل الدائرة .
٥- التوصية بمنح كتب شكر وتقدير لمنتسبي الدائرة .
٦- التوصية باحالة منتسبي الدائرة الى لجنة تحقيقية وفقا لاحكام قانون انضباط موظفي الدولة والقطاع العام رقم ١٤ لسنة ١٩٩١ .
٧- منح موظفي الدائرة اجازة اعتيادية بما لا يتجاوز (٢٠) عشرون يوم .
٨- الموافقة على اشتراك منتسبي الدائرة بالمؤتمرات والندوات والدورات التدريبية والتطويرية داخل العراق .
٩- التوصية بالنقل او التنسيب لمنتسبي الدائرة .

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١٠-متابعة عمل الاشراف العلمي والاداري للجامعات والكليات الاهلية والمعاهد الاهلية .
١١-ترؤس مجلس التعليم الاهلي في حال غياب الرئيس والاشراف على تنفيذ توصياته .
١٢-التوصية بالمصادقة على محاضر اجتماع مجالس الجامعات والكليات والمعاهد الاهلية المستوفية للشروط القانونية .
١٣-التوصية بتعيين رؤساء الجامعات والكليات والمساعدين ورؤساء الاقسام للجامعات والكليات والمعاهد الاهلية بعد استيفاؤهم للشروط المطلوبة قانوناً.
١٤-تقويم مستوى اداء الجامعات والكليات الاهلية والمعاهد سنوياً .
١٥-تطبيق احكام قانون التعليم الاهلي رقم ٢٥ لسنة ٢٠١٦ واي قانون يحل محله والتعليمات الصادرة بموجبه بما يخص عمل الدائرة .
١٦-لمدير الدائرة تخويل بعض صلاحياته لمعاونه ومدراء الاقسام .
١٧-للوزير تخويله بعض الصلاحيات الاضافية .

صلاحيات مدير دائرة الاعلام ودائرة القناة الفضائية الجامعية

١- ترشيح مدراء الاقسام ومسؤولي الشعب بما يؤمن انسيابية عمل الدائرة وتطويرها .
٢- توزيع المهام والمسؤوليات على اقسام الدائرة بما يضمن انسيابية العمل فيه .
٣- التوصية بتشكيل اللجان الدائمية المؤقته فيما يخص عمل الدائرة .
٤- التوصية بمنح كتب شكر وتقدير لمنتسبي الدائرة .
٥- الموافقة على اشتراك منتسبي الدائرة بالمؤتمرات والندوات والدورات التدريبية والتطويرية داخل العراق .
٦- التوصية بالنقل او التنسيب لمنتسبي الدائرة .
٧- التوصيات باحالة منتسبي الدائرة الى لجنة تحقيقية وفقا لاحكام قانون انضباط موظفي الدولة والقطاع العام رقم ١٤ لسنة ١٩٩١ .
٨- منح موظفي الدائرة اجازة اعتيادية ان لايتجاوز (٢٠) عشرون يوم .
٩- لمدير الدائرة تخويل بعض صلاحياته لمدراء الاقسام .
١٠-للوزير تخويله بعض الصلاحيات الاضافية .

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جمهورية العراق
وزارة التعليم العالي والبحث العلمي
الدائرة القانونية

Republic of Iraq
Ministry of Higher Education and Scientific Research

العـــدد :ق/

التاريخ : / / ٢٠٢٠

صلاحيات قسم الرقابة والتدقيق الداخلي في مركز الوزارة وقسم العقود الحكومية

١-توقيع الكتب والمراسلات المستكملة للشروط القانونية والموجهة للوزارات او الدوائر والتشكيلات داخل الوزارة والتي تخص عمل القسم وابلاغ القرارات والمقترنه بالموافقات ومتابعه تنفيذها .

٢-توزيع المهام والمسؤوليات على موظفي القسم بما يضمن انسيابية العمل ومتابعة ذلك .

٣-تسمية الموظفين للجان المشكلة على مستوى قسمة .

٤-التوصية بتعيين الموظفين الدائمين في القسم عند توفر الدرجات الوظيفية والتخصيصات المالية .

٥-التوصية بتثبيت منتسبي القسم الذين هم تحت التجربة وفق قانون الخدمة المدنية او اي قانون يحل محله .

٦-التوصية بمنح الترفيعات والعلاوات السنوية وتغيير العناوين لمنتسبي القسم .

٧-التوصية بالموافقة على نقل منتسبي القسم الى دوائر او اقسام اخرى داخل الوزارة بما يؤمن انسيابية العمل .

٨-التوصية بإحالة طلبات التقاعد والاستقالة لمنتسبي القسم الى الدائرة الادارية والمالية لاستحصال الموافقات الاصولية .

٩-التوصية بمنح كتب الشكر والتقدير والمكافآت لمنتسبي القسم .

١٠- منح منتسبي القسم الاجازات الاعتيادية داخل العراق براتب تام لمدة لا تتجاوز (١٠) ايام .

١١- التوصية بمنح منتسبي القسم الاجازات الاعتيادية خارج العراق لمدة لا تتجاوز (٣٠) يوم .

١٢- التوصية بمنح منتسبي القسم الاجازات الاعتيادية لمدة اربعه اشهر وحسب احكام قانون الخدمة المدنية .

١٣- التوصية بترشيح منتسبي القسم للإجازات الدراسية والاعارات داخل العراق وخارجة .

١٤- التوصية بمنح اجازة الامومة لمستحقاتها وعلى وفق احكام القوانين والتعليمات النافذة .

١٥- التوصية بترشيح منتسبي القسم للجان الطبية وتوقيع الاستمارات المعدة لهذا الغرض .

١٦- التوصية بترشيح منتسبي القسم للاشتراك في المؤتمرات والندوات والحلقات الدراسية والوفود والدورات التدريبية والتطويرية داخل العراق وخارجة .

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صلاحيات مجلس الجامعة و السادة رؤساء الجامعات والهيئتين

اولاً:-صلاحيات مجلس الجامعة والهيئة

١- :- الصلاحيات العلمية:

أ. التوصية بخطط القبول للدراسات الأولية والعليا في الكليات والمعاهد العالية.
ب. اقرار خطط البحث العلمي للكليات والمعاهد العالية.
ج. اقرار خطة التعريب للعلوم والتأليف والترجمة.
د. اقرار خطة لتوفير مستلزمات التعليم.
ه. اقرار خطة لفتح الأقسام العلمية والفروع والمراكز العلمية.
و. اقرار المواضيع الدراسية وتوزيعها على السنوات الدراسية للكليات والمعاهد العالية .
ز. اقرار خطة لتوفير اعضاء الهيئة التدريسية.
ح. منح مرتبة الاستاذية لأعضاء الهيئة التدريسية.
ط. تنفيذ خطة القبول في الدراسات العليا.
ي. متابعة نتائج تقويم عضو الهيئة التدريسية .
ك. اقتراح المناهج الدراسية و احداث التغيير فيها بهدف الترصين المستمر للحالة العلمية.

٢-- الصلاحيات الادارية:

أ. اقتراح خطة العلاقات الثقافية الثنائية مع الجامعات والمؤسسات العلمية في الدول الأخرى وتنفيذها بعد اقرارها من قبل الوزارة.
ب. التعاقد مع اعضاء الهيئة التدريسية والفنيين من غير العراقيين وفق القوانين النافذة.
ج. التوصية بتعيين التدريسيين من حملة شهادة الماجستير أو ما يعادلها وفقا لضوابط التعيين.
د. التوصية بالإيفادات والاعارات والاجازات الدراسية خارج العراق.
ه. اقرار وتنفيذ خطة لتأهيل وتدريب الكوادر العلمية والادارية.
و. الموافقة على منح الاجازات الدراسية داخل العراق بعد اقرارها من الوزارة.
ز. اقرار وتنفيذ الملاك العلمي والاداري للكليات والمعاهد والمراكز.

٣-:- الصلاحيات المالية:

أ - اقرار وتنفيذ خطة الموازنة السنوية والمنهاج الاستيرادي والخطة الاستثمارية مباشرة بالتنسيق مع الجهات المختصة.
ب- اقرار الحسابات الختامية.

٤- للمجلس تخويل بعض صلاحياته للسيد رئيس الجامعة او الهيئة.

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ثانياً :- الصلاحيات الخاصة للهيئة العراقية للحاسبات والمعلوماتية

١- اقتراح السياسات والخطط واعداد الدراسات وتقديم المشورة في مجال المعلوماتية وأجهزة وبرامجيات الحاسبات وتوظيفها .
٢- المساهمة في وضع المعايير والمقاييس وأساليب التقويم للنشاطات المعلوماتية الوطنية.
٣- اجراء البحوث والدراسات النظرية والتطبيقية في مجال المعلوماتية الوطنية.
٤- منح الشهادات العلمية في مجال الحاسوب والمعلوماتية.
٥- تنفيذ وإدارة بنك وطني للمعلومات العلمية والتكنولوجية بأحدث الوسائل المتطورة.
٦- المساهمة في وضع وتطوير المناهج لأقسام هندسة علوم الحاسبات والبرامجيات في الجامعات والمعاهد.
٧- تنظيم دورات تدريبية مهنية وتخصصية في مجال المعلوماتية وأجهزة وبرامجيات الحاسبات.
٨- متابعة التطورات الحديثة في مجال المعلوماتية واعداد الدراسات وتقديم المقترحات بشأنها .

ثالثاً :- صلاحيات المجلس العراقي للاختصاصات الطبية :-

(أ) الصلاحيات العلمية:
أولاً- التوصية بخطط القبول وشروطها.
ثانيًا- اقرار خطط البحث العلمي.
ثالثًا- اقرار المناهج الدراسية والتدريبية.
رابعًا- اقتراح استحداث اختصاصات جديدة.
خامسًا- الاعتراف بالمستشفيات التعليمية.
سادسًا- منح الشهادات المهنية والفخرية بناءً على توصية المجالس العلمية ذات الاختصاص.
سابعًا- اقرار ترقية اعضاء الهيئة التدريسية ضمن ملاك الهيئة ووفقًا لقانون وزارة التعليم العالي والبحث العلمي.
ثامنًا- اقرار خطة توفير مستلزمات التعليم.
تاسعًا- الترشيح للجوائز والمرتبات العلمية والثقافية.
عاشرًا- اقتراح التعليمات الامتحانية وطريقة ادائها ودرجات النجاح وتعديلها.
حادي عشر- اقرار مدة الدراسة لطلبة الهيئة اذا اقتضت متطلباتها بموافقة الدائرة التي ينتسب إليها الطالب.
ثاني عشر- اقرار مدة الدراسة في المجلس العلمي اذا اقتضت متطلباتها.

ب- الصلاحيات الادارية:

أولاً- اقتراح خطة للتبادل العلمي والثقافي مع الجامعات والمؤسسات العلمية داخل العراق وخارجه بعد اقرارها من وزارة التعليم العالي والبحث العلمي.
ثانيًا- التعاقد مع اعضاء الهيئة التدريسية والاطباء والفنيين من غير العراقيين ووفقًا للتعليمات.
ثالثًا- التوصية بالايفادات والاعارات والاجازات الدراسية داخل العراق وخارجه.
رابعًا- اقرار خطة لتأهيل وتدريب الكوادر العلمية والادارية والمالية في الهيئة.

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خامسًا- الموافقة على منح الاجازات الدراسية داخل العراق بعد اقرارها من الوزارة.
سادسًا- اقرار وتنفيذ الملاك العلمي والاداري.
سابعًا- النظر في اعتراضات الطلبة المفصولين واتخاذ القرار بشأنها.

جـ- الصلاحيات المالية:

أولاً- اقرار وتنفيذ خطة الموازنة السنوية والملاك والمنهاج الاستيرادي والخطة الاستثمارية مباشرةً بالتنسيق مع الجهات المختصة.
ثانيًا- اقرار الحسابات الختامية.

د- للمجلس تخويل بعض صلاحياته واختصاصاته المنصوص عليها في اعلاه إلى رئيس المجلس.

رابعاً :- صلاحيات السيد رئيس الجامعة والهيئة :

١. النظر في محاضر اجتماعات مجالس الكليات والمصادقة عليها .
٢. التوصية بمنح التفرغ العلمي للتدريسيين داخل العراق وخارجه وفق القانون .
٣. متابعة سير العملية التدريسية والبحوث العلمية في الجامعة.
٤. منح منتسبي الجامعة التأييدات لمختلف الجهات بالاستمرار بالخدمة وتحديد الراتب.
٥. الموافقة على نقل طلبة الدراسة الصباحية الى الدراسة المسائية.
٦. الموافقة على النقل واستضافة الطلبة بين الجامعات العراقية وحسب الضوابط.
٧. اقتراح استحداث الكليات والاقسام العلمية الى مجلس الجامعة والغائها بعد التوصية من مجالس الكليات .
٨. المصادقة على محاضر لجان الترقيات العلمية المركزية ولجان التأليف والتعضيد والترجمة.
٩. الموافقة على تخفيض اجور الدراسة المسائية او الاعفاء منها.
١٠. صرف مستحقات الرواتب والمخصصات لمنتسبي الجامعة والهيئة وحسب الاستحقاقات القانونية .
١١. المصادقة على اوامر الغيار والمواد الاضافية للمشاريع بحسب الشروط العامة للمقاولات.
١٢. المصادقة على تسعير الكشوفات الاضافية في اوامر شؤون الغيار للجنة المشكلة في قسم الشؤون الهندسية واصدار اوامر الغيار وفقاً لتعليمات الموازنة العامة الاتحادية ووزارة التخطيط
١٣. الموافقة على الصرف من تخصيصات الموازنة على وفق البنود المقررة في قانون الموازنة العامة الاتحادية وتعليمات تنفيذها وبحدود(٢٥٠،٠٠٠،٠٠٠) مئتين وخمسون مليون .
١٤. تشكيل اللجان الجامعية للقيام بالزيارات الميدانية الدورية لمخازن ومختبرات المواد الكيماوية والسامة.
١٥. تشكيل لجان تقييم النتاجات العلمية القابلة للتسويق.
١٦. نقل واستضافة طلبة الدراسة الاولية والعليا بين الجامعات.
١٧. نقل خدمات وتنسيب موظفي الخدمة الجامعية بين الجامعات خلال فترة العطلة الصيفية الممتدة من ٧/١ لغاية ٩/١ من كل عام حفاظاً على انتظام العملية التدريسية بأوامر جامعية دون الحاجة للرجوع الى الوزارة على ان تكون بناءً على طلب الموظف المعني مع الدرجة والتخصيص المالي.

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١٨.نقل خدمات وتنسيب المنتسبين بين الجامعات بأوامر جامعية دون الحاجة لإصدار امر وزاري مع الدرجة والتخصيص المالي.
١٩.تنفيذ تعليمات وزارة التخطيط الخاصة بالإحالة وسحب العمل من المقاولين والاجراءات الاخرى المتعلقة بتنفيذ الاعمال من صلاحية الجهة المتعاقدة.
٢٠.توقيع كتب الاحالة الخاصة بالمشاريع العائدة للجامعات من موازنتها الاستثمارية.
٢١.اقرار نتائج القبول والنظر بكافة الاعتراضات للمتقدمين للدراسات العليا.
٢٢.اقامة الدورات التدريبية وورش العمل والندوات الخاصة بموضوع السيطرة على تداول المواد الكيماوية والبيولوجية الخطرة والسامة والمشعة.
٢٣. منح منتسبي الجامعة او الهيأة كتب الشكر والتقدير.
٢٤.منح منتسبي الجامعة او الهيئة المكافآت المالية عن الاعمال المتميزة بما لا يتجاوز (٢٥٠٠٠٠) الف دينار .
٢٥. الموافقة على منح الاستحقاقات الوظيفية (العلاوة والترفيع) لمنتسبي تشكيلات الجامعة وفق القانون .
٢٦.منح منتسبي الجامعة الاجازة من دون راتب استناداً لاحكام القرار ٤١٨ .
٢٧. رئاسة مجلس الجامعة او الهيئة او المجلس ودعوته إلى الاجتماعات العادية والاستثنائية وتنفيذ قراراته وله تمثيل الجامعة أمام الجهات كافة.
٢٨. إدارة شؤون الجامعة او الهيئة او المجلس العلمية والادارية والمالية وفق أحكام القانون والنظام وقرارات مجلس الجامعة .
٢٩. توزيع أرباح المكاتب والعيادات الاستشارية وتخصص نسبة (٢٠٪) منها للجامعة توضع في صندوق خاص وتصرف في تطوير أنشطتها العلمية والخدمية وكذلك توزيع نسبة (٨٠٪) منها على العاملين فيها استثناءً من المادة العاشرة من قانون المكاتب الاستشارية الهندسية.
٣٠.تعيين رؤساء الاقسام في الجامعة وتشكيلاتها بناءً على توصية عميد الكلية وتثبيتهم واعفاؤهم باستثناء مدراء الاقسام الداخلية وبالتنسيق مع جهاز الاشراف والتقويم العلمي .
٣١.منح الاجازات الاعتيادية والمرضية للموظفين والتدريسيين وفق القانون .
٣٢. الموافقة على اعارة خدمات التدريسيين من الجامعات الرسمية الى الجامعات والكليات والمعاهد الاهلية داخل العراق وخارجه.
٣٣. استثناء موظف الخدمة الجامعية في تشكيلات الجامعة من التفرغ بناءً على طلبه.
٣٤.منح مخصصات الخطورة المهنية لمنتسبي الجامعة وفق القانون رقم ٢٢ لسنة ٢٠٠٨ .
٣٥.تكليف منتسبي الجامعة للعمل الاضافي خارج اوقات الدوام الرسمي وايام العطل على وفق التشريعات النافذة .
٣٦.تشكيل لجان التضمين بأوامر جامعية ورفع توصياتها للوزير للمصادقة وفقا لقانون التضمين وتعليماته.
٣٧. لرئيس الجامعة او الهيئة او أن يعهد ببعض صلاحياته للمساعدين والعمداء أو لمن يراه مناسبًا.

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صلاحيات مساعدي رئيس الجامعة والهيئة

اولاً-صلاحيات مساعد رئيس الجامعة او الهيئة للشؤون الادارية :

١: الصلاحيات الادارية :

أ- إبداء المشورة الادارية والقانونية لرئيس الجامعة .
ب- الاشراف العام على جميع الاعمال الادارية والقانونية والمالية في الجامعة .
ت- اقتراح الدراسات والبحوث والنشاطات الخاصة بالجوانب الادارية والقانونية والمالية في الجامعة
ث- القيام بالزيارات الميدانية والتفتيشية لتشكيلات الجامعة كافة .
ج- مفاتحة دوائر الدولة ومؤسساتها المختلفة بما فيها الوزارات (عدا مكتب الوزير) فيما يخص عمل الاقسام المرتبطة به .
ح- اصدار الاوامر الادارية الخاصة بتعيين الموظفين من الاداريين والفنيين والتدريسيين في رئاسة الجامعة والمراكز العلمية المرتبطة بها على وفق القوانين والانظمة المعمول بها بعد استحصال الموافقات الاصولية .
خ- الموافقة على تشكيل اللجان المختلفة في الجامعة ضمن اختصاصه .
د- تشكيل اللجان التحقيقية للتحقيق بشأن مخالفات الموظفين والفنيين في رئاسة الجامعة .
ذ- الموافقة على صرف رواتب الاجازات الاعتيادية والمتراكمة للموظفين عن خدماتهم على وفق احكام القانون .
ر- قبول او رفض استقالة الموظفين عدا التدريسيين .
ز- نقل الموظفين من الاداريين والفنيين بين التشكيلات الادارية التابعة لرئاسة الجامعة وبالتشاور مع رؤساؤهم المباشرين .
س- الموافقة على ايفاد منتسبي الجامعة من الموظفين والاداريين والفنيين داخل العراق .
ش- الموافقة على صرف رواتب الاجازات الاعتيادية والمتراكمة للموظفين عن خدماتهم على وفق احكام القانون .
ص- منح اجازة المصاحبة الزوجية لموظفي الجامعة .
ض- الموافقة على اجازات الامومة لموظفات رئاسة الجامعة والتشكيلات التابعة لها .
ط- احالة المتقدمين للتعيين على الملاك التدريسي الى اللجان العلمية لتحديد صلاحياتهم للتدريس .
ظ- التوصية بتكليف موظفي رئاسة الجامعة والتشكيلات التابعة لها بالاعمال الاضافية التي تتطلبها مصلحة الجامعة .
ع- تكليف مسؤولي الشعب الادارية والوحدات في الاقسام التابعة له .
غ- منح مخصصات الخطورة لموظفي رئاسة الجامعة حسب الاستحقاق ووفق القانون .
ف- اصدار الاوامر الجامعية في الصلاحيات المخولة له
ق- اية صلاحيات اخرى يخولها اياه رئيس الجامعة او الهيئة .

٢- : الصلاحيات المالية :

أ- اقرار الكشوفات للأعمال ومنح المدد الاضافية في المقاولات الخاصة بالجامعة .
ب- الموافقة على شراء المستلزمات الادارية والاجهزة العلمية اللازمة والتي تتطلبها تشكيلات الجامعة المختلفة .
ت- اعداد مقترح موازنة الجامعة السنوية وبالتنسيق مع القسم المالي ورفعها الى رئيس الجامعة .

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ث- التوصية بالموافقة على منح المخصصات بكل انواعها حسب احكام القوانين والقرارات والتعليمات المراعية فيما يخص منتسبي رئاسة الجامعة والمراكز العلمية التابعة لها.

ج- اقتراح اجراء المناقلات اللازمة في مواد الموازنة ضمن الفصل الواحد وبناءً على اقتراح القسم المالي في الجامعة او الهيئة.

ح- الموافقة على الاشتراك في الجرائد والمجلات والمطبوعات الرسمية وغير الرسمية وبحدود التخصيصات المالية .

خ- الموافقة على صرف السلف المستديمة لأغراض النشاط بحدود الصلاحيات المخولة له والموافقة على صرف السلف الاخرى طبقاً للقوانين والتعليمات الخاصة .

د- اية صلاحيات اخرى يخولها اياه رئيس الجامعة او الهيئة .

صلاحيات مساعد رئيس الجامعة او الهيئة للشؤون العلمية :

١- الاشراف على جميع المراكز العلمية في الجامعة والاقسام المرتبطة بها .
٢- الاشراف العلمي على النشاطات العلمية في كليات الجامعة ومعاهدها ومراكزها .
٣- اعداد خطة البحث العلمي في الجامعة ورفعها الى رئيس الجامعة لعرضها على مجلس الجامعة للمصادقة .
٤- التوصية الى رئيس الجامعة بمنح الشهادات العلمية للمتخرجين في الدراسات الاولية والعليا لكل الاختصاصات الموجودة في الجامعة .
٥- متابعة قضايا الطلبة العلمية والبت فيها .
٦- إبداء الرأي في التفرغ العلمي وايفاد التدريسيين والتوصية بشأنها الى رئيس الجامعة او الهيئة.
٧- تمثيل الجامعة في الاجتماعات والمؤتمرات واللجان العلمية ذات العلاقة بطبيعة عمله وبتخويل من رئيس الجامعة .
٨- تحديد اعداد المقبولين في الدراسات الاولية (الصباحية والمسائية) ومختلف الاختصاصات ورفع التوصية اللازمة لرئيس الجامعة او الهيئة وبالتنسيق مع مجالس الكليات المعنية .
٩- اقتراح الترشيحات للزمالات والبعثات العلمية فيما يخص منتسبي رئاسة الجامعة او الهيئة .
١٠- متابعة البرامج والبحوث والمؤتمرات والندوات العلمية التي تقيمها الكليات والمعاهد ومراكز الجامعة او الهيئة.
١١- المصادقة على وثائق التخرج الخاصة بالطلبة واصدار التعليمات الخاصة بشأنها على وفق القوانين ذات العلاقة .
١٢- الاشراف على النشاطات الطلابية الثقافية والفنية والرياضية في الجامعة .
١٣- تشكيل اللجان العلمية المختلفة في الجامعة او الهيئة ضمن اختصاصاته باستثناء لجنة الترقيات المركزية وفروعها .
١٤- اقرار وتنفيذ برنامج التدريب الصيفي للطلبة والممارسات الميدانية للتدريسيين وخطط انفتاح الجامعة على مؤسسات حقل العمل .
١٥- اية صلاحيات اخرى يخولها اياه رئيس الجامعة او الهيئة .

جمهوريـة العراق
وزارة التعليم العالي والبحث العلمي
الدائرة القانونية

العـدد :ق/
التاريخ : / / ٢٠٢٠

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صلاحيات السيد رئيس المجلس العراقي للاختصاصات الطبية:-

أ- اعداد خطة توفير مستلزمات التعليم في المجلس.
ب- اعداد خطة للقبول.
ج- اعداد الملاك ومشروع الموازنة السنوية والحسابات الختامية.
د- التعاقد مع اعضاء الهيئة التدريسية من العراقيين.
هـ- اقتراح تعيين التدريسيين في المجلس وفقًا لقانون وزارة التعليم العالي والبحث العلمي.
و- ايفاد اعضاء الهيئة التدريسية.
ز- تشكيل لجان استشارية لدراسة موضوعات محددة.
ح- الموافقة على إقامة علاقات ثقافية مع الجامعات والمؤسسات العلمية العربية والاجنبية.
ط- اقرار اقامة المؤتمرات ذات الطابع المحلي والعالمي وتنظيم اقامة الندوات والحلقات الدراسية.
ي- عرض رأي المجلس العلمي المتخصص بشأن ترقية عضو الهيئة التدريسية مع الشروط المتممة على مجلس الهيئة.
ك- المصادقة على محاضر جلسات المجلس العلمية.
ل- اعفاء الطلبة من بعض متطلبات الدراسة في المجلس اذا كانت لديهم مؤهلات علمية تقرها جهات اكاديمية معترف بها.
م- النظر في تأجيل دراسة الطالب لأسباب خارجة عن إرادته.
ن- فرض العقوبات الانضباطية بحق الطلبة المقصرين أو فصلهم وفق التعليمات الخاصة بهذا الشأن.
س- استحداث الوحدات المالية والادارية والفنية كلما تطلبت الحاجة إلى ذلك.
ش- منح كتب الشكر والتقدير لمنتسبي المجلس عن الاعمال المتميزة.
ص- منح المكافآت المالية لمنتسبي المجلس عن الاعمال المتميزة بما لا يتجاوز (٢٥٠٠٠٠) الف دينار .
ض- منح الاجازات الاعتيادية لمنتسبي المجلس وفقاً لقانون الخدمة المدنية .
ض- صرف مستحقات الرواتب والمخصصات لمنتسبي مركز الوزارة وحسب الاستحقاقات القانونية .

صلاحيات مجلس الكلية و السادة عمداء الكليات

اولاً:-صلاحيات مجلس الكلية:

١- الصلاحيات العلمية:

أ. وضع خطة القبول للدراسات الأولية والعليا حسب القسم أو الفرع العلمي والشروط الخاصة بها ومتابعة تنفيذه
ب. وضع الخطط الخاصة بالبحث العلمي والتأليف والترجمة وتوفير مستلزمات التعليم وتوفير أعضاء الهيئة التدريسية وخدمة المجتمع.
ج. وضع الخطط لفتح الأقسام والفروع العلمية والمراكز واقتراح استحداث دمج أو الغاء الأقسام أو الفروع العلمية وتوزيع المناهج على السنوات الدراسية.
د. اقرار خطط الأقسام العلمية بشأن دعوة الأساتذة الزائرين.

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هـ. اقرار عناوين الرسائل الجامعية وتسمية لجان الامتحان الشامل والمشرف والمشرف المشارك ونتائج المناقشة وإضافة أو حذف مواضيع دراسية للدراسات العليا.
و. التوصية باستحداث الدراسات العليا ومناهجها وخططها السنوية والخمسية وغيرها من الأمور التي لم يرد ذكرها في الفقرة (هـ)المذكورة انفا.

٢- الصلاحيات الادارية:
أ. الموافقة على نقل وتنسيب الأفراد العاملين من التدريسيين والفنيين والاداريين ضمن كليات ودوائر الجامعة بالتنسيق بين طرفي المناقلة.
ب. الإشراف على شؤون الكلية والاهتمام بمختلف أوجه نشاطاتها العلمية والثقافية والتربوية والرياضية.
ج. اعداد ملاك الكلية قبل نهاية السنة الدراسية للسنة اللاحقة في ضوء ما يقدمه العميد ومجالس الأقسام.
د. اقتراح الإجازات الدراسية داخل العراق لمنتسبي الكلية بناءً على اقتراح القسم أو الفرع العلمي المختص.
هـ. اقتراح إعارة خدمات التدريسيين أو منحهم الإجازات والزمالات الدراسية خارج العراق بناءً على اقتراح القسم أو الفرع العلمي المختص.
و. الموافقة على تفرغ عضو الهيئة التدريسية داخل وخارج العراق وفق الضوابط.
ز. الموافقة على تغيير عناوين الفنيين والإداريين ضمن ملاك الكلية المصدق ذاتها وطبقًا لأحكام القوانين والأنظمة والتعليمات.
ح. للمجلس تشكيل لجان تساعده على أداء مهامه العلمية والادارية والمالية والتربوية.
ط. فرض العقوبات الانضباطية على الطلبة حسب التعليمات المرعية.
ي. النظر في جميع الشؤون الأخرى في الكلية التي يحيلها إليه العميد.
ك. الإشراف على تنفيذ الأنظمة والتعليمات فيما يتعلق بالأمور العلمية والادارية والأنشطة الطلابية في الكلية.
ل. التوصية بانتداب أعضاء الهيئة التدريسية والمحاضرين للدراسات العليا حسب المدد والحاجة التي تحددها أو الفروع.
م. ابداء التوصية بشأن الأمور المحالة من الوزير أو رئيس الجامعة.
ن. اقتراح خطة لتأهيل الكوادر العلمية والادارية.
س. اقتراح خطة للعلاقات الثقافية الثنائية.

٣- الصلاحيات المالية :
أ. اقتراح خطة الموازنة السنوية والمنهاج الاستيرادي السنوي والخطة الاستثمارية السنوية.
ب. التوصية بإقرار الحسابات الختامية للكلية.
ج. المصادقة على قرارات اللجان الخاصة بالشطب والتثمين والإيجار والبيع لأموال الدولة المنقولة وغير المنقولة وفقًا لأحكام القانون.
د. الموافقة على اعداد التصاميم والخرائط وجداول الكميات للأعمال والمشاريع الخاصة بها والواردة في الموازنة الاعتيادية او الاستثمارية واحالتها والتعاقد على تنفيذها وفقًا لأحكام القانون والنظام والشروط الخاصة بها.

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٤- للمجلس تخويل بعض صلاحياته إلى عميد الكلية.

ثانياً:- صلاحيات السيد عميد الكلية او المعهد:

(٢) الصلاحيات العلمية :

أ. متابعة سير الدراسات الأولية والعليا لتحقيق الأهداف الواردة في هذا القانون والترصين المستمر للحالة الفكرية والتربوية والعلمية .

ب. المصادقة على توصيات مجالس الأقسام والفروع.

ج. الموافقة على توزيع المواد الدراسية والوحدات الفصلية على أعضاء هيئة التدريس والمحاضرين وتشكيل لجان مناقشة الرسائل وتحديد مواعيدها.

د. تطبيق جميع التعليمات والأنظمة الصادرة بشأن تنظيم الشؤون العلمية والتربوية والقرارات الصادرة من مجلس الكلية.

(٣) الصلاحيات الادارية والمالية:

أ. تطبيق التعليمات والأنظمة والقوانين المتعلقة بجميع الشؤون الادارية والمالية.

ب. الموافقة على توصيات اللجان المشكلة في الكلية.

ج. الموافقة على تسجيل الطلبة للدراسات.

د. الموافقة على شراء واستيراد الوسائل المختبرية والمستلزمات الأخرى والمجلات والكتب حسب التشريعات المعمول بها.

ه. الموافقة على صرف مكافآت لمن هم من خارج الجامعة عن التدريب والتدريس داخل الكلية والإشراف على الرسائل والاشتراك في لجان الامتحان الشامل ولجان المناقشة حسب التشريعات النافذة.

صلاحيات القسم العلمي:-

١. مناقشة مناهج الدراسة ومفرداتها والكتب الدراسية واقتراح تعديلها أو تبديلها في ضوء توصيات أعضاء الهيئة التدريسية.

٢. اقتراح حاجات القسم من اعضاء الهيئة التدريسية والفنيين والتوصية بدعوة الاساتذة الزائرين.

٣. اقرار مشاريع البحوث العلمية المقدمة من أعضاء القسم واقتراح السبل الكفيلة المؤلفة لانجازها والتوصية بتعضيد البحوث العلمية والكتب المؤلفة والمترجمة والاهتمام ببحوث الطلبة وتوفير مستلزمات تنفيذها.

٤. تنفيذ قرارات مجلس الكلية.

٥. تأليف اللجان التربوية والعلمية وفقًا لحاجات القسم.

٦. الإشراف على سير التدريسات وأساليب التدريب وتطويرها وعلى قيام أعضاء الهيئة التدريسية ومنتسبي القسم الأخرين بواجباتهم وعلى الشؤون العلمية للطلبة في مختلف مراحل الدراسة عن طريق الإشراف العلمي والعملي المستمر عليهم.

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٧. متابعة التطورات العلمية والتقدم المتسارع للمعرفة والعلوم وتوجيه أعضاء الهيئة التدريسية لتحديث المناهج والمواد الدراسية بما يجعلها منسجمة مع هذه التطورات العلمية والتكنولوجية.
٨. تخويل بعض صلاحياته إلى رئيس القسم.

صلاحيات السيد رئيس القسم العلمي:-

يمارس رئيس القسم العلمي المهام التالية :-
اولاً – العلمية :
١- تنفيذ قرارات مجلس الجامعة ومجلس الكلية فيما يتعلق بالقسم العلمي .
٢- ادارة القسم او الفرع من العلمية والادارية والتربوية والثقافية والمالية وشؤون الطلبة .
٣- الاشراف على سير التدريس ومتابعة قيام الهيئة التدريسية بواجباتهم .
٤- اعداد التقارير العلمية والفصلية والسنوية عن نشاط القسم ورفعها الى العميد .
٥- اعداد برنامج تدريب الطلبة .
٦- توجيه كتابة الرسائل الجامعية وفق حاجات البلد .
٧- تشكيل اللجنة الامتحانية في القسم .
٨- ترشيح طلبة الدراسات العليا المتقدمين للدراسة في القسم وفقاً لضوابط القبول .
٩- التوصية في تحديث المناهج الدراسية للدراسات العليا بناءً على اقرار القسم العلمي .
١٠- عرض البحوث على اللجان العلمية لأغراض التعضيد والترقية .
١١- اقتراح اصدار الاوامر الادارية الخاصة بالتفرغ الجامعي والمحاضرات الاضافية استناداً الى موافقة مجلس الكلية .
١٢- اقتراح الخبراء للنظر في الترقيات العلمية لتدريسي القسم .
١٣- الموافقة على ترشيح اعضاء الهيئة التدريسية للمشاركة في اللجان الفنية والادارية والعلمية .
١٤- توجيه الاستفسارات لأعضاء الهيئة التدريسية عند غيابهم او تأخرهم عن الدوام الرسمي .
١٥- مفاتحة الاقسام العلمية في الجامعة والاقسام المناظرة في الجامعات العراقية الاخرى وهيئة التعليم التقني فيما يتعلق بالشؤون العلمية والتدريسية بموافقة العمادة المسبقة .
١٦- مناقشة المناهج الدراسية ومفرداتها وتقديم المقترحات بشأنها .
١٧- تحديد احتياجات القسم من التدريسيين والفنيين والاداريين بناءً على توصية القسم العلمي .
١٨- اقتراح اعداد الطلبة والشروط الخاصة بالقبول في القسم العلمي حسب الطاقة الاستيعابية .
١٩- توزيع المواد الدراسية على اعضاء الهيئة التدريسية في القسم العلمي بناءً على ما يقرره القسم الادارية .

ثانياً – الاداريــة :-
١- التوقيع على استمارة العلاوة السنوية والتوقيع في حقل الرئيس المباشر لمنتسبي كافة والتوصية بمنحهم العلاوة والترفيع .
٢- الموافقة على منح موظفي الخدمة الجامعية الاجازات الاعتيادية استناداً الى قانون الخدمة الجامعية رقم (٢٣) لسنة ٢٠٠٨ .
٣- التوصية بمنح الشكر والتقدير لمنتسبي القسم في حالة الاداء المتميز .
٤- التوصية بمنح الزمالات والاجازات الدراسية لمنتسبي القسم .

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
الدائرة القانونية

Republic of Iraq
Ministry of Higher Education and Scientific Research

العـدد :ق/
التاريخ : / / ٢٠٢٠

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٥- توزيع الواجبات على منتسبي القسم وفق ما تمليه مصلحة القسم العلمية واصدار الاوامر الادارية بذلك

٦- دعوة مجلس القسم للانعقاد .
٧- اصدار الاوامر الادارية الخاصة بإلقاء المحاضرات من قبل المحاضرين الخارجيين بالتنسيق مع عمادة الكلية ومتابعة صرف اجورها .

صلاحيات مجلس إدارة مركز البحوث النفسية

١- دراسة واقرار جميع الخطط الأولية للمركز في ضوء التوجيهات المطلوبة ومراقبة ومتابعة تنفيذها بعد اقرارها بصيغتها النهائية.
٢- دراسة واقرار السياسة العامة في المجالات العلمية والمالية والادارية للمركز.
٣- تقييم النتائج النهائية لمشاريع البحوث التي يعدها المركز ومتابعة تنفيذها.
٤- مناقشة واقرار التقرير السنوي للمركز ومعالجة المشاكل والمعوقات التي تعترض عمل المركز.
٥- تهيئة المستلزمات المادية والبشرية بالتنسيق مع الجهات الأخرى ذات العلاقة بما يمكنه من تنفيذ خططه وبرامجه.
٦- التوصية بترقية موظفي البحث العلمي العاملين في المركز وفق قواعد الخدمة التي ستشرع لهذا المركز لاحقًا.
٧- اقتراح استحداث اقسام أو شعب أو وحدات للمركز أو الغائها أو دمجها بما ينسجم وطبيعة عمل المركز.
٨- التوصية بانضمام المركز إلى الاتفاقيات العربية والدولية وكذلك تقرير المشاركة في المؤتمرات والندوات والحلقات الدراسية المتعلقة بنشاط المركز بموافقة الجهات المختصة.
٩- اقتراح استحداث عناوين وظائف واضافتها إلى الجداول الملحقة بقواعد الخدمة المعمول بها بما يتلاءم وطبيعة اعمال المركز.
١٠- دراسة المقترحات بشأن تطوير وتوسيع اعمال المركز أو أي من الموضوعات التي لها علاقة بنشاطه واصدار القرار اللازم بذلك.
١١- اقتراح مشروعات القوانين والانظمة الخاصة المتعلقة بنشاط المركز.
١٢- لمجلس الادارة تخويل بعض صلاحياته إلى المدير العام للمركز.

صلاحيات السيد مدير عام مركز البحوث النفسية:

أ- الاشراف على اعداد مشروع الخطة الأولية للمركز بما فيها خطط البحث العلمي والخطط المالية والاستثمارية والاستيرادية وخطة الأفراد وتنفيذها بعد اقرارها بصيغتها النهائية.
ب- اتخاذ الإجراءات اللازمة لتنفيذ قرارات مجلس الإدارة.
ت- اعداد مقترح موازنة المركز السنوية ضمن الموازنة السنوية لوزير التعليم العالي والبحث العلمي وعرضها على مجلس الإدارة لإقرارها ومن ثم ارسالها إلى الوزير.

ث- تقديم تقارير إلى وزير التعليم العالي والبحث العلمي ومجلس الإدارة مرة واحدة كل ثلاثة أشهر عن سير اعمال المركز والسعي الدائم لتطويرها وتحسين أداء العاملين فيها.
ج- الاشراف والرقابة على تقسيمات المركز والسعي الدائم لتطويرها وتحسين اداء العاملين فيها.
ح- تحديد المستوى الوظيفي والمواصفات الوظيفية لمسؤولي التقسيمات الفرعية للأقسام واعادة توزيع العاملين فيها بما يتفق والتقسيمات الواردة ذكرها في النظام.
خ- اقتراح استحداث وحدات للشعب في أقسام المركز.
د- للمدير العام تخويل بعض صلاحياته إلى غيره من موظفي المركز.

صلاحيات مجلس ادارة مركز بحوث السرطان والوراثة الطبية :

١- رسم السياسة العامة للمركز واقرار خطة العمل السنوية .
٢- دراسة واقرار الخطة العامة لبحوث المركز .
٣- اقرار خطط البحوث والتجارب العلمية وفق القوانين والتعليمات النافذة .
٤- اقرار خطط ووسائل التنسيق بين المركز والمراكز والجهات الاخرى ذات العلاقة .
٥- اقرار مشروع الموازنة السنوية للمركز .
٦- تقييم اداء اقسام المركز .
٧- للوزير تخويل بعض الصلاحيات للسيد مدير المركز .

صلاحيات مجلس مركز علوم البحار:
١- اقرار السياسة العامة في المجالات العلمية والادارية في المركز وعرضها على مجلس الجامعة للمصادقة عليها ومتابعة تنفيذها.
٢- اقرار التقرير السنوي والنصف سنوي في المركز.
٣- اقتراح الاتفاقات العلمية ومتابعة تنفيذها.
٤- التوصية لمجلس الجامعة باستحداث شعب الاقسام او الغائها او دمجها بناءً على اقتراح من اللجنة العلمية في المركز.
٥- اقتراح استحداث عناوين وظائف واضافتها إلى الجداول الملحقة بقواعد الخدمة المعمول بها بما يتلائم وطبيعة اعمال المركز.
٦- دراسة وتطوير المقترحات بشأن تطوير وتوسيع اعمال المركز.

صلاحيات مدير مركز علوم البحار:
١- الاشراف على اعداد مشروع الخطة العلمية للمركز بما فيها خطط البحث العلمي والخطط المالية والاستيرادية وتنفيذها بعد اقرارها بصيغتها النهائية من قبل المجلس.
٢- اعداد مقترح موازنة المركز السنوية ضمن الموازنة السنوية للجامعة وعرضها على المجلس لإقرارها تمهيدًا لتوحيدها مع موازنات بقية الدوائر التابعة للجامعة.
٣- تقديم تقارير سنوية ونصف سنوية عن سير اعمال المركز واقتراح الحلول لمعالجة المشاكل التي تعترضه.

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جمهوريـة العراق
وزارة التعليم العالي والبحث العلمي
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٤- الاشراف والرقابة على اعمال المركز والسعي الدائم لتطويرها وتحسين اداء العاملين فيها.
٥- اعادة توزيع العاملين في المركز بما يتفق والتقسيمات الوارد ذكرها في هذا النظام.
٦- اقتراح استحداث شعب لأقسام المركز.

يعد هذا الامر نافذا اعتباراً من تاريخه اعلاه

أ.د. نبيل كاظم عبد الصاحب
وزير التعليم العالي والبحث العلمي
٣/ ٦/ ٢٠٢٠

وزارة التعليم العالي والبحث العلمي
الدائرة القانونية
الاوامر الوزارية

نسخة منه الى:

- مكتب معالي الوزير/للعلم ...مع التقدير.
- السادة الوكلاء المحترمون/للتفضل بالعلم ... مع التقدير.
- السادة مستشاري الوزارة المحترمين/للتفضل بالعلم ...مع التقدير.
- السيد رئيس جهاز الاشراف والتخطيط والمتابعة المحترم/للتفضل بالعلم..مع التقدير.
- السادة مدراء عامي دوائر مركز الوزارة المحترمين/للتفضل بالعلم..مع التقدير.
- الهيئتين/السيد رئيس الهيئة المحترم/للتفضل بالعلم..مع التقدير.
- الجامعات كافة/السيد رئيس الجامعة المحترم/للتفضل بالعلم...مع التقدير.
- المجلس العراقي للاختصاصات الطبية/السيد رئيس المجلس المحترم /للتفضل بالعلم ...مع التقدير.
- مركز البحوث النفسية/السيد مدير عام المركز/للتفضل بالعلم...مع التقدير.
- الدار الجامعية للطباعة والنشر والترجمة/السيد مدير عام الدار/للتفضل بالعلم...مع التقدير.
- قسم الرقابة والتدقيق الداخلي /للتفضل بالاطلاع...مع التقدير
- الدائرة القانونية /... مع الاوليات.
- الصـــادرة

جامعة النهرين
كلية الهندسة
مكتب العميد

ذيل (3-1-7)

العدد: [illegible] ٤٢٦١١/١/١ التاريخ: ١٨/٩/٢٠٢٣

(أمر إداري)

م/ اللجان الدائمية للعام الدراسي (٢٠٢٣/٢٠٢٤)
(قسم الهندسة المدنية)

بناءً على مقتضيات مصلحة العمل ، تقرر مايأتي :

تشكيل اللجان الدائمية العاملة في قسم الهندسة المدنية للعام الدراسي (٢٠٢٣/٢٠٢٤) لتكون كما هو مبين في المرفقات طياً .

<u>المرفقات</u> : اللجان الدائمية تسع صفحات

السيد المقرر
الأستاذ مازن [illegible]
[illegible]
١٨/٩

أ.د. جمعة سلمان جياد
العميد
١٨/ أيلول/٢٠٢٣م

نسخة منه الى /
- مكتب السيد العميد / للتفضل بالإطلاع ... مع التقدير.
- السيدين معاوني العميد ... مع التقدير.
- السيد رئيس قسم الهندسة المدنية / كتابكم بالعدد (هـ.ن.م.د/٣٦٥ في ٢٠٢٣/٩/١٧) ... مع التقدير.
- شعبة ضمان الجودة وتقييم الأداء ...مع التقدير.
- أمانة مجلس الكلية.

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جامعة النهرين / كلية الهندسة
العراق - بغداد - الجادرية- ص. ب: ٦٤٠٤٠

جامعة النهرين / كلية الهندسة / قسم الهندسه المدنية

مجلس القسم واللجان في قسم الهندسة المدنية للعام الدراسي 2023-2024

مجلس القسم

ت	الاسم الثلاثي	التخصص الدقيق	التكليف
1)	أ.د. مصعب عايد كصب / رئيس القسم	هندسة الانشاءات	رئيساً
2)	أ.د. قاسيون سعد الدين محمد شفيق	هندسة جيوتكنيك	عضواً
3)	أ.د. محمد عبد الخالق ابراهيم	هندسة بيئة	عضواً
4)	أ.د. حسام كاظم رسن	هندسة الانشاءات	عضواً
5)	أ.م.د. أسماء ثامر أبراهيم	هندسة الطرق والمواصلات	عضواً
6)	أ.م.د. ليث خالد كامل	هندسة الانشاءات	عضواً
7)	أ.م.د. هيثم علاء حسين	هندسة منشآت هيدروليكية	عضواً
8)	أ.م.د. محمد علي اكرم	هندسة البيئة	عضوا
9)	م. دعاء عبد الرزاق فالح / مقرر القسم	هندسة جيوتكنيك	عضواً / مقرراً

اللجنة العلمية

ت	الاسم الثلاثي	التخصص الدقيق	التكليف
1)	أ.د. عبد العزيز عبد الرسول عزيز	هندسة جيوتكنيك	رئيساً
2)	أ.د. جبار حمود عبد النبي البيضاني	هندسة البيئة	عضواً
3)	أ.د. محمود صالح مهدي	هندسة موارد مائية	عضواً
4)	أ.د. أحمد سلطان علي	هندسة مواد انشائية	عضواً
5)	أ.د. مصعب عايد كصب / رئيس القسم	هندسة الانشاءات	عضواً
6)	أ.د. حاتم عبد الكريم رشيد	هندسة ادارة مشاريع	عضواً
7)	أ.م.د. حسن موسى جواد	هندسة الطرق والمواصلات	عضواً
8)	أ.م.د. ضياء مصطفى ذيبان	هندسة الانشاءات	عضواً / مقرراً

جامعة النهرين / كلية الهندسة / قسم الهندسة المدنية

مجلس القسم واللجان في قسم الهندسة المدنية للعام الدراسي 2023-2024

اللجنة الامتحانية			
ت	الاسم الثلاثي	التخصص الدقيق	التكليف
1	أ.د. مصعب عايد كصب / رئيس القسم	هندسة الانشاءات	رئيساً
2	أ.م.د. ليث خالد كامل	هندسة الانشاءات	عضواً
3	أ.م.د. احمد فالح احمد فاضل	هندسة الانشاءات	عضواً
4	م.د. احمد فرحان مويز	هندسة الطرق والمواصلات	عضواً
5	م.د. الاء وليد حميد	هندسة الانشاءات	عضواً
6	م. دعاء عبدالرزاق فالح / مقرر القسم	هندسة جيوتكنيك	عضواً
7	م.م. ربى حنا مجيد	هندسة جيوتكنيك	عضواً
8	م.م. مناهل زينو محمد	علوم حاسوب	عضواً
9	م.م. كرم قيس ناجي	هندسة كهرباء	عضواً
10	م.م. مسرة جلاء يحيى	هندسة كهرباء	عضواً / مقرراً

لجنة الدراسات العليا			
ت	الاسم الثلاثي	التخصص	التكليف
1	أ.د. جبار حمود عبد النبي البيضاني	هندسة البيئة	رئيساً
2	م.د. ياسر محمود كاظم	هندسة جيوتكنيك	عضواً
3	م. نورة سعد فرج	هندسة البيئة	عضواً
4	م. مها سامح حمودي	اداب انكليزي	عضواً
5	م.م. هبة عماد عباس	هندسة الانشاءات	عضواً

جامعة النهرين / كلية الهندسة / قسم الهندسة المدنية

مجلس القسم واللجان في قسم الهندسة المدنية للعام الدراسي 2023-2024

لجنة ضمان الجودة			
ت	الاسم الثلاثي	التخصص	التكليف
1	أ.م.د. محمد علي اكرم	هندسة البيئة	رئيساً
2	م. نورة سعد فرج	هندسة البيئة	عضواً
3	م.م. حوراء محمد سعيد	هندسة مواد انشائية	عضواً
4	م.م. قتيبة عبدالهادي عبود	هندسة الانشاءات	عضواً / مقرراً

لجنة الارشاد التربوي			
ت	الاسم الثلاثي	التخصص الدقيق	التكليف
(1	أ.د. محمد عبد الخالق ابراهيم	هندسة بيئة (الدراسات العليا-دكتوراه)	رئيساً
(2	أ.د. حاتم عبد الكريم رشيد	هندسة ادارة مشاريع (المرحلة الثالثة)	عضواً
(3	أ.د. احمد سلطان علي	هندسة المواد الانشائية (الدراسات العليا-ماجستير)	عضواً
(4	أ.م.د. اسماء ثامر ابراهيم	هندسة الطرق والمواصلات (المرحلة الرابعة)	عضواً
(5	أ.م.د. ليث خالد كامل	هندسة الانشاءات (المرحلة الأولى)	عضواً
(6	أ.م.د. عبد الخالق عبدالجبار عبد الرضا	هندسة الانشاءات (المرحلة الثانية)	عضواً / مقرراً

لجنة النشاطات الطلابية			
ت	الاسم الثلاثي	التخصص	الوظيفه
(1	م.د. امنة طلال عبد الحميد	هندسة الطرق والمواصلات	عضواً
(2	م.د. احمد عبد الحافظ مصطفى	هندسة الانشاءات	عضواً
(3	م.م. ربى حنا مجيد	هندسة جيوتكنيك	عضواً/ مقرراً

جامعة النهرين / كلية الهندسة / قسم الهندسة المدنية

مجلس القسم واللجان في قسم الهندسة المدنية للعام الدراسي 2023-2024

لجنة الاعلام والموقع الالكتروني			
ت	الاسم الثلاثي	التخصص	التكليف
1)	أ.م.د. حسن موسى جواد	هندسة الطرق والمواصلات	رئيساً
2)	م.د. ياسر محمود كاظم	هندسة جيوتكنيك	عضواً
3)	م. مهندس ايات حسين مجيد	مدني عام	عضواً / مقرراً

لجنة جودة المختبرات			
ت	الاسم الثلاثي	التخصص	التكليف
1)	أ.د. قاسيون سعد الدين محمد شفيق	هندسة جيوتكنيك	رئيساً
2)	أ.د. ابراهيم سليم ابراهيم	هندسة الانشاءات	عضواً
3)	م.د. امنة طلال عبد الحميد	هندسة الطرق والمواصلات	عضواً
4)	م.د. احمد فرحان مويز	هندسة الطرق والمواصلات	عضواً
5)	م.د. الاء وليد حميد	هندسة الانشاءات	عضواً
6)	م. أزهر صادق ياسين	هندسة جيوتكنيك	عضواً
7)	م.م. حوراء محمد سعيد	هندسة مواد انشائية	عضواً
8)	م.م. قتيبة عبدالهادي عبود	هندسة الانشاءات	عضواً
9)	م. مهندس ايات حسين مجيد	مدني عام	عضواً
10)	م. مهندس هبه عبدالرزاق يوسف	مدني عام	عضواً
11)	م. مهندس فاروق رعد سعد الله	مدني عام	عضواً / مقرراً

لجنة قاعدة البيانات وتوثيق نشاطات التدريسيين			
ت	الاسم الثلاثي	التخصص	التكليف
1)	أ.م.د. حسن موسى جواد	هندسة الطرق والمواصلات	رئيساً
2)	م.م. كرم قيس ناجي	هندسة كهرباء	عضواً
3)	م. مهندس هبه عبدالرزاق يوسف	مدني عام	عضواً
4)	سولاف كمال فارس	معاون مدير	عضواً / مقرراً

REPUBLIC OF IRAQ
MINISTRY OF HIGHER EDUCATION
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جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية
العدد: هـ ن م د / ١٨٨
التاريخ ٢٩ / ٤ / ٢٠٢٤

امر داخلي

دس (٢-١-٥)

م/ لجنة مراجعة الجاهزية لقسم الهندسة المدنية

تقرر تشكيل اللجنة ادناه لاكمال متطلبات مراجعة الجاهزية للاعتماد الهندسي البرامجي لقسم الهندسة المدنية للعام الدراسي الحالي.

المعيار	المسؤولين عن المعيار
الاول-الثاني-الثالث	أ.د. جبار حمود عبدالنبي + أ.م.د. عبد الخالق جبار عبد الرضا + م.د. ياسر محمود كاظم
الرابع-الخامس-السادس	أ.م.د. حسن موسى جواد + أ.م.د. زينة رياض صالح + أ.م.د. احمد عبد الحافظ مصطفى
السابع-الثامن-التاسع	أ.م.د. رائد احمد داود + أ.م.د. ضياء مصطفى ذيبان + م.د. احمد فرحان مويز
العاشر	أ.م.د. سلطان احمد داود + أ.م.د. محمد علي اكرم

على ان تنجز اللجنة اعمالها خلال 7 ايام.

المرفقات:
- استمارة استبانة المراجعة الذاتية للجاهزية والية عمل لمراجعة الجاهزية.

أ. د. مصعب عايد كصب
رئيس قسم الهندسة المدنية
2024/04/29

نسخة منه الى
- مقررية القسم
- الملف

استبانة المراجعة الذاتية للجاهزية
وآلية عمل لمراجعة الجاهزية قبل إعداد تقرير التقييم الذاتي

آلية عمل لمراجعة الجاهزية:

تشكيل لجنة في القسم تتولى الآتي:

1. الاطلاع على اصدارات المجلس ذات الصلة.
2. جمع المعلومات اللازمة لاستبانة مراجعة الجاهزية.
3. تحليل المعلومات وتبويبها على وفق فقرات الاستبانة وتحديد الفجوة.
4. دراسة أوجه القصور وتحديد ما يلزم لمعالجة نقاط الضعف وتعزيز نقاط القوة.
5. تحديد الأولويات في ضوء الموارد المتاحة ودرجة الحاجة.
6. وضع خطة التحسين في ضوء الفرص المتاحة والقيود المفروضة (التهديدات).
7. تحديد أهداف واضحة للخطة، ذات سقوف زمنية، مع مؤشرات قياس مدى تحققها.
8. تحديد المسؤولين عن تنفيذ كل فقرة في الخطة.
9. مصادقة مجلس القسم على الخطة واصدار أوامر التكليف للمنفذين.

4	المعيار الرابع: التحسين المستمر:		
1-4	هل يجري قياس مباشر لمحصلات التعلم المتحققة؟		نماذج اختبارات (Rubric) للطلبة.
	هل يجري قياس غير مباشر للمحصلات المتحققة؟		نماذج من الاستبانات.
	هل هناك تواتر لعمليات القياس بنوعيها أعلاه؟		الجداول الزمنية.
	هل هناك مستوى مخطط لتحقق محصلات الخريجين؟		قرار المستوى المنشود.
	هل يتم تحليل وتقييم نتائج القياس بنوعيها أعلاه؟		بيانات التحليل والتقييم.
	هل يتم توثيق عمليات القياس والتحليل والتقييم؟		نماذج من التوثيق.
2-4	هل يتم توظيف النتائج أعلاه في رسم خطة التحسين؟		نسخة من الخطة تبين الكيفية والآلية.
	هل يجري إعادة القياس بعد التحسين لفحص الجدوى؟		نماذج من عملية إعادة القياس.
	هل يتم توظيف النتائج المستجدة في خطة مستقبلية؟		نسخة من الخطة المستقبلية.
	هل تحدد مبررات الخطة المستقبلية (نتائج منشودة).		نسخة من مبررات الخطة المستقبلية.
	هل يتم توثيق عمليات التخطيط والتحسين المستمر؟		نماذج من التوثيق.
5	المعيار الخامس: الطلبة:		
1-5	هل هناك ضوابط لقبول وتسجيل الطلبة؟		متطلبات القبول واجراءات التسجيل.
	هل مستوى الطلبة المقبولين يناسب البرنامج؟		معدلات الطلبة لخمس سنوات مضت.
	هل يتوافق العدد المقبول مع الطاقة الاستيعابية؟		مقارنة بين العدد المخطط والفعلي.
2-5	هل هناك نظام لمتابعة السيرة الدراسية وتقييم الأداء؟		توثيقات اللجنة الامتحانية.
3-5	هل هناك ضوابط لانتقال الطلبة؟		نماذج من المقاصة وتعليماتها.
4-5	هل يمارس الإرشاد النفسي والأكاديمي والمهني؟		تقارير ومحاضر.
4-5	هل هناك نشاطات لا صفية (أدبية، فنية، رياضية ..)؟		تقارير ومحاضر.
5-5	هل يجري ضبط استيفاء الطلبة لمتطلبات التخرج؟		نماذج من وثائق التخرج.
6	المعيار السادس: هيئة التدريس:		
1-6	هل تفي مؤهلات هيئة التدريس لتنفيذ البرنامج؟		ملء جدول (6-1) وسيرهم الذاتية.
	هل يمتلك مدرسي مواد التصميم خبرة ميدانية؟		المشاريع التي قاموا بتصميمها.
2-6	هل يفي عبء التدريسيين الموجه للبرنامج، بالغرض؟		ملء جدول (6-2).
3-6	هل يفي عدد التدريسيين للتفاعل المطلوب مع الطلبة؟		نسبة تدريسي/طالب.
4-6	هل يجري تطوير مختلف مهارات هيئة التدريس؟		نشاطات التطوير لخمس سنوات خلت.
5-6	هل يجري اشراك التدريسيين في صنع القرارات؟		أمثلة تبين المسؤوليات والصلاحيات.

دليل (3-3-7)

الاستمارة الخاصة بالخطة العلمية الشاملة لاقسام وفروع تشكيلات جامعة النهرين للعام الدراسي (2023-2024)

اولا:- نبذة عن القسم العلمي تتضمن (الرؤية والرسالة والاهداف)

ثانيا:- معلومات عن القسم العلمي

1- سنة استحداث القسم:- 1988
2- اسم رئيس القسم الحالي:- أ.د. مصعب عايد كصب
3- اسم مقرر القسم:- م. دعاء عبدالرزاق فالح
4- اعضاء الهيئة التدريسية في القسم العلمي وحسب الجدول المدرج في ادناه:-

ت	الاسم مع اللقب العلمي	الشهادة الحاصل عليها	الاختصاص العام	الاختصاص الدقيق	البريد الالكتروني الرسمي
1	أ.د. عبد العزيز عبدالرسول عزيز	دكتوراه	هندسة مدنية	جيوتكنيك	Abdulazeez.A.Azeez@ced.nahrainuniv.edu.iq
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3	أ.د. عادل عبد الامير محمد سعيد	دكتوراه	هندسة مدنية	انشاءات	Adel.Abdul-Ameer@ced.nahrainuniv.edu.iq
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5	أ.د. فائق محمد سرحان	دكتوراه	هندسة مدنية	ادارة مشاريع	Faiq.M.Al-Zwainy@ced.nahrainuniv.edu.iq
6	أ.د.علاء حسين عبد	دكتوراه	هندسة مدنية	طرق ومواصلات	Alaa.H.Abed@ced.nahrainuniv.edu.iq
7	أ.د. محمود صالح مهدي علوان	دكتوراه	هندسة مدنية	موارد هندسة مائية	mahmoud.s.al-khafaji@nahrainuniv.edu.iq
8	أ.د. احمد سلطان علي	دكتوراه	هندسة مدنية	مواد بناء	Ahmed.s.ali@nahrainuniv.edu.iq
9	أ. عباس جواد عبد الحسين	ماجستير	هندسة مدنية	ميكانيك تربة وهندسة اسس	Abbas.j.al-taie@ced.nahrainuniv.edu.iq
10	أ.د. مصعب عايد كصب	دكتوراه	هندسة مدنية	انشاءات	Musab.A.Jindeel@ced.nahrainuniv.edu.iq
11	أ.د. محمد عبد الخالق ابراهيم	دكتوراه	هندسة مدنية	بيئة	Mohammed.A.Ibrahim@ced.nahrainuniv.edu.iq
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13	أ.م.د أسماء ثامر أبراهيم	دكتوراه	هندسة مدنية	طرق ومطارات	Asma.th.ibraheem@nahrainuniv.edu.iq
14	أ.م.د.ليث خالد كامل حسن	دكتوراه	هندسة مدنية	انشاءات	Laith.Kh.Al-Hadithy@ced.nahrainuniv.edu.iq
15	أ.م.د.حسام كاظم رسن	دكتوراه	هندسة مدنية	انشاءات	Hussam.K.Risan@ced.nahrainuniv.edu.iq
16	أ.م.د.ابراهيم سليم ابراهيم	دكتوراه	هندسة مدنية	انشاءات	ibrahim.s.ibrahim@nahrainuniv.edu.iq
17	أ.م.د.احمد فالح احمد فاضل	دكتوراه	هندسة مدنية	انشاءات	Ahmed.f.al-bayati@nahrainuniv.edu.iq
18	أ.م.د.عبدالخالق جبار عبدالرضا	دكتوراه	هندسة مدنية	انشاءات	Abdulkhalik.J.AbdulRidha@ced.nahrainuniv.edu.iq
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20	ا.م.د.عمر شمال فرحان	دكتوراه	هندسة مدنية	انشاءات	
21	ا.م.د.رائد احمد داود	دكتوراه	هندسة مدنية	انشاءات	Raid.A.Daud@ced.nahrainuniv.edu.iq
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24	ا.م.د.سلطان احمد داود	دكتوراه	هندسة مدنية	انشاءات	sultan.a.daud@ced.nahrainuniv.edu.iq
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26	أ.م.خالده احمد داود	ماجستير	هندسة مدنية	جيوتكنيك	Khalida.a.daud@ced.nahrainuniv.edu.iq
28	م.د.محمد علي اكرم شعبان	دكتوراه	هندسة مدنية	بيئة	Mohammed.a.akram@ced.nahrainuniv.edu.iq
29	م.د.امنة طلال عبد الحميد	دكتوراه	هندسة مدنية	طرق ومواصلات	Amenah.t.albadri@nahrainuniv.edu.iq
31	م.د.احمد هادي عبد الرحيم	دكتوراه	هندسة مدنية	انشاءات	Ahmed.h.abdulraheem@nahrainuniv.edu.iq

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	انشاءات	هندسة مدنية	دكتوراه	م.د.مصطفى حميد فرحان	34
Dhiaa.m.theeban@ced.nahrainuniv.edu.iq	انشاءات	هندسة مدنية	دكتوراه	م.د.ضياء مصطفى ذيبان	35
Ahmed.a.mustafa@nahrainuniv.edu.iq	انشاءات	هندسة مدنية	دكتوراه	م.د.احمد عبد الحافظ مصطفى	36
Mohammed.assi@ced.nahrainuniv.edu.iq	طرق ومواصلات	هندسة مدنية	دكتوراه	م.د. محمد عاصي عبد	37
Rana.i.zaki@ced.nahrainuniv.edu.iq	انشاءات	هندسة مدنية	ماجستير	م.رنا إسماعيل خليل	39
Azhar.s.yasun@nahrainuniv.edu.iq	جيوتكنيك	هندسة مدنية	ماجستير	م. ازهر صادق ياسين	40
	انشاءات	هندسة مدنية	ماجستير	م. زاهر نوري محمد تقي	41
Duaa.a.al-jeznawi@ced.nahrainuniv.edu.iq	جيوتكنيك	هندسة مدنية	ماجستير	م. دعاء عبدالرزاق فالح	42
Hawraa.s.jawad@ced.nahrainuniv.edu.iq	مواد بناء	هندسة مدنية	ماجستير	م.م.حوراء سعيد جواد	43
Hiba.i.jalil@ced.nahrainuniv.edu.iq	انشاءات	هندسة مدنية	ماجستير	م.م. هبة عماد عباس	44
Saba.wais@ced.nahrainuniv.edu.iq	بيئة	هندسة مدنية	ماجستير	م.م.صبا ويس حاجم	45
Noora.s.faraj@ced.nahrainuniv.edu.iq	بيئة	هندسة مدنية	ماجستير	م.م. نورة سعد فرج	46
Ruba.h.majeed@ced.nahrainuniv.edu.iq	جيوتكنيك	هندسة مدنية	ماجستير	م.م.ربى حنا مجيد	47
	انشاءات	هندسة مدنية	ماجستير	م.م.الاء وليد حميد	50

رئيس اللجنة العلمية — عضو اللجنة العلمية — عضو اللجنة العلمية

مصادقة مجلس الكلية — عميد الكلية — رئيس القسم

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جامعة النهريـــن
كليـة الهندســـة
قسم الهندسة المدنية
العـــدد : هـ .ن.م.د/ ٤٠٩
التاريخ : ١١/ ١٠/ ٢٠٢٣

الى/ السيد معاون العميد للشؤون العلمية والطلبة المحترم

م/ الاستمارة الخاصة بخطة الاقسام والفروع العلمية

تحية طيبة ....

اشارة الى كتابكم ذي العدد هـ.ن./2015/4/2 في 2023/08/20 والمتضمن تزويدكم بالخطة البحثية لقسم الهندسة المدنية وحسب الجدول المرفق طي كتابكم أعلاه، نرافق لكم الخطة البحثية للقسم للعام الدراسي 2023 -2024.

للتفضل بالاطلاع.. مع التقدير

المرفقات//

- نسخة من كتاب جامعة النهرين المشار اليه في اعلاه
- نسخة الكترونية وورقية من استمارة الخطة

أ.د. مصعب عايد كصب

رئيس قسم الهندسة المدنية

نسخة منه الى

- الملف .. للحفظ رجاءا

Republic of Iraq
Ministry of Higher Education
& Scientific Research
Al-Nahrain University / College of Engineering
Dean Assistant Office for Scientific Affairs

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين / كلية الهندسة
مكتب معاون العميد للشؤون العلمية

العدد: هـ ن./٢/٤/ ٢٠١٥

التاريخ: ٢٠٢٣/٨/٢٠

السادة رؤوساء الاقسام العلمية المحترمون

م / اعمام

تحية طيبة .....

نُرافق لكم طياً كتاب جامعة النهرين / قسم الشؤون العلمية والعلاقات الثقافية / شعبة الشؤون العلمية بالعدد (٩٠٨) في (٢٠٢٣/٧/٣١) ، للتفضل بالاطلاع واجابتنا وفق الجداول المرفقة وعلى قرص CDومطبوعة بصيغة WORD بالاضافة الى نسخة ورقية وبالتواقيع اسفل كل جدول وكما هو مطلوب ، على ان تردنا الاجابة في موعد اقصاه ٢٠٢٣/١٠/١.

مع التقدير.

المرفقات :- كتاب جامعة النهرين / قسم شؤون الشؤون العلمية والعلاقات الثقافية / شعبة الشؤون العلمية ذي العدد (٩٠٨) في (٢٠٢٣/٧/٣١) .

السيد المقرر / أ.م.د. ... المحترم
لاعتماد ... وفق الموعد المحدد
٢٠٢٣/٨/...

أ.د. نصير عبود عيسى الحبوبي
معاون العميد للشؤون العلمية
٢٠ /اب/٢٠٢٣

نسخة منه الى/
- السيد العميد المحترم //للتفضل بالاطلاع ...... مع التقدير.
- شعبة الشؤون العلمية والعلاقات الثقافية .
- الملف .

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2	علي هادي صالح		
3	منار حسين جبر		
4	محمد مصطفى عسر	Analysis and design of water tank using Staad Pro software	م.د. احمد هادي عبدالرحيم
5	محمد عبد الحليم جاسم		
6	مولود محمد مولود		
7	علي بسام ابراهيم	Effect of Moisture Damage on Asphalt Concrete Mixtures	م.د. احمد فرحان مويز
8	مصطفى قحطان عدنان		
9	احمد ستار احمد		
10	نور خضر عباس	Analysis and design of high-rise buildings exposed to earthquakes using ETABS and SAFE programs	م. زاهر نوري محمد تقي
11	علي عباس محسن		
12	احمد محمد خلف		
13	ايلاف حازم محمد	Computing bearing capacity for raft foundation	م. ازهر صادق ياسين
14	بنين محمد ثامر		
15	حيدر احمد عبد الرسول		
16	علي كامل هاشم	Design of R.C. Slabs Using Different Methods	م.م. هبة عباس عماد
17	رسل اكرم صادق		
18	علي اكرم كاظم		
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20	زهراء عباس شريف		
21	طارق صفاء		
22	محمد عبد السلام علي	Effect of mortar thickness on the compressive strength of clay brick walls	م.م. علي كاظم
23	حسن احمد ثامر		
24	عمر اركان حامد		
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2	احمد عدنان ذياب		
3	علي محمد عبد الامير		
4	عبدالله فراس مهدي	Analysis and Design of Industrial Portal Frame Steel Building using Computer Aids	أ.م.د. سلطان احمد داود
5	عبدالله علي نعيم		
6	عبد المجيد قاسم شيحان		
7	سراج اوسام	Analysis and design of multi-story building	ا.م.د. زينة رياض صالح
8	حميد سرمد		
9	محمد جاسم		
10	زين العابدين رعد كطوف	Soil improvement using waste rubber material	أ.م. خالده احمد داود
11	محمد رياض ستار		
12	نبأ محمد عبدالزهرة		
13	محمد حيدر حواس	Design R.C Building subjected to wind and seismic load using computer programs and developed excel sheets	د. زهير خضر علاوي
14	سيف عبدالكريم جاسم		
15	عبدالله محمد عبدالكريم		
16	محمد قاسم محمد	PCA application in predicting section reinforcements.	م.د. الاء وليد حميد
17	حسين مقداد ابراهيم		
18	حسن هادي صبر		
19	حسنين محمد	Behavioral comparison of different columns arrangements and layouts	م.د. الاء وليد حميد
20	ايه سعد		
21	محمد عبد الرحيم		
22	امنة حامد عبد	Mechanical Properties of Plastic Aggregate Concrete: An Eco-Friendly concrete for construction	د. مصطفى حميد فرحان
23	ميار مازن جاسب		
25	عمر عبدالهادي رحيم	Study of using different coagulants to remove water turbidity	م. نوره سعد فرج
26	طيبه عبدالقادر حميد		
27	رامي اكريم		
27	روان انمار سالم	Lightweight aggregate concrete using crashed brick as a recycled material	م.م علي كاظم حسن
28	روان رياض مكي		
29	غسق مؤيد عبدالكريم		
30	طالب خالد خضير	Flexural Behavior of foam concrete composite Beam	م.م. قتيبة عبد الهادي
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32	عبد الله عامر محمد		
33	ابراهيم احمد ابراهيم	Effective of concrete compressive strength on bond properties between steel reinforcement and concrete cylinder	أ.م.د. رائد احمد داوود
34	زينب احمد طالب		

عضو اللجنة العلمية — عضو اللجنة العلمية — رئيس اللجنة العلمية

رئيس القسم — عميد الكلية — مصادقة مجلس الكلية

قسم الهندسة المدنية - الخطة البحثية للعام الدراسي 2023-2024

ت	اسم التدريسي او الباحث	عنوان النشاط	المدة اللازمة لانجاز البحث	الجهات المستفيدة من البحث
1	أ.د. جبار حمود البيضاني	A New Calculation Method for BOD Kinetic Parameters	1 سنة	- وزارة البيئة - وزارة الموارد المائية
		Evaluation of the Operational Performance of Karbala Waste Water Treatment Plant Under Variable flow using GPS-X Model	1 سنة	- وزارة البيئة - وزارة الموارد المائية
		Evaluation the Effluent Concentrations of Karbala Wastewater Treatment Plant Using Reliability Analysis	1 سنة	- وزارة البيئة - وزارة الموارد المائية
2	أ. د. احمد سلطان علي الخالدي	Characterizing and Modeling the Properties of Self-Compacting Concrete Modified with Waste Tires Rubbers as a Aggregates	1 سنة	وزارة الاعمار والاسكان
		The effect of a partial replacement of GGBFS on the Rheological properties of oil well cement slurries	1 سنة	وزارة الاعمار والاسكان
3	أ.د. حاتم عبد الكريم	PPP Implementation Challenges in Iraq	1 سنة	وزارة التخطيط
4	أ.م.د. ضياء مصطفى ذيبان	Optimization of Indeterminate Flexural under non-loading effects	1 سنة	وزارة الاعمار والاسكان
5	أ.م. د. اسماء ثامر ابراهيم	WESTERGAARD APPROACH AND A NEW DEVELOPMENT SOFTWARE FOR ANALYZING RIGID PAVEMENT BEHAVIOR	1 سنة	وزارة الاعمار والاسكان
		Unveiling the Promise of Natural Zeolites: Enhancing Concrete Properties	1 سنة	وزارة الاعمار والاسكان
		REVIEW ON TRANSPORTATION ENGINEERING USING GIS (GEOGRAPHIC INFORMATION SYSTEM)	1 سنة	وزارة الاعمار والاسكان
		Studying the optimum location of an international airport using a multi criteria decision making by	1 سنة	وزارة الاعمار والاسكان

ت	اسم التدريسي او الباحث	عنوان النشاط	المدة اللازمة لانجاز البحث	الجهات المستفيدة من البحث
		GIS		
		Analyzing the Effect of Soil Stabilization on Rigid Pavement Joint under Different Axles	1 سنة	وزارة الاعمار والاسكان
		STUDY THE EFFECT OF AXLE LOAD TYPES ON STRUCTURAL RESPONSE OF RIGID PAVEMENT	1 سنة	وزارة الاعمار والاسكان
		Sustainable Road Paving: Enhancing Concrete Paver Blocks with Zeolite-Enhanced Cement	1 سنة	وزارة الاعمار والاسكان
6	م. دعاء عبد الرزاق فالح الجيزناوي	Seismic Response of Oil Pipeline by Using Fiber-Reinforced Polymer Piles	1 سنة	وزارة الاعمار والاسكان
		Seismic Response of Pile Groups: A comprehensive review	1 سنة	وزارة الاعمار والاسكان
		Developing Vs-NSPT Prediction Models for Iraqi Soils Using Bayesian Framework	1 سنة	وزارة الاعمار والاسكان
		Novel Explicit Models to Predict the Frictional Resistance of Pipe Piles under Seismic Excitation	1 سنة	وزارة الاعمار والاسكان
		Response of Pile Groups Subjected to Coupled Vertical-Eccentric Lateral- Seismic Loads	1 سنة	وزارة الاعمار والاسكان
		Seismic Response Assessment of Tapered Piles in Sandy Soils: A Numerical Investigation	1 سنة	وزارة الاعمار والاسكان
		Application of Offspring Selection Genetic Algorithm on Sustainable Concrete Strength Prediction	1 سنة	وزارة الاعمار والاسكان
7	أ. د. قاسيون سعدالدين محمدشفيق	Improvement of Oil Pipelines Settlement using Fiber Reinforced Polymer Piles	1 سنة	وزارة النفط
		Assessment of Dynamic Properties of Different Types of Iraqi Soils using GIS	1 سنة	وزارة الاعمار والاسكان
		Seismic Ground Response for Various Soils using DEEPSOIL	1 سنة	وزارة الاعمار والاسكان
		Seismic Behavior of Shallow Foundation on Geogrid Reinforced Soil	1 سنة	وزارة الاعمار والاسكان

الجهات المستفيدة من البحث	المدة اللازمة لانجاز البحث	عنوان النشاط	اسم التدريسي او الباحث	ت
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وزارة الاعمار والاسكان	1 سنة	Enhancement the Properties of Iraqi Gypseous Soil by adding Polymers		
وزارة الاعمار والاسكان	1 سنة	The Behavior of Reinforced Lightweight Concrete Beams with Initial Cracks	أ.م. د. عبدالخالق جبار عبدالرضا	8
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وزارة الاعمار والاسكان	1 سنة	Cast-in-place anchors to concrete with a bearing plate: a finite element analysis		
وزارة الاعمار والاسكان	1 سنة	Numerical Analysis of Prefabricated Cage-Reinforced Composite Beams		
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وزارة الاعمار والاسكان	1 سنة	Behavior of lightweight aggregate Wide Reinforced Concrete Beams with Shear Steel Plates under repeated		

ت	اسم التدريسي او الباحث	عنوان النشاط	المدة اللازمة لانجاز البحث	الجهات المستفيدة من البحث
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		The investigation of best design to a residential unit	1 سنة	وزارة الاعمار والاسكان
11	م.د.ياسر محمود كاظم	Effect of relative stiffness of the superstructure and foundation soil on the soil – structure interaction	1 سنة	وزارة الاعمار والاسكان
12	د. أحمد عبد الحافظ	Numerical Analysis of Prefabricated Cage-Reinforced Composite Beams	1 سنة	وزارة الاعمار والاسكان
		Nonlinear finite element analysis of steel moment-resisting frames with Shear Fuse under Seismic Loading	1 سنة	وزارة الاعمار والاسكان
		Cast-in-place anchors to concrete with a bearing plate: a finite element analysis	1 سنة	وزارة الاعمار والاسكان
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13	أ.م. د. هيثم علاء حسين الشامي	Gathered Sediment Transport Studies of Tigris River at Baghdad Sarai Station	1 سنة	وزارة الموارد المائية
		Gathered Sediment Transport Studies of Tigris River at Baghdad Sarai Station	1 سنة	وزارة الموارد المائية
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		Hydrological characteristics of the Tigris River at the Baghdad Sarai station	1 سنة	وزارة الموارد المائية
14	أ.م. د. رائد أحمد داوود	Numerical Investigation of Hybrid reinforced Concrete Corbels	1 سنة	وزارة الاعمار والاسكان

الجهات المستفيدة من البحث	المدة اللازمة لانجاز البحث	عنوان النشاط	اسم التدريسي او الباحث	ت
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وزارة الاعمار والاسكان	1 سنة	Steel and composite connection in fire review		
وزارة الاعمار والاسكان	1 سنة	"Analyzing Composite Concrete-Steel Arch Beams: A Numerical Investigation"		
وزارة الاعمار والاسكان	1 سنة	Torsional Buckling behavior of High-Strength Castellated curved Steel Beams"		
وزارة الاعمار والاسكان	1 سنة	Torsional Buckling behavior of High-Strength Castellated Steel Beams		
وزارة الاعمار والاسكان	1 سنة	Flextural behaviour of strengthend Reinforced green Concrete beams		
وزارة الاعمار والاسكان	1 سنة	Evaluation of different anchorage systems for externally bonded CFRP with concrete	م. د. احمد هادي عبد الرحيم ال عبد ويس	15
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وزارة الاعمار والاسكان	1 سنة	Numerical Investigation of Hybrid reinforced Concrete Corbels	م.د. مصطفى حميد فرحان	16
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وزارة الاعمار والاسكان	1 سنة	Exploring Torsional Buckling in High-Strength Castellated curved Steel Beams		
وزارة الاعمار والاسكان	1 سنة	Steel and composite connection in fire review		
وزارة الاعمار والاسكان	1 سنة	Impact Loading of Slabs on Elastic Foundations: A Review		
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الجهات المستفيدة من البحث	المدة اللازمة لانجاز البحث	عنوان النشاط	اسم التدريسي او الباحث	ت
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وزارة الاعمار والاسكان	1 سنة	Performance Evaluation of Asphalt Concrete Mixtures with Recycled Bitumen		
وزارة الاعمار والاسكان	1 سنة	Sustainable Rehabilitation of Asphalt Pavements: Utilizing Waste Oils as Rejuvenators for Enhanced Durability and Environmental Benefits		
وزارة الاعمار والاسكان	1 سنة	Developing A Computer Program for Analyzing Rigid Frame Using Stiffens Matrix Method	م.م. هبة عماد عباس	18
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وزارة البيئة	1 سنة	"Adsorbent Material for Environmental Contaminant Remediation: Mechanisms and Applications"		
وزارة البيئة	1 سنة	Removal of dyes from aqueous solutions		
وزارة الكهرباء	1 سنة	Optimal power flow using OE algorithm to minimize active power losses and enhance voltage stability	م. م. مسره جلاء يحيى	20

عضو اللجنة العلمية
م.د. حيدر محمد الصفاني

عضو اللجنة العلمية

رئيس اللجنة العلمية

رئيس القسم
٢٠٢٣/١٠/١١
أ.د. رحيم عابد كريم

عميد الكلية

مصادقة مجلس الكلية

جامعة النهرين/ كلية الهندسة

قسم الهندسة المدنية

خطة مشاريع طلبة الدراسات العليا / الدور الاول / للعام الدراسي 2023-2024

التسلسل	اسم الطالب	نوع المشروع	عنوان المشروع	اسم المشرف
1	هدى خالص كريم علي	دكتوراه	Study the Stability of Shallow Footing under Seismic Loading	ا.د.عبد العزيز عبد الرسول عزيز
2	علي فرحان حميدي	دكتوراه	Performance of under Reamed Pile in Expansive Soil	ا.د.عبد العزيز عبد الرسول عزيز
3	زين العابدين حسين عطا حنش	ماجستير	Improvement of Unsaturated Gypseous Sand using Cohesive Soil	ا.د.عبد العزيز عبد الرسول عزيز
4	نور عادل اسماعيل مصطفى	دكتوراه	Behavior of high-performance concrete pavements under earthquakes	ا.د.عادل عبد الامير محمد سعيد العزاوي
5	طه اديب عبد علي حميد	ماجستير	Structural Performance of Steel Frames under Successive Earthquakes with Different Column Base Flexibility	ا.د.عادل عبد الامير محمد سعيد العزاوي
6	علي مزهر مظلوم	دكتوراه	Improving stability of Earth dam affected by seepage	أ.د. عبد العزيز عبد الرسول عزيز + أ.د. صالح عيسى خصاف
7	علي محمد داود سلمان	دكتوراه	Experimental study for liquefaction remediation of foundation soils under the structures using polymer injection method	ا.د.قاسيون سعدالدين محمد شفيق
8	ازهر صادق ياسين محمد	دكتوراه	Experimental Study for Improving the Bearing Capacity and Installation Efficiency of Piles in Soft Soils using Electro-Osmosis Method	ا.د.قاسيون سعدالدين محمد شفيق + ا.د. ايرول كولار
9	صفا علي حسين احمد	دكتوراه	Evaluating a sustainable grout for semiflexible pavement material	ا.د.علاء حسين عبد حافظ + ا.د.علي عبد الامير علوش
10	اشراق مهدي لطيف جاسم	دكتوراه	Development of the efficient transportation Strategies toward sustainable Indicators in Baghdad City	ا.د.علاء حسين عبد حافظ + ا.م.د.نور معتز اسماعيل

جامعة النهرين/ كلية الهندسة

قسم الهندسة المدنية

خطة مشاريع طلبة الدراسات العليا / الدور الاول / للعام الدراسي 2023-2024

التسلسل	اسم الطالب	نوع المشروع	عنوان المشروع	اسم المشرف
11	اسامة حسن جفات	دكتوراه	Modeling and Predicting HMA Performance Produced with Different Types of Polymers and Waste Materials	ا. باسم حسن شناوة + ا.د.علاء حسين عبد حافظ
12	زين العابدين سرحان حسين نجم	ماجستير	Performance Evaluation of The SBS Modified Asphalt Concrete Mixtures Under Varying Field Aging Condition	ا.د.علاء حسين عبد حافظ
13	قتادة عبود احمد عوض	ماجستير	An Artificial Intelligence-Based Model for optimal Management of Tigris River in Baghdad Utilizing A Smart Barrages System	أ.د. محمود صالح مهدي + أ.د. ضياء الجميلي
14	زياد مجيد موسى جاسم	ماجستير	Cost-Efficiency Comparative Evaluation of Open and Closed Water Conveyance System in Semi-Arid Regions	ا.د.محمود صالح مهدي
15	زينة هادي مفتن شتيت	دكتوراه	Enhancement of Soft Soil by Geogrid Reinforcement Combined with Bio-Cementation System	ا.د.محمد يوسف فتاح + ا.د.محمد عبد الخالق ابراهيم
16	دنيا ليث سعود رحيم	ماجستير	Behavior of Lightweight Reinforced Concrete Concavely-Curved Soffit Beams Strengthened with CFRP	ا.د.ابراهيم سليم ابراهيم
17	تمارا علاء خلف جزع	ماجستير	Behavior of Damaged Lightweight Reinforced Concrete Wide Beams with Near Surface Mounted GFRP Bars under Monotonic and Repeated Loadings	ا.د.ابراهيم سليم ابراهيم
18	علاء محسن حمد خلف	دكتوراه	Study the performance of pavements subbase layer stabilized with geosynthetic reinforcement and sustainable enhanced Zeolite-cement	ا.م.د.اسماء ثامر ابراهيم جاسم +ا.د.احمد سلطان علي محمد
19	تمارا حسين يوسف بني عطا	دكتوراه	Reliability Evaluation of Sustainable Rigid Pavement Structure and Rehabilitation Decision Making	ا.م.د.اسماء ثامر ابراهيم جاسم المنتفك
20	عمر كريم علي محمد	دكتوراه	Experimental study of influence of the height for multi-story building load on the seismic response of pile group foundation in sandy soil	ا.م.د.ليث خالد كامل حسن الحديثي

جامعة النهرين/ كلية الهندسة

قسم الهندسة المدنية

خطة مشاريع طلبة الدراسات العليا / الدور الاول / للعام الدراسي 2023-2024

التسلسل	اسم الطالب	نوع المشروع	عنوان المشروع	اسم المشرف
21	صفاء عبد الحسن حمدان عبد الله	دكتوراه	Seismic Performance Improvement of Unreinforced Masonry Buildings via Subsequent RC Secondary Frames	ا.م.د.ليث خالد كامل حسن الحديثي
22	مريم قاسم محمد جاسم	ماجستير	Inelastic Response of Lightweight Concrete Filled Steel Tubular Composite Members under Monotonic and Repeated Pure Shear Loads	ا.م.د.ليث خالد كامل حسن الحديثي
23	رشا جمال علي عبد الحسين	ماجستير	Shear Mechanism of Steel Fiber Reinforced Concrete One-Way Slabs under Concentrated Load	ا.م.د.احمد فالح احمد فاضل
24	فاطمة علي صادق ابراهيم	ماجستير	Hydraulic assessment on proposed spillway in Makhool dam	ا.م.د.هيثم علاء حسين الشامي
25	منيب سلام عمران محسن	دكتوراه	Mitigating Premature Moisture Damage in Asphalt Concrete Pavement	ا.م.د.حسن موسى جواد عزيز الموسوي
26	شهد محمود خليل	دكتوراه	Management of Traffic Congestion Using Smart Transportation: Baghdad Network As A Case Study	ا.م.د.حامد احمد عواد + ا.م.د.حسن موسى جواد عزيز
27	سمير عباس جاسم محمد	دكتوراه	The Possibility of Minimizing Premature Reflection Cracking of Asphalt Concrete Overlay	ا.م.د.حسن موسى جواد عزيز الموسوي
28	سامر مؤيد عبد المجيد جمعة	دكتوراه	Investigation of Asphalt Concrete Bond Strength Effect on Pavement Constitutive Behavior at the Interface	ا.م.د.حسن موسى جواد عزيز + ا.م.د.نك توم
29	داليا علاء الدين عبد المجيد جاسم	ماجستير	Investigation of Long –Term Behavior and Performance of Wide Beams with Recycled Aggregate Concrete using Nonlinear Finite Element Analysis	ا.م.د.سلطان احمد داود سلمان
30	رفل احمد هادي خلف	دكتوراه	Shear Rehabilitation of Damaged RC Beams using Embedded Through- Section FRP Bars Technique	ا.م.د.رائد احمد داود سلمان

جامعة النهرين/ كلية الهندسة

قسم الهندسة المدنية

خطة مشاريع طلبة الدراسات العليا / الدور الاول / للعام الدراسي 2023-2024

التسلسل	اسم الطالب	نوع المشروع	عنوان المشروع	اسم المشرف
31	احمد وليد نقي غلام	ماجستير	Shear Behavior of Plastic Aggregate Concrete Beams Strengthened using Embedded Through-Section CFRP Bars Technique	ا.م.د.رائد احمد داود سلمان
32	هديل خالد خلف حمد	ماجستير	Structural performance of constructed RC beams using innovative materials under shear load	ا.م.د.زينة رياض صلاح
33	نور محمد سهيل محمد	ماجستير	Direct Shear Capacity of Concrete Reinforced with Longitudinal Fiber Reinforced Polymer Bars	م.د. زهير خضر علاوي
34	ريام حماد خلف شايع	ماجستير	Investigating Polymer-Modified High-Performance Asphalt Mixtures Enhanced with Epoxy Resin through Laboratory Analysis	م.د. محمد عاصي عبد
35	حيدر عواد علي فهد	ماجستير	Flexural Behavior of Concrete-Filled Steel Tube (CFST) Members with Initial Imperfections	م.د.احمد عبد الحافظ مصطفى

ا.د.مصعب عايد كصب

رئيس قسم الهندسة المدنية

١١/ ١٠/ ٢٠٢٣

ا.د.عبد العزيز عبد الرسول عزيز

رئيس اللجنة العلمية

مصادقة مجلس القسم

مصادقة مجلس االكلية

امر اداري

/ ايفاد

استناداً الى الامر الجامعي ذي العدد ٢٩/٢/٣ المؤرخ في ٢٠٢٤/١/٢ والمتضمن ايفاد الاستاذ الدكتور عبدالعزيز عبدالرسول عزيز التدريسي على ملاك كليتنا / قسم الهندسة المدنية الى محافظة النجف الاشرف / جامعة الكوفة للزيارة الميدانية لكلية الهندسة / الجامعة اعلاه للنظر في موضوع دراسة الدكتوراه في تخصص هندسة جيوتكنك / قسم الهندسة المدنية ، و استناداً الى الصلاحيات المخولة لنا تقرر:

- ايفاد الموما اليه الى محافظة النجف الاشرف ، على ان لاتتحمل الكلية اي تبعات مالية .

أ.د جمعة سلمان جياد
عميد الكلية
٩ / كانون الثاني/٢٠٢٤

نسخة من الى/

- مكتب معاون العميد للشؤون الادارية ..للتفضل بألاطلاع مع التقدير.
- قسم الهندسة المدنية ..اعلامنا تاريخ الانفكاك والمباشرة.
- شعبة الموارد البشرية/ وحدة الافراد..للعلم.
- شعبة الشؤون المالية..للعلم.
- شعبة الرقابة والتدقيق الداخلي..للعلم.
- الاضبارة الشخصية..مع الاوليات .مع التقدير.

يثرب ٢٠٢٤/١/٨

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جامعة النهرين / كلية الهندسة
العراق - بغداد - الجادرية - ص. ب: ٦٤٠٤٠

امر اداري

م / ايفاد

استناداً الى الامر الجامعي ذي العدد ٣٣٧٣/٢/٣ المؤرخ في ٢٠٢٤/٢/٢٦ المتضمن ايفاد الاستاذ المساعد الدكتور مصطفى حميد فرحان رضا التدريسي على ملاك كليتنا / قسم الهندسة المدنية المكلف بأدارة شعبة التأهيل والتوظيف والمتابعة في رئاسة جامعة النهرين الى محافظة النجف الاشرف / جامعة الكوفة لحضور دورة اعداد المدربين في طرائق التدريس والمنضوي تحت البرنامج الحكومي ضمن برنامج (تطوير دورات طرائق التدريس في الجامعات العراقية نحو تعلم المدمج) لمدة اسبوعين للفترة (١٩ ،٢٠٢٤/٢/٢٥ وللفترة ٤ ،٢٠٢٤/٣/١٠) عدا ايام السفر ، استناداً الى الصلاحيات المخولة لنا تقرر:

- ايفاد الموما اليه الى محافظة النجف الاشرف / جامعة الكوفة للفترة اعلاه ويكون الصرف وفقاً لاحكام قانون السفر والايفاد رقم(٣٨) لسنة ١٩٨٠المعدل.

ا. للاعتماد
! للاخ الموما اليه
٢٠٢٤/٣/١٢

أ.د جمعة سلمان جياد
عميد الكلية
١٢ / آذار /٢٠٢٤

نسخة من الى/
- مكتب معاون العميد للشوون الادارية ..للتفضل بألاطلاع مع التقدير.
- قسم الهندسة المدنية
- شعبة الموارد البشرية/ وحدة الافراد.
- شعبة الشؤون المالية..
- شعبة الرقابة والتدقيق الداخلي..
- الاضبارة الشخصية..مع الاوليات .مع التقدير.

يثرب ٢٠٢٤/٣/١٠

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جامعة النهرين / كلية الهندسة
العراق - بغداد - الجادرية - ص. ب: ٦٤٠٤٠

جامعة النهرين
قسم الشؤون العلمية
والعلاقات الثقافية

التاريخ: ١٩/٢/٢٤

العدد: م/ع/٢٩٨١

أمر جامعي

استنادا الى الامر الوزاري المرقم (ص ب/٥٨٤٥ في ٢٠٢٤/٢/١١) الصادر من وزارة التعليم العالي والبحث العلمي /دائرة البعثات والعلاقات الثقافية ، والصلاحيات المخولة لنا ، تقرر منح المدرس الدكتور (احمد هادي عبد الرحيم) /التدريسي في كلية الهندسة بجامعتنا تفرغا علميا للمنحة البحثية في الجامعة الامريكية في الشارقة في دولة الامارات العربية المتحدة على وفق تعليمات التفرغ العلمي رقم ١٦٢ لسنة ٢٠٠٩ وضوابط المنح البحثية للتدريسي المتفرغ علميا لمدة سنة واحدة لانجاز بحثين في مجال التخصص وبدءا من تاريخ الانفكاك خلال العام الدراسي ٢٠٢٤/٢٠٢٣ على ان لاتتحمل الوزارة اية تبعات مالية .

م. الدوائر

أ.د. علي عبد العزيز الشاوي
رئيس الجامعة
٢٠٢٤/٢/١٨

نسخة منه الى /

- وزارة التعليم العالي والبحث العلمي / دائرة البعثات والعلاقات الثقافية/ اشارة الى امركم الوزاري المشار اليه في اعلاه ...مع التقدير.
- مكتب السيد رئيس الجامعة / للتفضل بالاطلاع ..مع التقدير.
- مكتب السيد مساعد رئيس الجامعة للشؤون العلمية/ للتفضل بالاطلاع ... مع التقدير .
- مكتب السيد مساعد رئيس الجامعة للشؤون الادارية /للتفضل بالاطلاع ...مع التقدير.
- كلية الهندسة /نرافق لكم طيا الامر الوزاري المشار اليه /للتفضل بالاطلاع وتزويدنا بامر الانفكاك والكفالة المالية المصدقة حسب الضوابط .. مع التقدير
- قسم الشؤون الادارية والمالية / للتفضل بالاطلاع ... مع التقدير.
- قسم الشؤون القانونية / للتفضل بالاطلاع ...مع التقدير .
- قسم الرقابة والتدقيق الداخلي / للتفضل بالاطلاع ...مع التقدير.
- الصادرة .

م. البشرية

Maha Azeez 13/2/2024

العدد: هـ ن/١/١/ ١٩٩٩
التاريخ: ٣ / ٤ / ٢٠٢٤

٧١
٤/٢

أمـــر إداري

م/ ترقية الى مرتبة (استاذ مساعد)

استـنادًا الــى الأمــر الجــامعي ذي العــدد (٤٥٨٩/٩/١) فــي ٢٠٢٤/٣/١٩، والــى الصلاحيات المخولة لنا تقرر: -

١-ترقيـة المـدرس الـدكتور(**زهيـر خضـر عـلاوي**) التدريسـي علـى مـلاك كليتنـا / قسـم الهندسـة المدنيـة فــي تخصـص **هندسـة مدنيـة - هندسـة الانشـاءات** الــى مرتبـة (**استاذ مساعد**) ابتـداءً مـن تـاريخ تقـديم الطلـب فـي ٢٠٢٣/٣/٢٩ اسـتنادًا الـى تعليمـات الترقيـات العلميـة رقـم ١٦٧ لسـنة ٢٠١٧ علـى أن لا يترتـب علـى ذلـك ايـة تبعـات ماليـة قبـل صـدور الأمر الجامعي اعلاه.

٢-يمـنح مخصصـات اللقـب العلمـي والبالغـة (٣٥)% مـن الراتـب الاسـمي اسـتنادًا الـى احكـام قانون الخدمة الجامعية رقم (٢٣) لسنة ٢٠٠٨ المعدل.

٣-ينفذ هذا الأمر ابتداءً من تاريخ صدور الأمر الجامعي في ٢٠٢٤/٣/١٩.

أ.د. جمعة سلمان جياد
العميد
/نيسان/٢٠٢٤

نسخة عنه /

- السيد معاون العميد للشؤون الإدارية المحترم .. للتفضل بالاطلاع .. مع التقدير.
- قسم الهندسة المدنية .. للتفضل بالاطلاع .. مع التقدير.
- الاستاذ المسـاعد الـدكتور(زهيـر خضيـر عـلاوي) / مبـارك .. مـع التهـاني ودعاءنـا لكـم بالموفقيـة فـي مسـيرتكم العلمية..مع التقدير.
- الشعبة الإدارية والمالية / الحسابات / لاتخاذ مايلزم .. مع التقدير.
- الشعبة الإدارية والمالية / الافراد / مع الاوليات .. مع التقدير.
- شعبة الرقابة والتدقيق .. للتفضل بالاطلاع .. مع التقدير.
- شعبة الدراسات والتخطيط / للتأشير..لطفًا.
- امانة مجلس الكلية..للتفضل بالاطلاع .. مع التقدير.
- الاضبارة الشخصية / للحفظ..لطفًا.

منى ٢٠٢٤/٤/١

جامعة النهرين
كلية الهندسة
مكتب العميد

العدد: هـ ن/١/٢/٥٤٨ التاريخ: ٤ / ٥ / ٢٠٢٣

وزارة التخطيط / الهيأة العراقية الأعتماد

م/ ترشيح

تحية طيبة ...

نرشح السادة المدرجة أسماؤهم أدناه من منتسبي قسم الهندسة المدنية في كليتنا للمشاركة بالدورة الموسومة :

تطبيق المواصفة الدولية (ISO/IEC 17025/2017) واعداد وثائق نظام الجودة لإدارة المختبرات (دليل الجودة والإجراءات)

والتي ستقام للفترة من (٧ – ٢٠٢٣/٥/١١) ، تفضلكم بالإطلاع وتزويدنا بتأريخ مباشرتهم مع كتاب تأييد المشاركة ، وذلك لأغراض التوثيق الإداري.

مع التقدير

<u>الأسـماء :</u>

١- **المهندس فاروق رعد سعد الله**
٢- **المهندسة آيات حسين مجيد**

أ.د. باسم عبيد حسن
العميـد
٤ / أيار /٢٠٢٣

أ.د. عاصم المحترم
للعلم ومتابعة الموضوع رجاءً
٢٠٢٣/٥/٧

نسخة منه الى /
مكتب السيد العميد / للتفضل بالإطلاع... مع التقدير.
السيدين معاوني العميد / مع التقدير.
قسم الهندسة المدنية / مع التقدير.
أمانة مجلس الكلية.

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جامعة النهرين / كلية الهندسة
العراق - بغداد - الجادرية - ص.ب : ٦٤٠٤٠

المعيار الثامن
الدعم المالي

جامعة النهرين

كلية الهندسة

قسم الهندسة المدنية

مضمون المعيار الثامن ضمن تقرير التقييم الذاتي للاعتماد البرامجي

المعيار الثامن: الدعم المالي

ان المعيار يبين مدى كفاية الفقرات الاتية لتمكين الطلبة في البرنامج من اكتساب محصلات الخريجين

الغاية:

اثبات كفاية الدعم المالي للبرنامج من خلال التخصيصات المالية المتوفرة لضمان سير التعليم والتعلم، واقامة وصيانة المرافق والتجهيزات ورواتب ومستحقات هيئة التدريسين والموظفين، وتلبية احتياجات البرنامج الاخرى وان يكون موثقا بشكل جيد.

8-1: مصادر التمويل

ان مصادر التمويل في الكلية مقسمة الى ثلاثة ابواب (نفقة خاصة وتشمل المبالغ المدفوعة من قبل الطلبة المسجلين على النفقة الخاصة، والتعليم الموازي وتشمل المبالغ المدفوعة من قبل الطلبة المسجلين على قناة التعليم الموازي ، والواردات وتشمل المبالغ المدفوعة على الوثائق والتعليم المستمر والية التعاون وتقديم الاستشارات عن طريق المكتب الاستشاري) وتستند المصادر اعلاه على تعليمات والضوابط الاصولية لصندوق التعليم العالي وتبويبات الصرف المقرة وكان مجموع الايرادات لسنة 2023 هو (597644715) خمسمائة وسبعة وتسعون مليون وستمائة واربعة واربعون الف وسبعمائة وخمسة عشر دينار، وان مصادر التمويل اعلاه تمتلك الاستمرارية بسبب استمرارية قنوات القبول ووجود مركز تعليم المستمر في الكلية بما يضمن استمرارية الدعم المالي للبرنامج الاعتماد البرامجي ويتم الصرف وفق ما موضح ادناه استنادا لتبويبات الصرف المقرة ضمن صندوق التعليم العالي

- كتاب المعاون الاداري وتقرير اللجنة المشكلة لغرض اعداد المعيار الثامن والموافق مع هذا التقرير

2-8: التخصيصات المالية للبرنامج

ان الواردات اعلاه تم تقسيمها استنادا لتبويبات الصرف المقرة وفق تعليمات صندوق التعليم العالي وبما يتلائم من كفاية التخصيصات المالية للبرنامج لاقتناء وصيانة وتحديث التجهيزات وتلبية احتياجات البرنامج من مرافق وتدريسين وموظفين ومتطلبات عمليات التعليم والتعلم الاخرى وكانت المبالغ المرصودة وفق الجدول ادناه وحسب احتياجات الاقسام العلمية

الخلاصة المبالغ المصروفة على الاقسام العلمية كلية الهندسة / لسنة ٢٠٢٣

الاقسام العلمية	الات و المعدات (اجهزة مشترية)	اثاث و اجهزة	وقود و زيوت	متنوعة (الوظيفية)	خدمة صيانة	طباعة و طبع وضيافة	نقل و ايفاد و اتصالات (اشتراك الانترنت)	استجار بناية	مصروفات خدمية	المجموع المبلغ المصروف لكل قسم
هندسة الكهرباء	517,222	8,986,277	533,333	4,118,832	2,193,552	833,333	1,393,333	0	0	18,575,882
هندسة الحاسوب	517,222	10,786,277	533,333	4,180,832	2,678,552	833,333	1,393,333	0	0	20,922,882
هندسة النفط	13,867,222	15,065,277	533,333	5,195,832	5,964,802	833,333	1,393,333	0	0	42,853,132
هندسة الميكانيك	7,347,222	12,206,277	533,333	13,660,332	17,396,652	833,333	1,393,333	0	372,000	53,742,382
هندسة الطب الحياتي	517,222	8,986,277	533,333	4,790,832	3,406,052	833,333	1,393,333	0	0	20,460,382
هندسة الكيمياوي	14,679,722	20,426,277	533,333	4,688,832	6,251,552	833,333	1,393,333	0	0	48,806,382
هندسة الاقمار الصناعية	1,492,222	9,181,277	533,333	5,785,832	15,711,552	833,333	1,393,333	0	0	34,930,882
هندسة المدني	8,371,222	9,236,277	533,333	9,482,832	5,103,552	833,333	1,393,333	0	3,321,000	38,274,882
هندسة العمارة	517,222	11,851,277	533,333	3,861,221	5,789,052	0	833,333	1,393,333	0	24,778,771
المجموع	47,826,498	106,725,493	4,799,997	55,765,377	64,495,218	6,666,664	11,979,997	1,393,333	3,693,000	
المجموع الكلي	303,345,577									

- كتاب المعاون الاداري وتقرير اللجنة المشكلة لغرض اعداد المعيار الثامن والموافق مع هذا التقرير

1-2-8 الدعم المالي للتعليم والتعلم

من خلال التقرير اعلاه يتبين بان المبالغ المصروفة وفق التبويبات المقرة كانت (303345577) ثلاثمائة وثلاثة ملايين وثلاثمائة وخمسة واربعون الف دينار عراقي وخمسمائة وسبعة وسبعون دينار اي بتسجيل فائض يدور على السنة التالية مقداره (294299138) مئتان واربعة وتسعون مليون ومئتان وتسعة وتسعون الف ومئة وثمانية وثلاثنون دينار

- كتاب المعاون الاداري وتقرير اللجنة المشكلة لغرض اعداد المعيار الثامن والموافق مع هذا التقرير

8-2-2 الدعم المالي للمنشاءت والتجهيزات

استنادا لقيود الصرف وقوائم التبويبات لسنة 2023 فان قسم الهندسة المدنية سجل صرف المبالغ التالية

اولا: مبلغ (8،371،222) لشراء المستلزمات والاجهزة المختبرية لدعم انشطة التعليم والتعلم

ثانيا: مبلغ (5،103،552) لصيانة المستلزمات والاجهزة المختبرية وصيانة البنى التحتية للكلية والقسم

ثالثا: مبلغ (9،236،277) عن شراء مستلزمات وتوفير البيئة التعليمية المناسبة من اثاث ورحلات دراسية وشاشات عرض ولوازم مكتبية اخرى.

رابعا: مبلغ (9،482،832) عن شراء القرطاسية وللوازم الاخرى لدعم انشطة التعليم والتعلم

- كتاب المعاون الاداري وتقرير اللجنة المشكلة لغرض اعداد المعيار الثامن والموافق مع هذا التقرير

8-2-3 الدعم المالي لهيئة التدريس

وتم صرف مبلغ (1،393،333) عن نقل وايفاد لغرض تطوير منتسبي القسم من تدريس وبشكل مستمر من خلال الاطلاع عن نتاجات البحث العلمي الحديثة والتواصل مع المراكز العلمية العالمية ونشر نتاجات القسم

- كتاب المعاون الاداري وتقرير اللجنة المشكلة لغرض اعداد المعيار الثامن والموافق مع هذا التقرير

8-2-4 الدعم المالي للموظفين

ويمثل الدعم المالي من قبل المؤسسة لتطوير كهارات الموظفين والفنين والاداريين بشكل مستمر ويتم تطبيق ذلك من خلال مشاركة الكادر الاداري في دورات التعليم المستمر لغرض تطوير وتعلم

اعداد:

ا.م.د. رائد احمد داود

ا.م.د ضياء مصطفى ذيبان

م.د. احمد فرحان التميمي

الخلاصة المبالغ المصروفة على الاقسام العلمية كلية الهندسة / لسنة ٢٠٢٣

الاقسام العلمية	الات و المعدات (اجهزة مختبرية)	اثاث و اجهزة	وقود و زيوت	متنوعة (القرطاسية)	خدمة صيانة	دعاية و طبع وضيافة	نقل و ايفاد و اتصالات (اشتراك الانترنيت)	استنجار م.ثابتة	مصروفات خدمية	المجموع المبلغ المصروف لكل قسم
هندسة ألكترون	517,222	8,986,277	533,333	4,118,832	2,193,552	833,333	1,393,333	0	0	18,575,882
هندسة الحاسوب	517,222	10,786,277	533,333	4,180,832	2,678,552	833,333	1,393,333	0	0	20,922,882
هندسة الليزر	13,867,222	15,065,277	533,333	5,195,832	5,964,802	833,333	1,393,333	0	0	42,853,132
هندسة الميكانيك	7,347,222	12,206,277	533,333	13,660,332	17,396,552	833,333	1,393,333	0	372,000	53,742,382
هندسة الطب الحياتي	517,222	8,986,277	533,333	4,790,832	3,406,052	833,333	1,393,333	0	0	20,460,382
هندسة الكيمياوي	14,679,722	20,426,277	533,333	4,688,832	6,251,552	833,333	1,393,333	0	0	48,806,382
هندسة الاطراف و مساند صناعية	1,492,222	9,181,277	533,333	5,785,832	15,711,552	833,333	1,393,333	0	0	34,930,882
هندسة المدني	8,371,222	9,236,277	533,333	9,482,832	5,103,552	833,333	1,393,333	0	3,321,000	38,274,882
هندسة العمارة	517,222	11,851,277	533,333	3,861,221	5,789,052	0	833,333	1,393,333	0	24,778,771
المجموع	47,826,498	106,725,493	4,799,997	55,765,377	64,495,218	6,666,664	11,979,997	1,393,333	3,693,000	
المجموع الكلي	303,345,577									

مجموع الايرادات (٥٩٧,٦٤٤٧١٥) د.ع

معدل نمو الايرادات و المصاريف لسنة ٢٠٢٤	
مجموع الايراد لسنة ٢٠٢٣	معدل النمو لسنة ٢٠٢٤
٥٩٧,٦٤٤,٧١٥	٦٥٧,٤٠٩,١٨٧
مجموع المصاريف لسنة ٢٠٢٣	معدل النمو لسنة ٢٠٢٤
٣٠٣,٣٤٥,٥٧٧	٣٣٣,٦٨٠,١٣٥

المبالغ المصروفة على قسم مدني / لسنة ٢٠٢٣

	الات و المعدات (اجهزة مختبرية)	اثاث و اجهزة	وقود و زيوت	متنوعة (القرطاسية)	خدمة صيانة	خدمات ابحاث و استشارات (اجور محاضرات)	دعاية و طبع وضيافة	نقل و ايفاد و اتصالات (اشتراك الانترنيت)	استنجار م.ثابتة	مصروفات خدمية
	517,222	798,500	533,333	1,033,333	215,555		833,333	1,393,333		3,321,000
	7,854,000	1,031,111		558,611	897,777					
		7,090,000		783,000	229,777					
		250,000		158,000	2,150,000					
		66,666		250,000	166,666					
				144,000	1,000,000					
				204,611	443,777					
				3,905,000						
				625,000						
				549,555						
				510,000						
				761,722						
المجموع	8,371,222	9,236,277	533,333	9,482,832	5,103,552	0	833,333	1,393,333	0	3,321,000

المعيار التاسع
المرافق والتسهيلات

المعيار التاسع / (غرف العمل المكتبي وتجهيزاتها)
دليل (1-9)

جامعة النهرين
كلية الهندسة
استمارة جرد الغرف الجرد السنوي لعام 2023 تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7
القسم / الشعبة : الهندسة المدنية البناية : E 213
الطابق : الثاني
اسم شاغل الغرفة : د. ليث خالد 1-9

ت	اسم المادة	العدد	وصف المادة	الملاحظات
.1	منضدة مكتب خشب بلوط نوع D	1		
.2	مكتبة صغيرة خشب بلوط نوع D	1		
.3	مكتبة خشب بلوط كبيرة نوع D	1		
.4	دولاب خشب بلوط كبير ذو باب واحد	1		
.5	ثلاجة صغيرة نوع CONCORD	1		
.6	مصباح منضدي	1		
.7	سبورة بيضاء صغيرة	1		
.8	جهاز تبريد سبلت يونيت نوع SAMSUNG	1		
.9	كرسي متحرك دوار ذو مساند مبطن بالجلد	2		
.10	كرسي متحرك دوار ذو مساند مبطن بالقماش	1		
.11	كرسي ثابت بدون مساند مبطن بالقماش	2		
.12	كرسي ثابت خشب بلوط ذو مساند مبطن بالقماش	2		
.13	منضدة حاسبة	1		
.14	UPS نوع MERCURY	1		
.15	طابعة نوع canon LBP 810	1		
.16	حاسبة مع ملحقاتها شاشة COMPAG كيس COMPAG كي بورد COMPAG ماوس COMPAG	 1 1 1 1		
.17	ستول متحرك بدون مساند مبطن بالقماش	1		
.18	جهاز هاتف محلي الصنع	1		
.19	حاسبة LAP TOP	1		
.20	منضدة مكتب اجنبي الصنع	1		
.21	شاشة العرض	1		

عضو	عضو	عضو	رئيس اللجنة
م. مهندس لؤي حسن جبار	م. مهندس ايات حسين مجيد	ر. ملاحظين علي لطيف عاصي	م. مهندس فاروق رعد سعدالله
/ /2024	/ /2024	/ /2024	/ /2024

توقيع شاغلي الغرفة:

جامعة النهرين
كلية الهندسة
استمارة جرد الغرف الجرد السنوي لعام 2023 تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

القسم / الشعبة : الهندسة المدنية
البناية : E 211
اسم شاغل الغرفة : د. عبد العزيز عبد الرسول
الطابق : الثاني

ت	اسم المادة	العدد	وصف المادة	الملاحظات
1	منضدة خشب بلوط نوع D	1		
2	مكتبة صغيرة خشب بلوط نوع D	1		
3	مكتبة خشب بلوط كبير D	1		
4	مكتبة خشب ذات بابين مزججة	1		
5	سجادة قياس 3 * 4 م	1		
6	ثلاجة صغيرة نوع concord	1		
7	مروحة عمودية نوع TORNO	1		
8	شمعة تعليق ملابس	1		
9	جهاز تبريد سبلت يونيت نوع westair	1		
10	جهاز هاتف عراقي	1		
11	كرسي متحرك دوار ذو مساند مبطن بالقماش	2		عاطل
12	كرسي خشب بلوط ذو مساند مبطن بالقماش	2		
13	منضدة حاسبة	2		
14	حاسبة مع ملحقاتها كيس LG شاشة دايو ماوس Perfect كي بورد LG	 1 1 1 1		عاطلة
15	حاسبة Lap Top	1		
16	منضدة مكتب اجنبية الصنع ذات مجرات	2		
17	كرسي متحرك دوار ذو مساند مبطن بالجلد	2		واحد عاطل

عضو	عضو	عضو	رئيس اللجنة
م. مهندس لؤي حسن جبار	م. مهندس ايات حسين مجيد	ر. ملاحظين علي لطيف عاصي	م. مهندس فاروق رعد سعدالله
/ /2024	/ /2024	/ /2024	/ /2024

توقيع شاغلي الغرفة:

جامعة النهرين
كلية الهندسة
استمارة جرد الغرف الجرد السنوي لعام 2023 تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7
البناية : E 201
الطابق : الثاني
القسم / الشعبة : الهندسة المدنية
اسم شاغل الغرفة : د. محمد علي + م.م. زاهر نوري

ت	اسم المادة	العدد	وصف المادة	الملاحظات
1	منضدة مكتب بلوط نوع D	1		
2	مكتبة صغيرة بلوط نوع D	2		
3	مكتبة كبيرة بلوط نوع D	1		
4	مكيف هواء شباكي نوع General	1		
5	ثلاجة صغيرة نوع Concord	1		
6	مكتبة خشب ذات رفوف صاج	1		
7	سبورة زيتية صغيرة	1		
8	مصباح منضدي	1		
9	كرسي متحرك دوار ذو مساند مبطن بالجلد	1		
10	كرسي متحرك دوار ذو مساند مبطن بالقماش	2		
11	كرسي ثابت بدون مساند مبطن بالقماش	2		
12	شمعة تعليق ملابس	1		
13	مدفأة كهربائية ثلاث شمعات نوع LUXELL	1		
14	منضدة مكتب خشب ذات مجرات	1		
15	منضدة حاسبة	1		
16	جهاز هاتف نوع بانوسونك	1		
17	حاسبة لاب توب	1		
18	كيس LG	1		
19	مروحة عمودية نوع gorang	1		

رئيس اللجنة
م. مهندس فاروق رعد سعدالله
/ 2024/

عضو
ر. ملاحظين علي لطيف عاصي
/ 2024/

عضو
م. مهندس ايات حسين مجيد
/ 2024/

عضو
م. مهندس لؤي حسن جبار
/ 2024/

توقيع شاغلي الغرفة:

جامعة النهرين
كلية الهندسة
استمارة جرد الغرف الجرد السنوي لعام 2023 تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7
البناية : E 212
القسم / الشعبة : الهندسة المدنية
الطابق : الثاني
اسم شاغل الغرفة : ا.م. عباس جواد عبدالحسين + م م . محمد عاصي

ت	اسم المادة	العدد	وصف المادة	الملاحظات
1	منضدة مكتب اجنبي الصنع ذات مجرات مع الملحق	1		
2	مكتبة صغيرة بلوط نوع D	1		
3	مكتبة خشب صاج ذات بابين مزججة	1		
4	منضدة حاسبة	1		
5	مروحة عمودية نوع TORNADO	1		
6	جهاز تبريد سبلت يونيت SAMAUNG	1		
7	مصباح منضدي	1		
8	كرسي متحرك دوار ذو مساند مبطن بالجلد	1		
9	كرسي متحرك دوار ذو مساند مبطن بالقماش	1		
10	كرسي خشب بلوط ذو مساند جانبية مبطن بالقماش	2		
11	جهاز هاتف محلي الصنع	1		
12	سبورة بيضاء صغيرة	1		
13	كرسي ثابت بدون مساند مبطن بالقماش	2		
14	حاسبة مع ملحقاتها كيس نوع COMPAQ شاشة نوع COMPAQ كي بورد life ماوس COMPAQ	2		
15	Ups نوع Pack	1 1 1 1 1		
16	كرسي ثابت ذو مساند ارجل معدنية مبطن بالقماش	1		
17	حاسبة LAP TOP	1		
18	مدفأة كهربائية شمعتان Luxel	1		

عضو	عضو	عضو	رئيس اللجنة
م. مهندس لؤي حسن جبار	م. مهندس ايات حسين مجيد	ر. ملاحظين علي لطيف عاصي	م. مهندس فاروق رعد سعدالله
/ /2024	/ /2024	/ /2024	/ /2024

توقيع شاغلي الغرفة:

جامعة النهرين
كلية الهندسة
استمارة جرد الغرف الجرد السنوي لعام 2023 تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

القسم / الشعبة : الهندسة المدنية البناية : E 206
اسم شاغل الغرفة : د . قاسيون سعد الدين + د. عادل عبد الأمير الطابق : الثاني

ت	اسم المادة	العدد	وصف المادة	الملاحظات
1	منضدة مكتب بلوط نوع D	2		
2	مكتبة صغيرة بلوط نوع D	2		
3	مكتبة كبيرة بلوط نوع D	2		
4	شمعة تعليق ملابس	1		
5	جهاز هاتف panasonic	1		
6	مكيف هواء شباكي عراقي نسيم الرافدين	1		
7	منضدة حاسبة	1		
8	مروحة عمودية نوع TORNADO	1		
9	ثلاجة صغيرة نوع concord	1		
10	كرسي ثابت ذو مساند مبطن بالقماش	3		
11	كرسي متحرك دوار ذو مساند مبطن بالقماش	2		
12	Ups نوع mercury	1	عاطل	
13	حاسبة مع ملحقاتها شاشة LG ماوس LG كي بورد LG كيس LG	 1 1 1 1		
14	سبورة زيتية صغيرة بيضاء	1		
15	حاسبة لابتوب	1		

عضو
م. مهندس لؤي حسن جبار
2024/ /

عضو
م. مهندس ايات حسين مجيد
2024/ /

عضو
ر. ملاحظين علي لطيف عاصي
2024/ /

رئيس اللجنة
م. مهندس فاروق رعد سعدالله
2024/ /

توقيع شاغلي الغرفة:

المعيار التاسع / النموذج من القاعات الدراسية وتجهيزاتها .
دليل (٩-١)

جامعة النهرين
كلية الهندسة
استمارة جرد الغرف الجرد السنوي لعام 2023 تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

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القسم / الشعبة : الهندسة المدنية البناية : D007
اسم شاغل الغرفة : قاعة محاضرات الطابق :االأرضي

ت	اسم المادة	العدد	وصف المادة	الملاحظات
1	منضدة اجتماعات ذات غطاء زجاجي	1		
2	كاربت 6*4	1		
3	جهاز تبريد سبلت يونيت نوع Craft	1		
4	شاشة عرض الكترونية نوع SAMSUNG	1		
5	منضدة حاسبة	2		
6	طبلة مربعة صغيرة	1		
7	كرسي بلاستك	4		
8	كرسي متحرك دوار ذو مساند مبطن بالقماش	5		
9	كرسي ثابت ارجل معدنية ذو مساند مبطن بالجلد	1		
10	حاسبة مع ملحقاتها شاشة دايو كي بورد دسكفوري كيس دسكفوري ماوس DELL	1 1 1 1 1		
11	طابعة كانون	1		
12	دولاب خشب ذو بابين مزجج	1		
13	قنفة معدنية ثلاثة مقاعد مبطنة بالجلد	1		
14	ups	1		

عضو	عضو	عضو	رئيس اللجنة
م.مهندس لؤي حسن جبار	م.مهندس آيات حسين مجيد	ر.ملاحظين فني علي لطيف عاصي	م. مهندس فاروق رعد سعدالله
/ /2024	/ /2024	/ /2024	/ /2024

توقيع شاغلي الغرفة:

المعيار التاسع / نموذج 2 من المختبرات وتجهيزاتها ومتطلباتها

جامعة النهرين / كلية الهندسة دليل (1-9)

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر الانشاءات)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7 9-1

اسم المادة و وصفها	الموجود بموجب السجلات	الكمية	الموجود بموجب الجرد الفعلي	الكمية	المطابقة		الحالة		العاطل	الملاحظات
					مطابق	غير مطابق	زيادة	نقص		
Compression Loading frame- Mechanical hydraulic jack جهاز ضغط صغير 100 kN	1	1	1	1	✓					يحتاج صيانة ومعايرة
Main Crane -Brun كرين جسري معلق مع الكنترول	1	1	1	1	✓					
Portable Hydraulic crane كرين صغير متنقل يدوي	1	1	1	1	✓					
Loading Cell – Rinstrum N320 تحمل 225 Tons	1	1	1	1	✓					
Loading Cell- Rinstrum R320	1	1	1	1	✓					
Loading Cell – ELE تحمل 500 Tons	1	1	1	1	✓					يحتاج صيانة ومعايرة
Impact loading Frame- Local Manufacturing جهاز فحص تحمل نتيجة السقوط الحر للاحمال	1	1	1	1	✓					غير كامل
كاميرا كانون نوع AE1	1	1	1	1	✓					كاميرا كانون نوعAE1
ستاند كاميرا	1	1	1	1	✓					

عضو	عضو	عضو	رئيس اللجنة
م.مهندس لؤي حسن جبار	م.مهندس ايات حسين مجيد	ر.ملاحظين فني علي لطيف عاصي	م.مهندس فاروق رعد سعدالله
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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر الانشاءات)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

اسم المادة و وصفها	الموجود بموجب السجلات	الكمية	الموجود بموجب الجرد الفعلي	الكمية	المطابقة		الحالة		العاطل	الملاحظات
					مطابق	غير مطابق	زيادة	نقص		
احواض 1م * 1م *2م مغلون كيج 16 ملم	2	2	2	2	✓					
قوالب معدنية	3	3	3	3	✓					خاصة بمشاريع طلبة الدراسات العليا
قاعدة ماسكة Digital Dial gage زرقاء اللون	1	1	1	1	✓					

عضو
م.مهندس لؤي حسن جبار
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/ /

رئيس اللجنة
م.مهندس فاروق رعد سعدالله
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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر الانشاءات)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

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					مطابق	غير مطابق	زيادة	نقص		
Ultrasonic System for Identifying Basic Characteristics of Coarse Grained Material- Matest جهاز فحص الخرسانة بالموجات	1	1	1	1	✓					
Non-Destructive Testing System- Matest –Italy مطرقة غير اتلافية	1	1	1	1	✓					
CORE EXTRACTOR (Gloz)	1	1	1	1	✓					
CORE EXTRACTOR FUJITA (Japan)	1	1	1	1	✓					
قوالب حديد لصب الكونكريت	3	3	3	3	✓				عاطل	خاصة بطلبة الدراسات العليا
TML STRAIN GAUGE CLAMP GAUGE MATE	11	11	11	11	✓					خاصة لبحوث الدراسات العليا
Digital Indicator (INSIZE)	2	2	2	2	✓					خاصة لبحوث الدراسات العليا
TOOL Kit	2	2	2	2	✓					عدة خاصة ببحوث الدراسات العليا
خباطة كونكريت نوع omaer ايطالي الصنع	1	1	1	1	✓					

عضو	عضو	عضو	رئيس اللجنة
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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر الانشاءات)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

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					مطابق	غير مطابق	زيادة	نقص		
Rebar Testing Machine- ALFA جهاز فحص الشد لقضبان حديد التسليح 8-25 mm bar diameter	1	1	1	1	✓					
Rebar Testing Machine- Chine-SANS1000 kN جهاز فحص الشد لقضبان حديد التسليح	1	1	1	1	✓					عاطل
Data Logger – TML قارئالانفعالوالازاحات	1	1	1	1	✓					
LVDT –TML with cable led-TRANSDUSER مفياس الازاحات الكهربائي	8	8	8	8	✓					
Flexural Machine for Plain Concrete Prism- MATEST TREVIOLO-ITALY جهاز فحص الانحناء للعتبات الغير مسلحه	1	1	1	1	✓					

عضو
م.مهندس لؤي حسن جبار
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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر الانشاءات)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

اسم المادة و وصفها	الموجود بموجب السجلات	الكمية	الموجود بموجب الجرد الفعلي	الكمية	المطابقة		الحالة		العاطل	الملاحظات
					مطابق	غير مطابق	زيادة	نقص		
Compression Machine for plain concrete cubic and cylinders-ELE جهاز فحص انضغاط للمكعبات والاسطوانات الخرسانية.	2	2	2	2	✓					
Compression Machine for plain concrete cubic and cylinders- MATEST TREVIOLO-ITALY جهاز فحص انضغاط للمكعبات والاسطوانات الخرسانية.	1	1	1	1	✓					
Compression Machine for plain concrete cubic and cylinders- BUDENBERG-ELE جهاز فحص انضغاط للمكعبات والاسطوانات الخرسانية.	1	1	1	1	✓					بحاجة الى صيانة

عضو
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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر الانشاءات)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

اسم المادة و وصفها	الموجود بموجب السجلات	الكمية	الموجود بموجب الجرد الفعلي	الكمية	المطابقة		الحالة		العاطل	الملاحظات
					مطابق	غير مطابق	زيادة	نقص		
Crack Microscope مجهر التشقق	1	1	1	1	✓					
Crack Microscope مجهر التشقق	2	2	2	2	✓					قديم الصنع
Bar and Cover Detector- Proceq جهاز تحسس قضبان الحديد والكفر الخرساني	1	1	1	1	✓					
Bar and Cover Detector –Proceq جهاز تحسس قضبان الحديد والكفر الخرساني	1	1	1	1	✓					قديم الصنع
Concrete Test Hammer –ELE مطرقة شمث	5	5	5	5	✓				1	
Ultrasonic System for Identifying Basic Characteristics of Coarse Grained Material- James Instruments INC. جهاز فحص الخرسانة بالموجات	1	1	1	1	✓					

عضو
م.مهندس لؤي حسن جبار
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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر الانشاءات)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

اسم المادة و وصفها	الموجود بموجب السجلات	الكمية	الموجود بموجب الجرد الفعلي	الكمية	المطابقة		الحالة		العاطل	الملاحظات
					مطابق	غير مطابق	زيادة	نقص		
Automatic Compression and flexural machine جهاز فحص الانضغاط والانحناء	1	1	1	1	✓					يحتاج صيانة ومعايرة
Loading Frame هيكيلتحميل200 طن	1	1	1	1	✓					
Loading Frame هيكيلتحميل100طن مع حاسبة portable نوع hp(core-2 inside . windows vista خاصة بالجهاز	1	1	1	1	✓					
Compression loading frame with Electrical hydraulic jack جهاز ضغط مع هيكل تحميل kN 1000	1	1	1	1	✓					يحتاج صيانة ومعايرة
Compression loading frame with Electrical hydraulic jack جهاز ضغط مع هيكل تحميل kN 500	1	1	1	1	✓					يحتاج صيانة ومعايرة

عضو	عضو	عضو	رئيس اللجنة
م.مهندس لؤي حسن جبار	م.مهندس ايات حسين مجيد	ر.ملاحظين فني علي لطيف عاصي	م.مهندس فاروق رعد سعدالله
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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر التربة)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

اسم المادة و وصفها	الموجود بموجب السجلات	الكمية	الموجود بموجب الجرد الفعلي	الكمية	المطابقة		الحالة		العاطل	الملاحظات
					مطابق	غير مطابق	زيادة	نقص		
wash bottle	6	6	6	6	✓					
حمالة سحاحة	1	1	1	1	✓					
حمالة قمع	1	1	1	1	✓					
ماسكة	2	2	2	2	✓					
سحاحة	3	3	3	3	✓					
سلندر 250مل	6	6	6	6	✓					
سلندر زجاجي 100مل	4	4	4	4	✓					
كيونيكل 500 مل	6	6	6	6	✓					
كيونيكل 250 مل	6	6	6	6	✓					
بيكر 500 مل	3	3	3	3	✓					
بيكر 100 مل	4	4	4	4	✓					
جفنة خزفية	1	1	1	1	✓					
حامض HCL 1 لتر	1	1	1	1	✓					
volumetric flask (500Ml)	8	8	8	8	✓					
volumetric flask(100mL)	1	1	1	1	✓					
منشار كهربائي	1	1	1	1	✓					
منشار تخريم كهربائي	1	1	1	1	✓					
دريل براغي	1	1	1	1	✓					
قزمة	2	2	2	2	✓					
مجرفة	2	2	2	2	✓					
مضخة ماء	2	2	2	2	✓					
مطرقة متنوعة	4	4	4	4	✓					
عربة دفع	5	5	5	5	✓					
قبان بناء	3	3	3	3	✓					
سكول سبانة	2	2	2	2	✓					

عضو	عضو	عضو	رئيس اللجنة
م.مهندس لؤي حسن جبار	م.مهندس ايات حسين مجيد	ر.ملاحظين فني علي لطيف عاصي	م.مهندس فاروق رعد سعدالله
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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر التربة)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

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					مطابق	غير مطابق	زيادة	نقص		
THERMOMETER (محرار زجاجي)	4	4	4	4	✓					
ELECTRIC MIXER (خلاط كهربائي)	2	2	2	2	✓					
STRAIN GUAGEE HOLDER (حوامل مقياس الانفعال)	10	10	10	10	✓					
PROVING RING UNKNOWN	4	4	4	4	✓					
Gas/Water Pressure system for triaxial test apparatus (نظام ضغط ماء المرتبط بجهاز فحص القص ثلاثي المحاور) UNKNOWN	1	1	1	1	✓					
mold 4 inch with hummer	2	2	2	2	✓					
mold 6 inch with hummer	2	2	2	2	✓					
weights set of 100kg total weight	2	2	2	2	✓					
اسطوانة مدرجة	5	5	5	5	✓					

عضو	عضو	عضو	رئيس اللجنة
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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر التربة)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

اسم المادة و وصفها	الموجود بموجب السجلات	الكمية	الموجود بموجب الجرد الفعلي	الكمية	المطابقة		الحالة		العاطل	الملاحظات
					مطابق	غير مطابق	زيادة	نقص		
A complete set of Drained and Undrained Triaxial. Oil/Water Pressure System.(جهاز فحص القص ثلاثي المحاور سعة 50 triaxial load frame	2	2	2	2	✓					
A complete set of .direct shear test (جهاز القص المباشر) سعة 60 mm square specimen	1	1	1	1	✓					
direct shear test (shear-Tronic)) (جهاز القص المباشر)	1	1	1	1	✓					
direct shear test (جهاز القص المباشر)	1	1	1	1	✓					
A complete set of one dimensional consolidation test (فحص الانضمام احادي الذراع) 50mm specimen	4	4	4	4	✓					
اسطوانة هيدروميتر	5	5	5	5	✓					
بكنوميتر خاص بالوزن النوعي سعة 100 مل	5	5	5	5	✓					

عضو	عضو	عضو	رئيس اللجنة
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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر التربة)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

اسم المادة و وصفها	الموجود بموجب السجلات	الكمية	الموجود بموجب الجرد الفعلي	الكمية	المطابقة		الحالة		العاطل	الملاحظات
					مطابق	غير مطابق	زيادة	نقص		
A complete set of one dimensional consolidation test) فحص الانضمام احادي الذراع) 75 mm specimen	1	1	1	1	✓					
A complete set of constant head permeability test (جهاز فحص النفاذية) cell 75mm diameter .specimen	2	2	2	2	✓					
A complete set of one dimensional consolidation test 4-Arms)) (جهاز فحص انضمام رباعي الاذرع)	1	1	1	1	✓				عاطل	
POCKET PENETROMETER	1	1	1	1	✓					
UNCONFINED COMPREESSION TESTER (جهاز فحص الضغط الغير محصور)	2	2	2	2	✓					
أداة خلط (سباجولة)	4	4	4	4	✓					

عضو
م.مهندس لؤي حسن جبار
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عضو
م.مهندس ايات حسين مجيد
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عضو
ر.ملاحظين فني علي لطيف عاصي
/ /

رئيس اللجنة
م.مهندس فاروق رعد سعدالله
/ /

جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر التربة)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

اسم المادة و وصفها	الموجود بموجب السجلات	الكمية	الموجود بموجب الجرد الفعلي	الكمية	المطابقة		الحالة		العاطل	الملاحظات
					مطابق	غير مطابق	زيادة	نقص		
جهاز استخراج نماذج يدوي	1	1	1	1	✓				عاطل	
THRMO HYGROGRAPH TIT/01 (جهاز قياس الحرارة والرطوبة)	1	1	1	1	✓					
clay dispersion device (جهاز فحص تشتت التربة الطينية	1		1	1	✓					
TRAIXIAL CELL TEST(خلية فحص تراي اكسيال)	3	3	3	3	✓					
SIEVE ANALYSIS TEST (هزاز مناخل ntrols(	1	1	1	1	✓				عاطل	
BALANCE (ميزان ذو كفة 20 كغم مع خمسة اوزان)	1	1	1	1	✓					
BALANCE MITLLER PM2000	2	2	2	2	✓					
-BALANCE MITLLER AE260	1	1	1	1	✓					
-BALANCE PM15 kg15	2	2	2	2	✓					
BALANCE SARTUS SARTUS	1	1	1	1	✓					
دورق مع محرار للوزن النوعي	3	3	3	3	✓					

عضو	عضو	عضو	رئيس اللجنة
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استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر التربة)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

اسم المادة و وصفها	الموجود بموجب السجلات	الكمية	الموجود بموجب الجرد الفعلي	الكمية	المطابقة		الحالة		العاطل	الملاحظات
					مطابق	غير مطابق	زيادة	نقص		
compressor with ((8m tube مضخة هواء حمراء اللون على عجلات صغيرة	1	1	1	1	✓					
Sieve set with pan and cover 8 inch	9	9	9	9	✓					
Sieve set قطر 20 cm	14	14	14	14	✓					
Sieve set قطر 20 cm	26	26	26	26	✓					
علبة3*7.5) tin) سم	20	20	20	20	✓					
علبة3*5) tin) سم	79	79	79	79	✓					
صواني نماذج متوسطة الحجم	10	10	10	10	✓					
صواني نماذج كبيرة الحجم	2	2	2	2	✓					
صواني نماذج صغيرة الحجم	36	36	36	36	✓					
مقياس انفعال dial gauge	59	59	59	59	✓					
حافظة نماذج desiccator	1	1	1	1	✓					
Vacuum pump	2	2	2	2	✓					
ROD comparator	1	1	1	1	✓					
مؤشر نزول الكتروني	2	2	2	2	✓					

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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر التربة)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

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					مطابق	غير مطابق	زيادة	نقص		
جهاز فحص التربة الـ (C.B.R.) فول اوتوماتيك الكتروني سعة 50 طن مع قوالب عدد (3) مع ماسكات القوالب نوع الفا (تركي)	1	1	1	1	✓					
جهاز الوزن النوعي مع ميزان الكتروني تركي المنشأ	1	1	1	1	✓					
سيت مناخل قطر 30 سم يتكون من 18 قطعة نوع الفا تركي المنشأ	1	1	1	1	✓					
علبة معدنية Tin صغيرة	100	100	100	100	✓					
جهاز استخراج النماذج للتربة شلبيات هايدروليكي يدوي يشمل جميع القياسات	1	1	1	1	✓					
جهاز فحص الاختراق الموقعي داينميكيا	1	1	1	1	✓					

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جامعة النهرين / كلية الهندسة

استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر التربة)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

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					مطابق	غير مطابق	زيادة	نقص		
Sand density cone apparatus (جهاز فحص الكثافة الحقلية للتربة بطريقة المخروط dia 6.5(	2	2	2	2	✓					
Sand Equivalent Shaker(جهاز الاهتزاز المكافي للتربة الرملية)	1	1	1	1	✓					
HIGH CAPACITY (SIEVE SHAKER جهاز هزاز عالي السعة) يتضمن 13 منخل مع pan	1	1	1	1	✓					
PROVING RING - PENETROMETER kN, 100 kN5	2	2	2	2	✓					
Sieve shaker (هزاز مناخل) DEVICE ELECROMATIC 315 - mm DIA	3	3	3	3	✓					
PLATE BEARING EQUIPMENT (جهاز فحص الصفيحة) - KN CAPACITY100	1	1	1	1	✓					
OVEN (فرن)- 220 LITERS NATURAL CONVECTION	1	1	1	1	✓					

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استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر التربة)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

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					مطابق	غير مطابق	زيادة	نقص		
OVEN (فرن)0-250 C	1	1	1	1	✓					
SURFACE SOIL SAMPLER (جهاز اخذ عينات التربة السطحية)DIA 100MM	1	1	1	1	✓					
HOT PLATE (هيتر)-ROUND 220V 2000 WATT	1	1	1	1	✓					
HOT PLATE (هيتر ELECTRIC HEATER (STIRRER	1	1	1	1	✓					
VACUM PYCNOMETER 10 LITERS	2	2	2	2	✓					
LIQUID LIMIT TEST (جهاز فحص السيولة)	6	6	6	6	✓					
HYDROMETER TEST DEVICE (سيت هايدروميتر)	28	28	28	28	✓					
HYDROMETER TEST DEVICE (سيت هايدروميتر)	10	10	10	10	✓					
EXTRUDER (جهاز اخذ النماذج اليدوي)	1	1	1	1	✓					

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استمارة الجرد السنوي (التوحيد)

الاجهزة المختبرية (مختبر التربة)

استمارة الجرد السنوي تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

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					مطابق	غير مطابق	زيادة	نقص		
weight sets (100 kg (total	1	1	1	1	✓					
Digital data logger	1	1	1	1	✓					
Switching box 5channels	1	1	1	1	✓					
Ac- adapter	1	1	1	1	✓					
transmitter type S "+F(6"+12"+18"+24 (	1	1	1	1	✓					
data logger	1	1	1	1	✓					
M+8 sensor soil 400 pressure gauge 200 kPa	2	2	2	2	✓					
Vibration meter	2	2	2	2	✓					
pore water pressure transducer	2	2	2	2	✓					
soil pressure transducer	2	2	2	2	✓					
Strain gauges wfla 3-11-3l	60	60	60	60	✓					
لواصق زقاء	2	2	2	2	✓					
لواصق خضراء	2	2	2	2	✓					
displacement transducer متحسس ازاحة	2	2	2	2	✓					
مبين	6	6	6	6	✓					

عضو	عضو	عضو	رئيس اللجنة
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/ /	/ /	/ /	/ /

المعيار التاسع / أنموذج 2.2 علامات دلالة توجيه وتحولات السلامة

دليل (3-9)

جامعة النهرين

كلية الهندسة

استمارة جرد الغرف الجرد السنوي لعام تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

القسم / الشعبة : الهندسة المدنية البناية : D

اسم شاغل الغرفة : ممر الطابق والحمامات بناية D الطابق : الارضي

3-9

ت	اسم المادة	العدد	وصف المادة	الملاحظات
1	لوحة اعلانات المنيوم مزججة	3		
2	قنفة معدنية ثلاث مقاعد مبطنة بالجلد	1		
3	سلة مهملات معدنية عمودية	3		
4	مطافيء CO2 متحركة	2		
5	مروحة عمودية TORNADO DISTAR	1	عاطلة	
6	طباخ غازي هندي SUN fire	1		
7	كرسي بلاستك	9		
8	قنينة غاز مع المنظم	1		
9	كيزر كهربائي SUN fire	1		
10	منضدة ارجل المنيوم غطاء فورميكا	1		
11	دولاب معدني باب واحد لوكر	1		
12	مكيف هواء جنرال	1		
13	شمعة تعليق ملابس	1		
14	براد ماء نوع دايستار	1		
15	مكنسة كهربائية	1		
16	سجادة 3×4	4		
17	تالفة ورق	1		
18	لفة كيبل	1		
19	دولاب حديد بابين	1		
20	جهاز استنساخ IR2016 Canon	1	عاطل	
21	جهاز استنساخ Sharp	1	عاطل	
22	جهاز تبريد سبلت يونت نوع نسيم الرافدين	1	عاطل	
23	ستول خشب غطاء فورميكا	1		
24	طابعة نوع كانون 810	2		
25	ups	3	عاطلة	
26	كرسي متحرك دوار ذو مساند مبطن بالقماش	1		
27	سجادة 3×4	12		

عضو	عضو	عضو	رئيس اللجنة
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توقيع شاغل الغرفة

علامات دلالة توجيهية داخل وخارج القسم

دليل (3-9)

* المعيار التاسع

[احصائيات تخص خدمات المكتبة]

دليل (9-5)

جامعة النهرين
كلية الهندسة

استمارة الجرد السنوي للكتب
تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

ت	اسم وعنوان الكتاب	الموجود بموجب السجلات	الموجود بموجب الجرد الفعلي	المطابقة		الحالة		المستهلك	الملاحظات
				مطابق	غير مطابق	زياده	نقص		
1	Calculus and Analytic Geometry	41	41	✓				لايوجد	
2	University Physics	28	28	✓					
3	Practical Physics in SI	12	12	✓					
4	Engineering Drawing Graphic Technology	30	30	✓					
5	Engineering Mechanics Static and Dynamic	26	26	✓					
6	Mechanics for	50	50	✓					

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مسؤولة مخزن الكتب
م.مهندس هبة عبد الرزاق يوسف
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	Engineers Statics								
7	Mechanics for Engineers Dynamic	50	50	✓					
8	Vector Mechanics for Engineers	1	1	✓					
9	Mechanics of Materials V1	40	40	✓					
10	Mechanics of Materials V2	30	30	✓					

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				مطابق	غير مطابق	زياده	نقص		
11	Materials of Construction	40	40	✓					
12	Material And Concrete Technology Testing And standards	25	25	✓					
13	Properties of Concrete	80	80	✓					

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14	Theory and Problems of Programming with Fortran	29	29	✓					
15	Basic Astructured Approach	29	29	✓					
16	Computing Fundamentals Concepts	30	30	✓					
17	Introduction to mechanics of solids	80	80	✓					

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				مطابق	غير مطابق	زياده	نقص		
18	Hydrology for Engineers	52	52	✓					
19	Fluid Mechanics (SI)	33	33	✓					
20	Fluid Mechanics	23	23	✓					
21	Statically Indeterminate Structures	35	35	✓					
22	Soil Mechanics	33	33	✓					
23	Soil testing	24	24	✓					

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24	Soil Mechanics SI	34	34	✓					
25	Building Construction Materials and Types of Construction	23	23	✓					
26	ACI-Code 83	42	42	✓					
27	ACI-Code 77	8	8	✓					
28	ACI-Code 89	169	169	✓					

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تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

ت	اسم وعنوان الكتاب	الموجود بموجب السجلات	الموجود بموجب الجرد الفعلي	المطابقة		الحالة		المستهلك	الملاحظات
				مطابق	غير مطابق	زياده	نقص		
29	Surveying	105	105	✓					
30	Surveying part one	18	18	✓					
31	Surveying part two	17	17	✓					
32	Principles of Engineering geology and Geotechnics	79	79	✓					
33	Design of Concrete Structures	55	55	✓					
34	Design Of Concrete	27	27	✓					

عضو
م.مهندس لؤي حسن جبار
/ /2014

عضو
م. مهندس ايات حسين مجيد
/ /2024

عضو
ر.ملاحظين فني علي لطيف عاصي
/ /2024

رئيس اللجنة
م.مهندس فاروق رعد سعدالله
/ /2024

مسؤولة مخزن الكتب
م.مهندس هبة عبد الرزاق يوسف
/ / 2024

جامعة النهرين
كلية الهندسة

استمارة الجرد السنوي للكتب
تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

	Structure part one							
35	Design Of Concrete Structure part two	33	33	✓				
36	Foundation Analysis and Design	22	22	✓				
37	Water-Resources Eng.	27	27	✓				
38	Water Supply and Sewage	52	52	✓				

عضو
م.مهندس لؤي حسن جبار
2014/ /

عضو
م. مهندس ايات حسين مجيد
2024/ /

عضو
ر.ملاحظين فني علي لطيف عاصي
2024/ /

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2024/ /

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2024 / /

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كلية الهندسة

استمارة الجرد السنوي للكتب
تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

ت	اسم وعنوان الكتاب	الموجود بموجب السجلات	الموجود بموجب الجرد الفعلي	المطابقة		الحالة		المستهلك	الملاحظات
				مطابق	غير مطابق	زياده	نقص		
39	Advanced Engineering Mathematics	47	47	✓					
40	Advanced Mechanics of Materials	23	23	✓					
41	Theory of Plates and Shells	32	32	✓					
42	Highway Engineering	24	24	✓					
43	Highways Traffic Planning and	35	35	✓					

عضو
م.مهندس لؤي حسن جبار
2014/ /

عضو
م. مهندس ايات حسين مجيد
2024/ /

عضو
ر.ملاحظين فني علي لطيف عاصي
2024/ /

رئيس اللجنة
م.مهندس فاروق رعد سعدالله
2024/ /

مسؤولة مخزن الكتب
م.مهندس هبة عبد الرزاق يوسف
2024 / /

جامعة النهرين
كلية الهندسة

استمارة الجرد السنوي للكتب
تنفيذ لأمر الإداري المرقم هـ ن /5793/1/1 في 2023/12/7

	Engineering Vol. 1								
44	Highways Traffic Planning and Engineering Vol. 2	32	32	✓					
45	Renforcement Concret FundamentalsSI	34	34	✓					

عضو
م.مهندس لؤي حسن جبار
/ /2014

عضو
م. مهندس ايات حسين مجيد
/ /2024

عضو
ر.ملاحظين فني علي لطيف عاصي
/ /2024

رئيس اللجنة
م.مهندس فاروق رعد سعدالله
/ /2024

مسؤولة مخزن الكتب
م.مهندس هبة عبد الرزاق يوسف
/ / 2024

العدد: م.د/ ١/ ١/ ٢٠٢٧

التاريخ: ٢٢/ ٧/ ٢٠٢٣

(استثمار الطاقة النظيفة طريقنا نحو التنمية المستدامة)

"امر اداري"

م/ تشكيل لجنة

بناءا على مقتضيات مصلحة العمل ، تقرر تشكيل لجنة من الذوات المدرجة اسماؤهم في ادناه لغرض تدقيق واستلام جهاز (Digital Hydraulic Bench) الخاص بقسم الهندسة المدنية.

الاسماء:-

١- أ.د محمود صالح مهدي / قسم الهندسة المدنية رئيساً
٢- أ.م.د هيثم علاء حسين / قسم الهندسة المدنية عضو
٣- علي لطيف عاصي (رئيس ملاحظين فني)/ قسم الهندسة المدنية عضو

أ.د باسم عبيد حسن
العميد
٢٢ / تموز / ٢٠٢٣

نسخة منه إلى /
- السيد معاون العميد للشؤون الادارية ، للتفضل بالاطلاع ..مع التقدير
- قسم الهندسة المدنية .. مع التقدير
- الشعبة الادارية والمالية
- شعبة الرقابة والتدقيق الداخلي
- شعبة الشؤون الهندسية والخدمات
- الملف
وميض ٧/٢٣

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

REPUBLIC OF IRAQ
MINSTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH
AL-NAHRAIN UNIVERSITY
COLLEGE OF ENGINEERING

العدد : هـ.ن.م.د / ٣٩٧
التاريخ : ٥ /١ / ٢٠٢٣

الى/ شركة وادي الرمال للمقاولات العامة

م/ استلام جهاز

تحية طيبة ....

نؤيد لكم استلام جهاز Digital Hydraulic Bench موديل HIF وقد تم نصب وتشغيل الجهاز وكان مطابق للمواصفات المطلوبة ويعمل دون اي خلل حيث تم تنصيب الجهاز وتشغيله من قبل مهندسي شركة وادي الرمال والمدرجة اسماؤهم ادناه وبحضور لجنة الاستلام وكادر مختبرات قسم الهندسة المدنية:

1. م.حيدر جواد هادي
2. م.شنان فليح عنيد

مع التقدير ....

أ.د. مصعب عايد كصب
رئيس قسم الهندسة المدنية
٥/١/ ٢٠٢٣

نسخة منه الى
-الملف

العراق - بغداد - ص ب 64040 الجادرية P.O Box 64040 Jadriya – Baghdad –Iraq
هاتف: 7786417 - 77846967784696 - 7786417 Phone: 7786417- 77846967784696 - 7786417

المعيار التاسع (بيانات عن فعاليات الصيانة)

دليل (9-4).

وزارة التعليم العالي والبحث العلمي

جامعة النهرين/كلية الهندسة

قسم

شعبة ضمان الجودة والاداء الجامعي

وحدة الأعتماد المختبري

اسم المختبر:مختبر التربة

سجل الصيانة الدورية للأجهزة المختبرية

(GLP-5.10-01-04)

WI	01	02	01	0101	01

ت	اسم الجهاز	فترة الصيانة	من تاريخ	الى تاريخ	الملاحظات
1.	Pocket penetrometer tool	---			تم تقديم طلب صيانة للجهة ذات العلاقة ولم تتم اعمال الصيانة
2.	Liquid Limit casegrande device	---			
3.	Balamce 15kg	---			
4.	Triaxial test Water de-aired system	---			

مسؤول المختبر   مسؤول الاعتماد المختبري   رئيس القسم   العميد

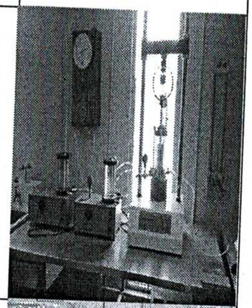
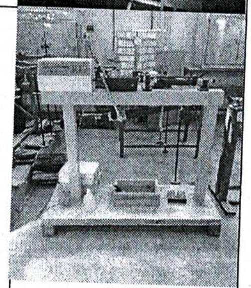
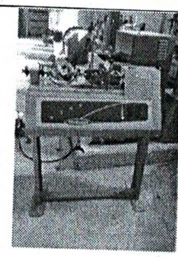
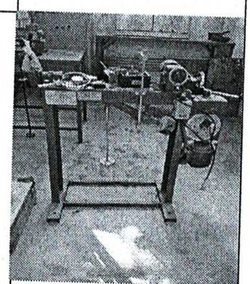
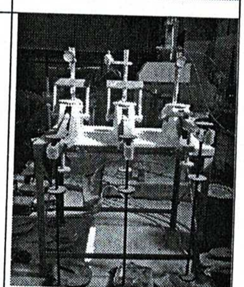
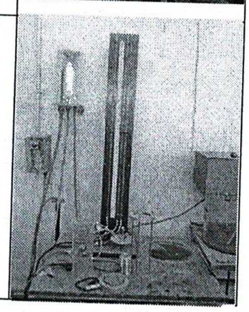
نسخة منه

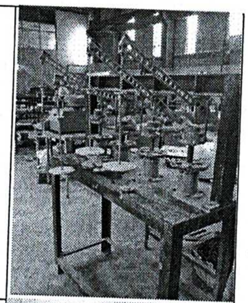
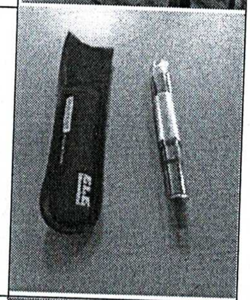
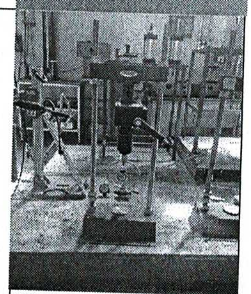
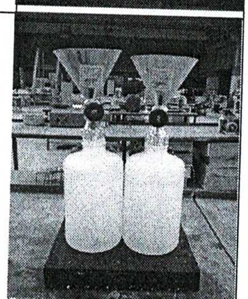
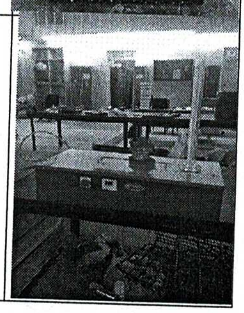
- المختبر المعني.

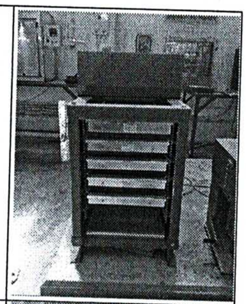
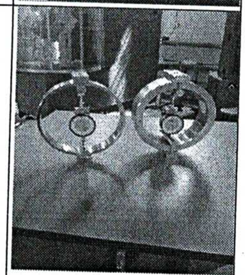
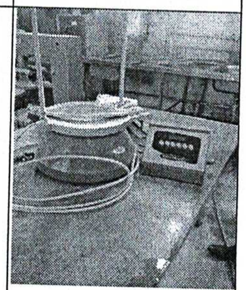
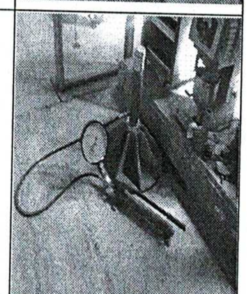
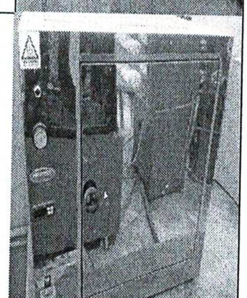
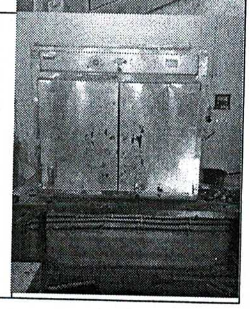
- وحدة قاعدة البيانات في القسم.

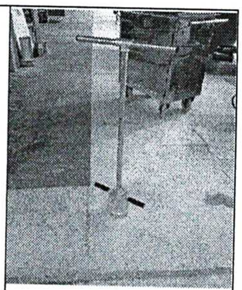
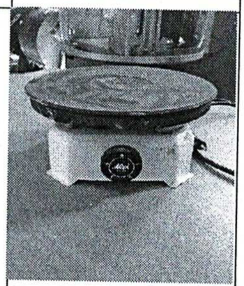
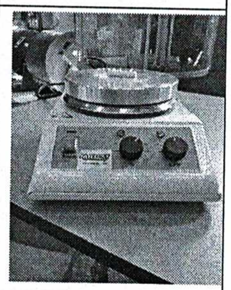
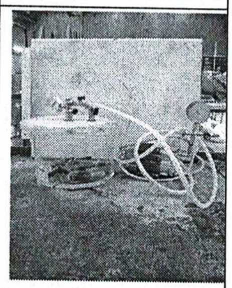
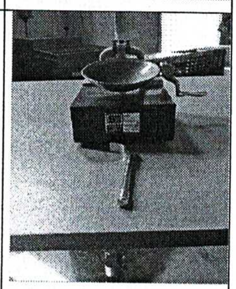
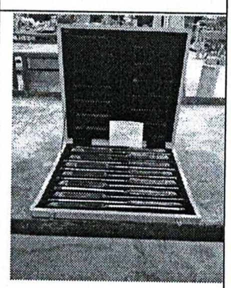
Laboratory Name: SOIL LAB.

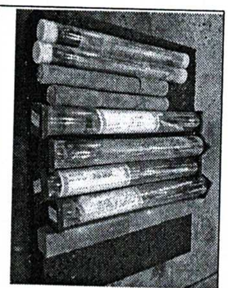
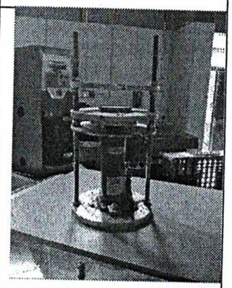
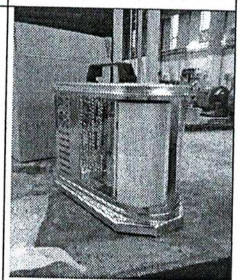
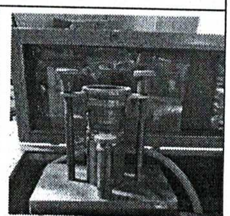
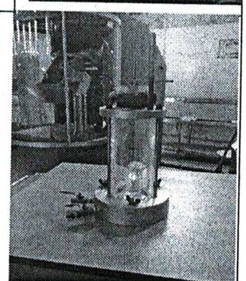
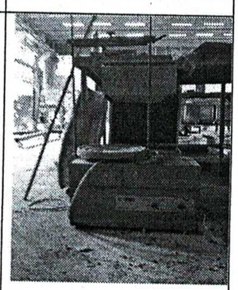
Laboratory Equipments,Machines,Instruments and Apparatus

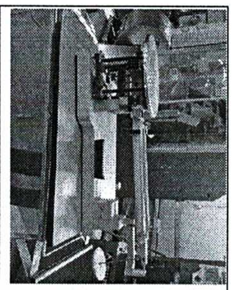
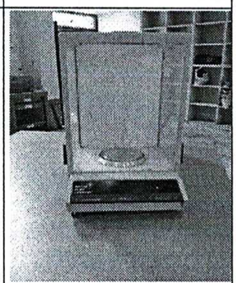
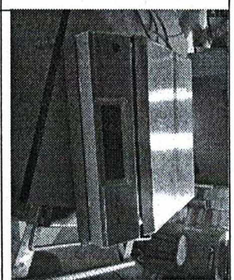
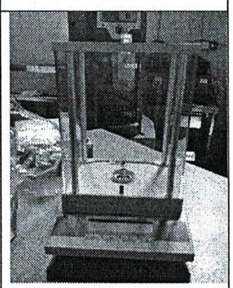
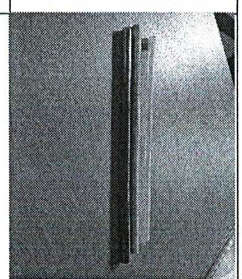
	Name	Code No.	Quantity	Performance	Addopted Specification	Plate
1	A complete set of Drained and Undrained Triaxial. Oil/Water Pressure System.(جهاز فحص القص ثلاثي المحاور)	NHENCISO001	2	working		
2	A complete set of direct shear test. (جهاز القص المباشر)	NHENCISO002	1	working		
3	direct shear test (جهاز القص المباشر)	NHENCISO003	1	working		
4	direct shear test (جهاز القص المباشر)	NHENCISO004	1	unsed		
5	A complete set of one dimensional consolidation test (فحص الانضمام احادي الذراع)	NHENCISO005	1	working		
6	A complete set of constant head permeability test (جهاز فحص النفاذية)	NHENCISO006	2	working		

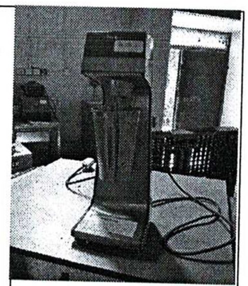
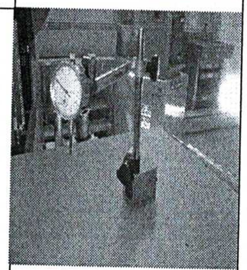
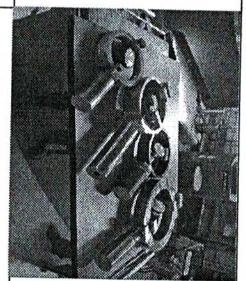
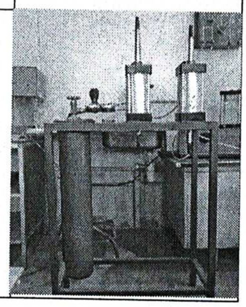
7	A complete set of one dimensional consolidation test (4-Arms) (جهاز فحص انضمام رباعي الاذرع)	NHENCISO007	1	UNUSED		
8	POCKET PENETROMETER	NHENCISO008	1	working		
9	ROD comparator	NHENCISO009	1	working		
10	UNCONFINED COMPREESSION TESTER (جهاز فحص الضغط الغير محصور)	NHENCISO010	2	working		
11	Sand density cone apparatus (جهاز فحص الكثافة الحقلية للتربة بطريقة المخروط)	NHENCISO011	2	working		
12	Sand Equivalent Shaker(جهاز الاهتزاز المكافي للتربة الرملية)	NHENCISO012	1	working		

13	HIGH CAPACITY SIEVE SHAKER (جهاز هزاز عالي السعة)	NHENCISO013	1	UNUSED		
14	PROVING RING PENETROMETER	NHENCISO014	2	working		
15	Sieve shaker DEVICE (هزاز مناخل)	NHENCISO015	1	working		
16	PLATE BEARING EQUIPMENT (جهاز فحص الصفيحة)	NHENCISO016	1	UNUSED		
17	OVEN (فرن)	NHENCISO017	1	Not working		
19	OVEN (فرن)	NHENCISO018	1	working		

19	SURFACE SOIL SAMPLER (جهاز اخذ عينات التربة السطحية)	NHENCISO019	1	working		
20	HOT PLATE (هيتر)	NHENCISO020	1	working		
21	HOT PLATE (هيتر)	NHENCISO021	1	working		
22	VACUM PYCNOMETER	NHENCISO022	1	working		
23	LIQUID LIMIT TEST (جهاز فحص السيولة)	NHENCISO023	6	working		
24	HYDROMETER TEST DEVICE (سيت هايدروميتر)	NHENCISO024	1	working		

25	HYDROMETER TEST DEVICE (سيت هايدروميتر)	NHENCISO025	2	ONE not working AND THE OTHER NEED MAINTANANCE		
26	EXTRUDER (جهاز اخذ النماذج اليدوي)	NHENCISO026	1	working		
27	THRMO HYGROGRAPH TIT/01 (جهاز قياس الحرارة والرطوبة)	NHENCISO027	1	working		
28	clay dispersion device (جهاز فحص تشتت التربة الطينية	NHENCISO028	1	working		 
29	TRAIXIAL CELL TEST(خلية فحص تراي اكسيال)	NHENCISO029	1	working		
30	SIEVE ANALYSIS TEST (هزاز مناخل)	NHENCISO030	1	working		

31	BALANCE (ميزان ذو كفة 20 كغم مع خمسة اوزان)	NHENCISO031	1	working		
32	BALANCE	NHENCISO032	1	working		
33	BALANCE	NHENCISO033	1	working		
34	BALANCE PM15	NHENCISO034	1	working		
35	BALANCE SARTUS	NHENCISO035	1	working		
36	THERMOMETER (محرار زجاجي)	NHENCISO036	4	working		

37	ELECTRIC MIXER (خلاط كهربائي)	NHENCISO037	2	working		
38	STRAIN GUAGEE HOLDER (حوامل مقياس الانفعال)	NHENCISO038	1	working		
39	PROVING RING	NHENCISO039	4	working		
40	Gas/Water Pressure system for triaxial test apparatus (نظام ضغط/ماء المرتبط بجهاز فحص القص ثلاثي المحاور)	NHENCISO040	1	working		

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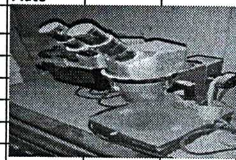
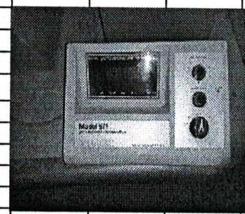
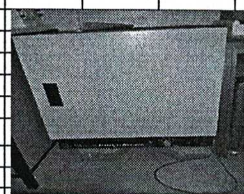
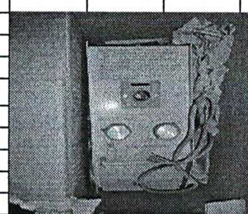
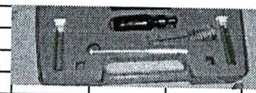
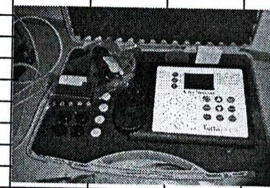
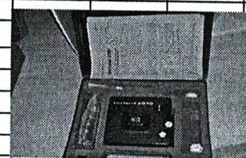
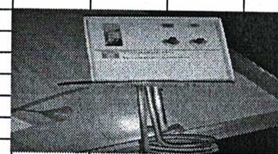
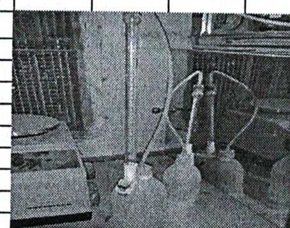
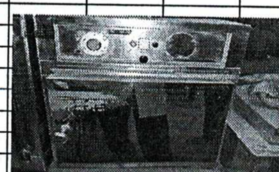
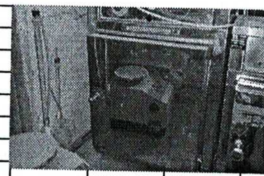
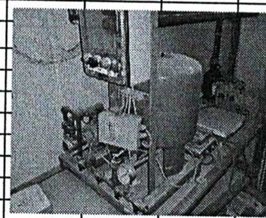
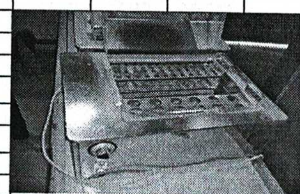
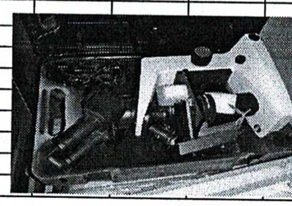
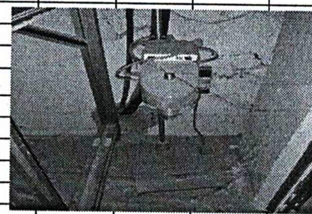
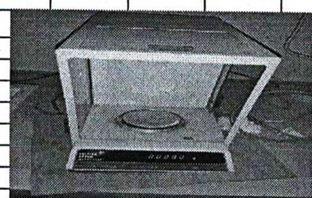
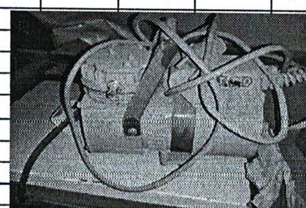
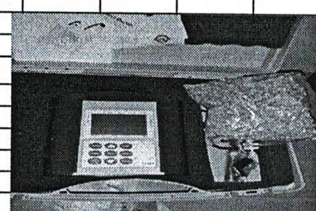
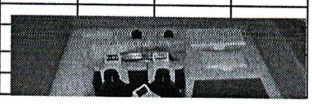
مختبر الصحية

				Adopted Specification	Performan	quantity	Code No.	name	Plate
لايوجد		idel	1				NHENCISA M01	Microscope مجهر	
لايوجد		idel	3				NHENCISA P02	جهاز قياس PH	
لايوجد		idel	1				NHENCISA H03	حاضنة Incubator مع مروحة	
لايوجد		idel	1				NHENCISA B04	ميزان كهربائي حساس سعة 3 كغم	
لايوجد		idel	1				NHENCISA B06	Colormeter جهاز قياس اللون	
لايوجد		idel	1				NHENCISA B06	ميزان كهربائي حساس جدا 600 غرام	
لايوجد		New, in use	1				NHENCISA TH8	Colormeter جهاز قياس اللون	
لايوجد		obsolete, in u	1		NHENCISA TH8			جهاز قياس شدة العكارة مع ملحقاته Turbidity meter	

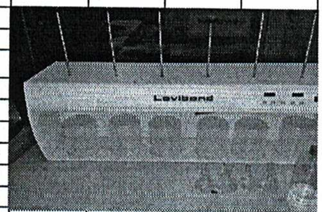
					
لايوجد	New, in use	1	NHENCISA TL9	جهاز قياس شدة العكارة مع ملحقاته Turbidity meter	
لايوجد	obsolete, in u	1	NHENCISA S10	Spectrophotometer مطياف	
لايوجد	obsolete, in u	1	NHENCISA C11	جهاز قياس الكلورين	
لايوجد	obsolete, in u	1	NHENCISA T12	جهاز منظم الحرارة Temp. Control	
لايوجد	obsolete, in u	2	NHENCISA P13	سحاحة دقيقة	
لا يوجد	obsolete, in u	4	NHENCISA H14	Hot Plate لوح تسخين	
لا يوجد	obsolete, in u	1	NHENCISA O15	فرن كهربائي حجم متوسط	
لايوجد	idel	1	NHENCISA O16	فرن كهربائي حجم كبير	

						
لايوجد		idel	1	NHENCISA B17	ميزان كهربائى حساس	
						
لايوجد		idel	1	NHENCISA P18	جهاز تحكم بالضغط	
لايوجد		idel	1	NHENCISA I19	حاضنة ضغط عالي	
لايوجد		ide	2	NHENCISA M20	جهاز ذو اثارة مغناطيسية للمزج Magnetic Stirrer	
لايوجد		idel	2	NHENCISA M21	جهاز ذو اثارة مغناطيسية للمزج مع التسخين Magnetic Stirrer	
لايوجد		idel	1	NHENCISA W22	Water Bath حمام مائي	
لايوجد		idel	1	NHENCISA O23	فرن ذو درجة حرارة عالية	

	لا يوجد		new,in use	1		NHENCISA B25	مجهر مجسم	Sterio Microscope	
	لايوجد		obsolete,in u	1		NHENCISA B[illegible]	ميزان حساس سعة		
	لايوجد		obsolete,in u	1		NHENCISA M26	Mixer خلاط		
	لايوجد		idel	1		NHENCISA M27	ميزان حساس الكتروني ماركة Oertling سعة 1600 g		
	لايوجد		obsolete,in u	1		NHENCISA M28	ميزان حساس الكتروني سعة 200g		
	لايوجد		idel	2		NHENCISA R29	مضخات هواء		
	لايوجد		idel	2		NHENCISA F30	جهاز الطرد المركزي		
	لايوجد		New, in use	1		NHENCISA D31	جهاز dissolved Oxygen		
	لايوجد		obsolete, in u	3		NHENCISA V32	جهاز Conductivity		
	لايوجد		new,in use	1		NHENCISA B33	جهاز BOD		

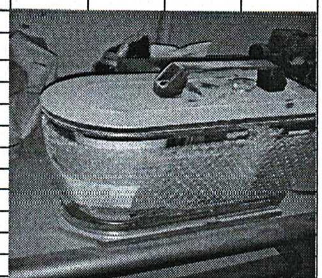
لايوجد		new,in use	1	T34	NHENCISA T25				Thermostatically controlled حاضنة			

لايوجد		new,in use	1		NHENCISA J35			Lovibond نوع Jar test جهاز فحص الجرة				



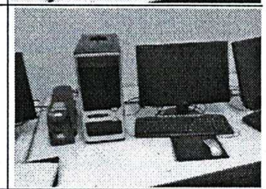
لايوجد		idel	1		NHENCISA O36			Oxygen meter				

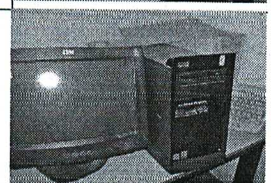
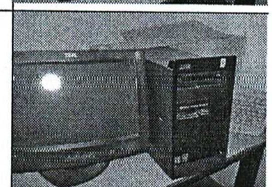
لايوجد		idel	1		NHENCISA R37							
											جهاز تخطيط	

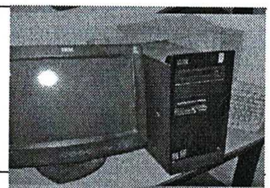


Laboratory Name:Computer labroutory

Laboratory Equipments,Machines,Instruments and Apparatus

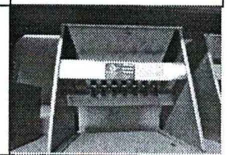
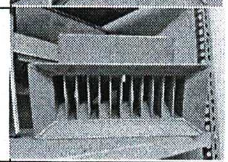
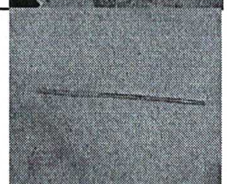
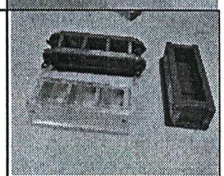
	Name	Code No.	Quantity	Performance	Addopted Specification	Plate
	حاسبة نوع LG وملحقتها من نوع LG (MOUSE+KEYBOAR) و USP نوع Mercury	NHENCICO001	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها من نوع LG (MOUSE+KEYBOAR) و USP نوع Mercury	NHENCICO002	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها من نوع LG (MOUSE+KEYBOAR) و USP نوع Mercury	NHENCICO003	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها من نوع LG (MOUSE+KEYBOAR) و USP نوع Mercury	NHENCICO004	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها من نوع LG (MOUSE+KEYBOAR) و USP نوع Mercury	NHENCICO005	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها من نوع LG (MOUSE+KEYBOAR) و USP نوع Mercury	NHENCICO006	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها من نوع LG (MOUSE+KEYBOAR) و USP نوع Mercury	NHENCICO007	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها من نوع LG و (MOUSE+KEYBOAR) USP نوع Mercury	NHENCICO008	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها من نوع LG و (MOUSE+KEYBOAR) USP نوع Mercury	NHENCICO009	1	NEW ,in use	لا يوجد	

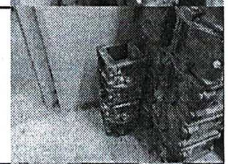
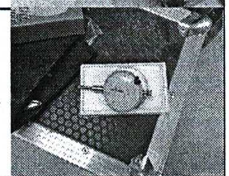
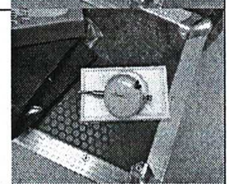
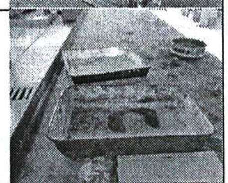
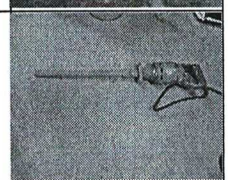
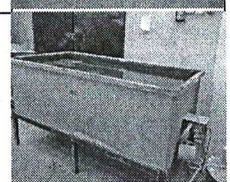
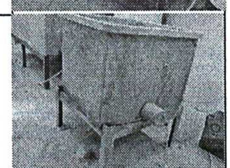
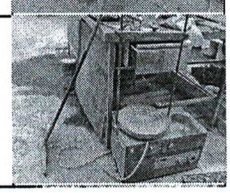
	حاسبة نوع LG وملحقتها من نوع LG (MOUSE+KEYBOAR) و Mercury نوع USP	NHENCICO010	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها من نوع LG (MOUSE+KEYBOAR) و Mercury نوع USP	NHENCICO011	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها من نوع LG (MOUSE+KEYBOAR) و Mercury نوع USP	NHENCICO012	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها من نوع LG MOUSE LG+KEYBOARD Genius) Mercury نوع USP و	NHENCICO013	1	NEW ,in use	لا يوجد	
	حاسبة نوع LG وملحقتها (MOUSE LG+KEYBOARD Microsoft) Mercury نوع USP و	NHENCICO014	1	NEW ,in use	لا يوجد	
	حاسبة نوع IBM مع ملحقاتها نوع IBM USP بدون (MOUSE+KEYBOARD)	NHENCICO015	1	Obsolete ,defected	لا يوجد	
	حاسبة نوع IBM مع ملحقاتها نوع IBM USP بدون (MOUSE+KEYBOARD)	NHENCICO016	1	Obsolete ,defected	لا يوجد	
	حاسبة نوع IBM مع ملحقاتها نوع IBM USP بدون (MOUSE+KEYBOARD)	NHENCICO017	1	Obsolete ,defected	لا يوجد	
	حاسبة نوع IBM مع ملحقاتها نوع IBM USP بدون (MOUSE+KEYBOARD)	NHENCICO018	1	Obsolete ,defected	لا يوجد	
	حاسبة نوع IBM مع ملحقاتها نوع IBM USP بدون (MOUSE+KEYBOARD)	NHENCICO019	1	Obsolete ,defected	لا يوجد	

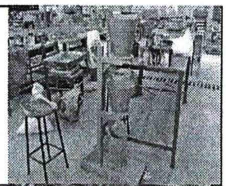
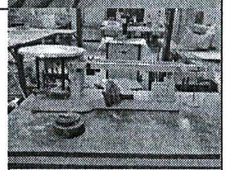
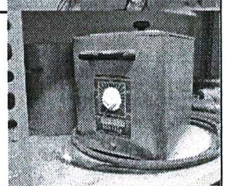
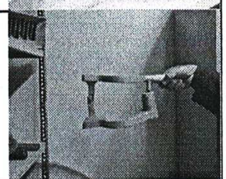
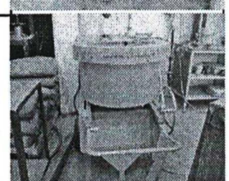
	حاسبة نوع IBM مع ملحقاتها نوع IBM (MOUSE+KEYBOARD) بدون USP	NHENCICO020	1	Obsolete ,defected	لا يوجد	
	حاسبة نوع IBM مع ملحقاتها نوع IBM (MOUSE+KEYBOARD) بدون USP	NHENCICO021	1	Obsolete ,defected	لا يوجد	
	حاسبة نوع IBM مع ملحقاتها نوع IBM (MOUSE+KEYBOARD) بدون USP	NHENCICO022	1	Obsolete ,defected	لا يوجد	
	حاسبة مع ملحقاتها نوع IBM بدون USPحاسبة نوع IBM مع ملحقاتها نوع IBM (MOUSE+KEYBOARD) بدون USP	NHENCICO023	1	Obsolete ,defected	لا يوجد	
	حاسبة نوع IBM مع ملحقاتها نوع IBM (MOUSE+KEYBOARD) بدون USP	NHENCICO024	1	Obsolete ,defected	لا يوجد	
	حاسبة نوع IBM مع ملحقاتها نوع IBM (MOUSE+KEYBOARD) بدون USP	NHENCICO025	1	Obsolete ,defected	لا يوجد	
	حاسبة نوع IBM مع ملحقاتها نوع IBM (MOUSE+KEYBOARD) بدون USP	NHENCICO026	1	Obsolete ,defected	لا يوجد	

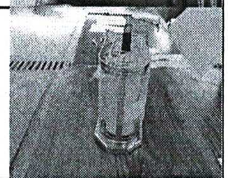
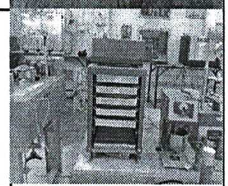
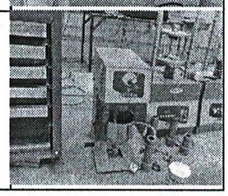
Laboratory Name: MATERIAL LAB.

Laboratory Equipments,Machines,Instruments and Apparatus

	Name	Code No.	Quantity	Performance	Addopted Specification	Plate
1	قاسمة نماذج ELE	NHENCIMA001	2	In Good Condition	C183-13	
2	قاسمة نماذج ELE	NHENCIMA002	1	In Good Condition	C183-13	
3	قالب اسطواني للخرسانة 300*150 ملم	NHENCIMA003	36	In Good Condition	C39/C39M-14	
4	مخروط فحص الهطول	NHENCIMA004	6	In Good Condition	C143/C143M-12	
5	قضيب الرص	NHENCIMA005	4	In Good Condition		
6	قضيب رص الخرسانة للمكعبات	NHENCIMA006	7	In Good Condition		
7	قالب مكعب للسمنت 5*5*5 سم	NHENCIMA007	5	In Good Condition	C109/C109M-13	
8	از فيكات لاختراق مونة السمنت مع ثمانية قوالب دائر	NHENCIMA008	5	In Good Condition	C191-13	
9	جهاز فحص الفراغات الهوائية في الخرسانة	NHENCIMA009	1	In Good Condition	C185-08	
10	كرة كيلي لقياس قابلية التشغيل في الخرسانة	NHENCIMA010	1	In Good Condition	C187-11e1	

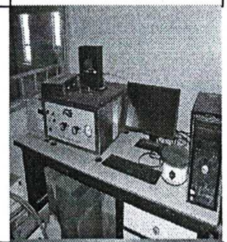
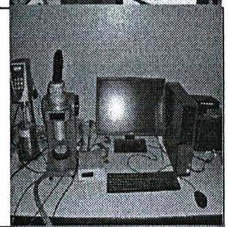
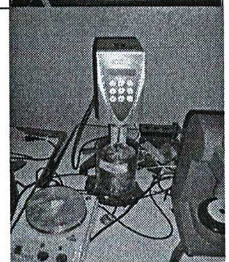
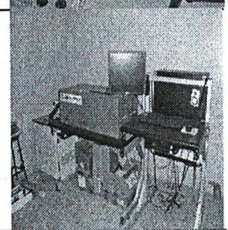
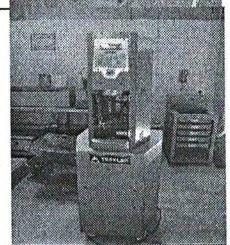
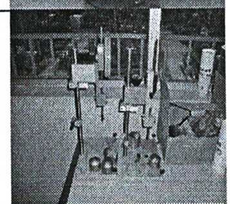
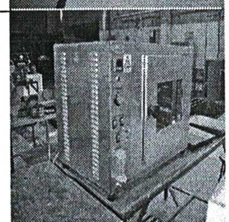
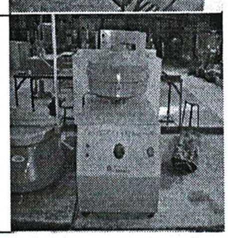
11	فرن تجفيف كهربائي 220 ف الماني	NHENCIMA011	1	In Good Condition		
12	قوالب مكعبات كونكريتية 150 ملم	NHENCIMA012	101	In Good Condition	C172/C172M-14	
13	قوالب مكعبات كونكريتية 100 ملم	NHENCIMA013	30	In Good Condition	C172/C172M-14	
14	Dial Gauge 0.10*30	NHENCIMA014	4	In Good Condition		
15	Dial Gauge 0.10*50	NHENCIMA015	1	In Good Condition		
16	صواني حاويات نماذج متوسطة الحجم	NHENCIMA016	7	In Good Condition		
17	صواني حاويات نماذج صغيرة الحجم	NHENCIMA017	6	In Good Condition		
18	جهاز هزاز كونكريتي للقوالب الخرسانية يدوي (ذو خرطوم)	NHENCIMA018	1	In Good Condition		
19	Large Curing Tank	NHENCIMA019	1	In Good Condition		
20	Small Curing Tank	NHENCIMA020	1	In Good Condition		
21	هزاز مناخل قطر 8" و 12"	NHENCIMA021	1	In Good Condition	C136-06	

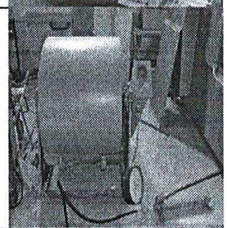
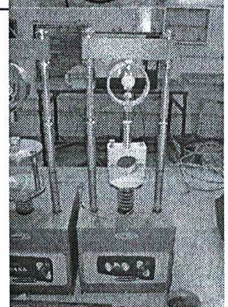
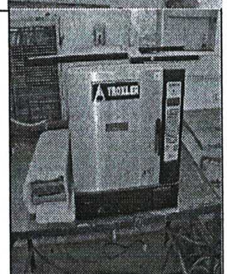
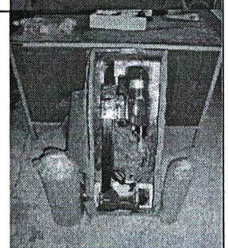
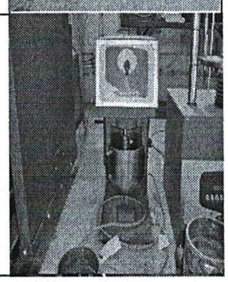
22	جهاز فحص معامل الرص	NHENCIMA022	1	In Good Condition	C1611/C1611M	
23	جهاز هزاز لفحص الهطول	NHENCIMA023	1	In Good Condition	C143/C143M-12	
24	اناء كبير دائري (طشت)	NHENCIMA024	4	In Good Condition		
25	هزاز مناخل صغير	NHENCIMA025	1	In Good Condition	C136-06	
26	ميزان ذو كفة سعة 20 كغم مع اوزان	NHENCIMA026	1	In Good Condition		
27	Bench Mouting Mixer Operated خلاط (عجانة) Capacity 14 liter	NHENCIMA027	1	In Good Condition	C305-13	
28	جهاز فحص الكونكريت بقوة قصوى 1560KN	NHENCIMA028	1	In Good Condition	C917-05	
29	جهاز عمل القبعات قطر 6 انج مع مسخن (مركب كيمياوي)	NHENCIMA029	1	In Good Condition	V233/C233M	
		NHENCIMA029	1	In Good Condition	V233/C233M	
30	خباطة كونكريت نوع ELE	NHENCIMA030	1	In Good Condition	C305-13	
31	خباطة كونكريت نوع ALFA	NHENCIMA031	1	In Good Condition	C305-13	
32	طبلة هزازة Endecolls	NHENCIMA032	1	In Good Condition	C136-06	

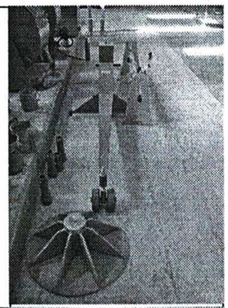
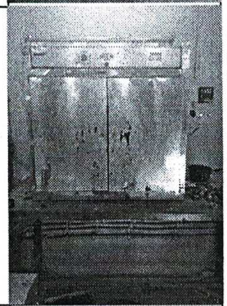
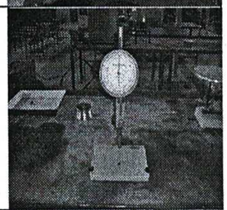
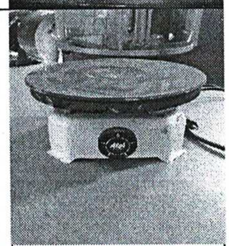
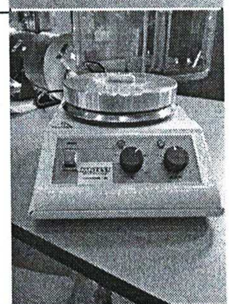
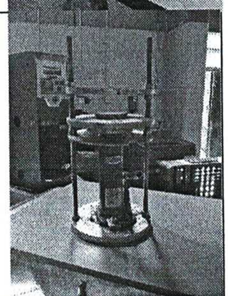
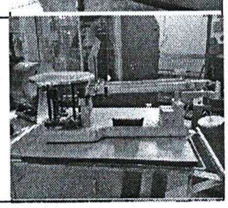
33	ماكنة لحام يابانية 300-350 A	NHENCIMA033	1	In Good Condition		
34	سيت مناخل يتكون من 12 قطعة	NHENCIMA034	1	In Good Condition	C136-06	
35	سيت مناخل يتكون من 13 قطعة	NHENCIMA035	1	In Good Condition	C136-06	
36	جهاز قياس الحرارة والرطوبة	NHENCIMA036	1	In Good Condition	C566-13	
37	High Capacity Shaker جهاز هزاز مناخل	NHENCIMA037	1	In Good Condition	C136-06	
38	Mixer for cement about capacity 4.7 Kg	NHENCIMA038	1	In Good Condition	C305-13	

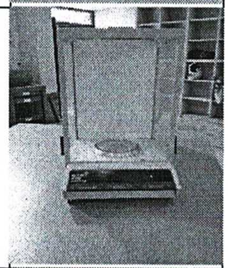
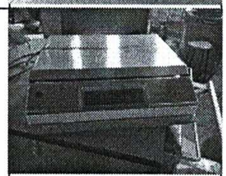
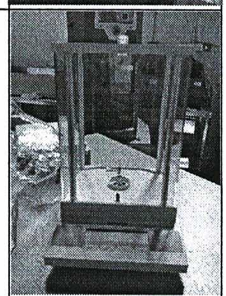
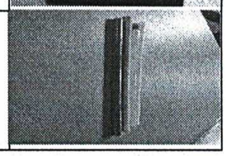
Laboratory Name: TRANSPORTATION LAB.

Laboratory Equipments,Machines,Instruments and Apparatus

	Name	Code No.	Quantity	Performance	Addopted Specification	Plate
1	BENDING BEAM RHEOMETER	NHENCITR001	1	UNUSED		
2	DYNAMIC SHEAR RHEOMETER (DSR) DEVICE	NHENCITR002	2	not working		
3	BROOKFIELD ROTATIONAL VISCOMETER	NHENCITR003	1	not working		
4	DIRECT TENSION TESTER	NHENCITR004	1	unsed		
5	GYRATORY COMPACTOR	NHENCITR005	1	working		
6	A complete set of constant head permeability test (جهاز فحص النفاذية)	NHENCITR006	3	working		
7	ROLLING THIN FILM OVEN	NHENCITR007	1	UNUSED		
8	EXTRACTOR	NHENCITR008	2	working		

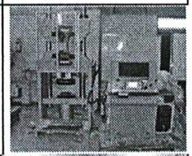
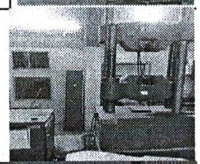
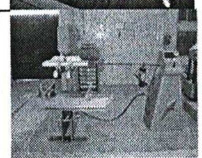
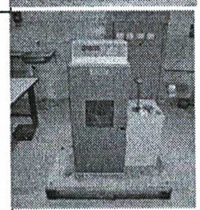
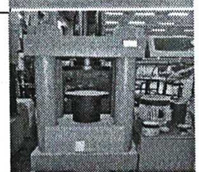
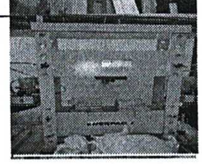
9	SHAKER	NHENCITR009	1	working		
10	ROLLER COMPACTOR	NHENCITR010	1	working		
11	LOS ANGELES	NHENCITR011	2	working		
12	AUTOMATIC MARSHALL COMPAC	NHENCITR012	2	working		
13	PRESSURE AGING VESSEL	NHENCITR013	1	UNUSED		
14	CORE EXTRACTOR	NHENCITR014	1	working		
15	MIXER	NHENCITR015	1	working		

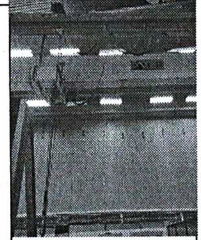
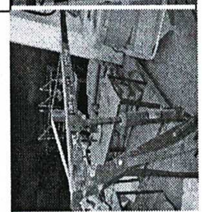
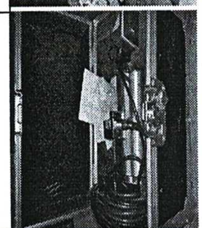
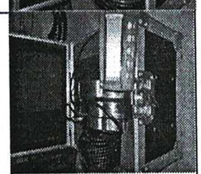
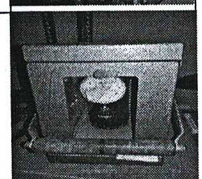
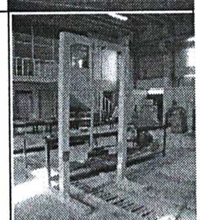
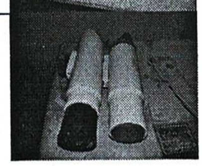
16	BENKELMAN BEAM	NHENCITR016	1	UNUSED		
17	OVEN (فرن)	NHENCITR017	1	working		
18	SURFACE SOIL SAMPLER (جهاز اخذ عينات التربة السطحية)	NHENCITR018	1	working		
19	HOT PLATE (هيتر)	NHENCITR019	1	working		
20	HOT PLATE (هيتر)	NHENCITR020	1	working		
21	EXTRUDER (جهاز اخذ النماذج اليدوي)	NHENCITR021	1	working		
22	BALANCE (ميزان ذو كفة 20 كغم مع خمسة اوزان)	NHENCITR022	1	working		

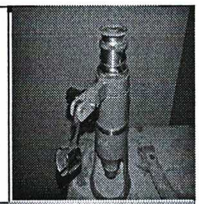
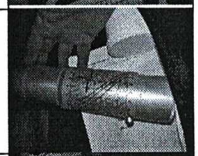
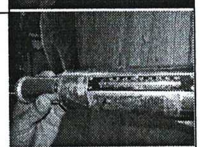
23	BALANCE	NHENCITR023	2	working		
24	BALANCE	NHENCITR024	1	working		
25	BALANCE PM15	NHENCITR025	2	ONE not working AND THE OTHER NEED MAINTANANCE		
26	BALANCE SARTUS	NHENCITR026	1	working		
27	THERMOMETER (محرار زجاجي)	NHENCITR027	4	working		

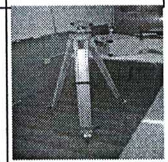
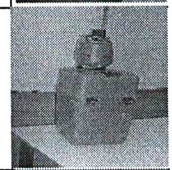
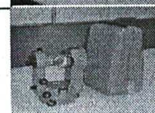
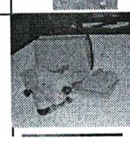
Laboratory Name: Structural and concrete Technology Laboratory Equipments, Machines and Apparatus

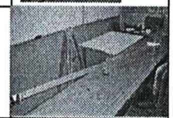
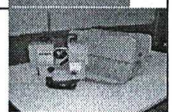
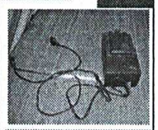
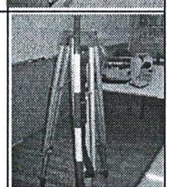
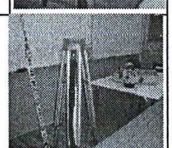
Laboratory Equipments,Machines,Instruments and Apparatus

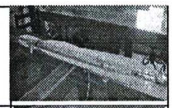
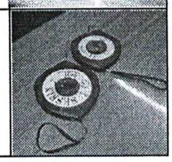
	Name	Code No.	Quantity	Performance	Addopted Specification	Plate
1	جهاز فحص الشد لقضبان حديد التسليح	NHENCIST001	1	In good condition	لا يوجد	
2	جهاز فحص الشد لقضبان حديد التسليح	NHENCIST002	1	Out of service	لا يوجد	
3	Data Logger – TML (قارئ الانفعال والازاحات)	NHENCIST003	1	In good condition	لا يوجد	
4	مقياس الازحات الكهربائي	NHENCIST004	8	In good condition	لا يوجد	
5	جهاز فحص الانحناء للعتبات الغير مسلحه	NHENCIST005	1	In good condition	لا يوجد	
6	جهاز فحص انضغاط للمكعبات والاسطوانات الخرسانية	NHENCIST006	2	In good condition	لا يوجد	
	جهاز فحص انضغاط للمكعبات والاسطوانات الخرسانية.	NHENCIST007	1	In good condition	لا يوجد	
	جهاز فحص انضغاط للمكعبات والاسطوانات الخرسانية.	NHENCIST008	1	Need Maintenance And Calibration	لا يوجد	
	جهاز فحص الانضغاط والانحناء	NHENCIST009	1	Need Maintenance And Calibration	لا يوجد	
	هيكل تحميل	NHENCIST010	1	need Maintenance And Calibration	لا يوجد	
	جهاز ضغط مع هيكل تحميل	NHENCIST001	1	need Maintenance And Calibration	لا يوجد	

	جهاز ضغط مع هيكل تحميل	NHENCIST001	1	Need Maintenance And Calibration	لا يوجد	
	جهاز ضغط صغير	NHENCIST011	1	Need Maintenance And Calibration	لا يوجد	
	كرين جسري معلق مع الكنترول	NHENCIST012	1	Need Maintenance And Calibration	لا يوجد	
	كرين صغير متنقل يدوي	NHENCIST013	1	In good condition	لا يوجد	
	Loading Cell –Rinstrum N320	NHENCIST014	1	In good condition	لا يوجد	
	Loading Cell- Rinstrum R320	NHENCIST015	1	In good condition	لا يوجد	
	Loading Cell – ELE	NHENCIST016	1	In good condition	لا يوجد	
		NHENCIST017	1	Need to complete	لا يوجد	
	مجهر التشقق	NHENCIST018	1	In good condition	لا يوجد	
	مجهر التشقق	NHENCIST019	1	Old-working	لا يوجد	

	مجهر تشقق	NHENCIST020	1	old-working	لا يوجد	
	جهاز تحسس قضبان الحديد والكفر الخرساني	NHENCIST021	1	In good condition	لا يوجد	
	جهاز تحسس قضبان الحديد والكفر الخرساني	NHENCIST022	1	Old-working	لا يوجد	
	Concrete Test Hammer –ELE	NHENCIST023	1	In good condition	لا يوجد	
	مطرقة شمث	NHENCIST024	1	In good condition	لا يوجد	
	مطرقة شمث	NHENCIST025	1	in good condition	لا يوجد	
	مطرقة شمث	NHENCIST026	1	In good condition	لا يوجد	
	مطرقة شمث	NHENCIST027	1	In good condition	لا يوجد	
	جهاز فحص الخرسانة بالموجات	NHENCIST028	1	In good condition	لا يوجد	
	جهاز فحص الخرسانة بالموجات	NHENCIST029	1		لا يوجد	
	Non-Destructive Testing System- Matest –Italy	NHENCIST030	1	in good condition	لا يوجد	

Laboratory Name: SURVEYING LAB.						
Laboratory Equipments,Machines,Instruments and Apparatus						
	Name	Code No.	Quantity	Performance	Addopted Specification	Plate
1	جهاز تيكول تعليمي موضوع بحقيبة	NHENCISU001	2	Obsolete ,in use	لا يوجد	
2	جهاز ليزر لفل موضوع في حقيبة برتقالية wild سويسري	NHENCISU002	2	New ,defected	لا يوجد	
3 4 5	جهاز تايكو ميتر موضوع في حقيبة سويسري الصنع KIRN K1-S + ركيزة + عمود تمركز	NHENCISU003	2	Obsolete ,in use	لا يوجد	  
6	جهاز ثيودولايت نوع KERN K1-S - + ركيزة ثيودولايت والتايكوميتر + عمود تمركز ثيودولايت والتايكوميتر العادي	NHENCISU004	9	Obsolete,in use	لا يوجد	  
	جهاز ليفل نوع WILD NA20 سنغافوري الصنع	NHENCISU005	6	Obsolete,in use	لا يوجد	
	جهاز ليفل WILD + ركيزة جهاز لفل WILD نوع	NHECISU006	3	Obsolete,in use	لا يوجد	 
12 13	جهاز لفل نوع Kern GK 23 + ركيزة لفل نوع KERN GK23	NHENCISU007	10	Obsolete,in use	لا يوجد	 
14	جهاز لفل نوع Jena + ركيزة جهاز لفل نوع Jena	NHENCISU008	1	Obsolete,in use	لا يوجد	

15	جهاز ... نوع Jena + ركيزة جهاز ... نوع Jena	NHENCISU008	1	Obsolete,in use	لا يوجد	
16	جهاز ذراع الاسناد Substance bar ركيزة جهاز ذراع الاسناد Substance bar	NHENCISU009	6	Obsolete, in use	لا يوجد	
17	بلانوميتر ذو ذراع ثابت نوع CORDI	NHENCISU010	10	Obsolete, in use	لا يوجد	
18	قاعدة المربع العدسي + موشور مزدوج KERN المربع العدسي نوع	NHENCISU011	10	Obsolete, in use	لا يوجد	
19	جهاز ستريو سكوب جيبي مع سيت صور	NHENCISU012	12	Obsolete, in use	لا يوجد	
20, 21	جهاز تايكو ميتر الكتروني ALTA 62ELSS المانيا الغربية ناقص برنامج +ركيزة التايكوميتر الالكتروني+ عاكس مع العمود+ شاحنة بطاريات 9 فولت +ركيزة + عمود تمركز ركيزة التايكو ميتر التايكوميتر الالكتروني +محولة 8 فولت +حاسبة جهاز التايكوميتر الالكتروني REC500	NHENCISU013	1	New ,defected	لا يوجد	      
	جهاز نوع TopCon Total Station SE105 +ركيزة المنيوم +حامل للعاكس + عاكس	NHENCISU014	4	New,in use	لا يوجد	
	مع TopCon DT جهاز ثيودولايت الكتروني نوع + ملحقات + شاخص 2 متر ياباني +ركيزة المنيوم	NHENCISU015	10	New,in use	لا يوجد	
	لفل الكتروني TopCon DL مع ملحقات +ركيزة المنيوم + مسطرة مجفرة يابانية المنشأ	NHENCISU016	10	New,in use	لا يوجد	
	مسطرة لفل متعدد الانواع	NHENCISU017	15	Obsolete, in use	لا يوجد	

	مظلة بيضاء اللون	NHENCISU018	6	Obsolete, in use	لا يوجد	
	فيتة ليزرية نوع Boschصينية الصنع	NHENCISU019	4	New,in use	لا يوجد	
	شاخص معدني محلي الصنع	NHENCISU020	30	Obsolete,defected	لا يوجد	
	شاخص 2 م صيني الصنع	NHENCISU021	40	New,in use	لا يوجد	
	فيتة ستانلي فئة 30 مترموضوعة في حقيبة	NHENCISU022	8	Obsolete, in use	لا يوجد	
	فيتة كتان	NHENCISU023	81	Obsolete, in use	لا يوجد	
	فيتة معدنية	NHENCISU024	9	Obsolete, in use	لا يوجد	

المعيار العاشر

اختصاص البرنامج

Republic of Iraq - Ministry of Higher Education and Scientific Research
Al-Nahrain University
Bachelor's degree of Science in Civil Engineering
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2023 - 2024)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
جامعة النهرين
بكالوريوس علوم في الهندسة المدنية
أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة
المنهاج الدراسي للعام ٢٠٢٣-٢٠٢٤

BP - Civil Dep.

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
UGI	One	1	UREQ 110	Workshop Technology		Arabic				3		0	3	48	27	75	3.00	HSS	
		2	UREQ 111	Computer Fundamentals and Programming I		English	2		2				3	63	12	75	3.00	HSS	
		3	MATH 110	Mathematics		English	4						3	63	62	125	5.00	FS	
		4	CREQ 110	Engineering Drawing		English	2		3				3	78	47	125	5.00	FE	
		5	UREQ 112	Human Rights and Democracy		Arabic	2					0	3	33	17	50	2.00	HSS	
		6	PHYS 110	Physics		English	2		2				3	63	62	125	5.00	FS	
		7	CIER 110	Engineering Mechanics I		English	3				1		3	63	62	125	5.00	FE	
		8	UREQ 113	Arabic Language		Arabic	2						3	33	17	50	2.00		
						Total	17	0	7	3	1	0	24	444	306	750	30		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
UGI	Two	1	CREQ 120	Chemistry		English	2		2				3	63	37	100	4.00	FS	
		2	MATH 120	Fundamentals of Engineering Mathematics		English	3				1		3	63	62	125	5.00	FS	MATH 110
		3	CREQ 121	Engineering Graphics		English	2		2				3	63	62	125	5.00	FE	CREQ 110
		4	CREQ 122	Geology		English	2		2				3	63	62	125	5.00	FS	
		5	CIER 120	Fundamentals of Static and Dynamic		English	3				1		3	63	62	125	5.00	FE	CIER 110
		6	CIER 121	Material Technology		English	2		2				3	63	37	100	4.00	FE	
		7	UREQ 120	English Language I		English	2						3	33	17	50	2.00	HSS	
						Total	16	0	8	0	2	0	21	411	339	750	30		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
UGII	Three	1	UREQ 210	Computer Fundamentals and Programming II		English	2		2				3	63	12	75	3.00	HSS	UREQ 111
		2	MATH 210	Engineering Mathmatics		English	3				1		3	63	62	125	5.00	FS	MATH 120
		3	CIER 210	Mechanics of Materials I		English	3				1		3	63	62	125	5.00	FE	CIER 120
		4	CIER 211	Concrete Technology		English	3		2				3	78	47	125	5.00	FE	
		5	CIER 212	Fluid Mechanics I		English	2		2				3	63	62	125	5.00	FE	
		6	UREQ 211	Crimes of the Defunct Baath Party		Arabic	2						3	33	17	50	2.00	HSS	
		7	CIER 213	Geomatics I		English	2		2				3	63	62	125	5.00	FE	
						Total	17	0	8		2		21	426	324	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
UGII	Four	1	MATH 220	Analytic Mathematics		English	3				1		3	63	62	125	5.00	FS	MATH 210
		2	CREQ 220	Engineering Statistics		English	3						3	48	77	125	5.00	FE	
		3	CIER 220	Building Construction		English	3				2		3	78	47	125	5.00	FE	
		4	CIER 221	Mechanics of Materials II		English	3				1		3	63	62	125	5.00	FE	CIER 210
		5	CIER 222	Geomatics II		English	2		2				3	63	37	100	4.00	FE	CIER 213
		6	CIER 223	Fluid Mechanics II		English	3		2				3	78	22	100	4.00	FE	CIER 212
		7	UREQ 220	English Language II		English	2						3	33	17	50	2.00	HSS	UREQ 120
						Total	19	0	4	0	4	0	21	426	324	750	30		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Five	1	CIER 310	Soil Mechanics I		English	3		2				3	78	22	100	4.00	FE	
		2	CIER 311	Engineering and Numerical Analysis		English	5				1		3	93	57	150	6.00	FE	MATH 220
		3	CIER 312	Theory of Structures I		English	3				1		3	63	37	100	4.00	FE	CIER 221
		4	CIER 313	Reinforced Concrete Design I		English	3				1		3	63	37	100	4.00	ED	CIER 221
		5	CIER 314	Sanitary Engineering I		English	2		2				3	63	37	100	4.00	ED	
		6	CIER 315	Engineering Management & Economics		English	2						3	33	67	100	4.00	FE	
		7	CIER 316	Traffic Engineering I		English	2				1		3	48	52	100	4.00	FE	
						Total	20	0	4		4		21	441	309	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)	Exam	SSWL	USSWL	SWL	ECTS	Module Type	Prerequisite
UGIII														

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Six	1	CIER 320	Soil Mechanics II		English	3		2				3	78	47	125	5.00	FE	CIER 310
		2	ETHC 320	Professional Ethics		English	2						3	33	17	50	2.00	HSS	
		3	CIER 321	Theory of Structures II		English	3				1		3	63	62	125	5.00	FE	CIER 312
		4	CIER 322	Reinforced Concrete Design II		English	3				1		3	63	62	125	5.00	ED	CIER 313
		5	CIER 323	Sanitary Engineering II		English	2		2		1		3	78	22	100	4.00	ED	CIER 314
		6	CIER 324	Hydrology		English	2				2		3	63	62	125	5.00	FE	
		7	CIER 325	Environmental Engineering		English	2				2		3	63	37	100	4.00	FE	
						Total	17	0	4		7		21	441	309	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Seven	1	CREQ 410	Project I		English				2			3	33	17	50	2.00	ED	
		2	CIER 410	Elective I		English	3				1		3	63	37	100	4.00	FE	
		3	CIER 411	Foundation Engineering I		English	3				1		3	63	62	125	5.00	ED	CIER 320
		4	CIER 412	Geometric Design of Highways		English	3				1		3	63	62	125	5.00	ED	CIER 316
		5	CIER 413	Steel Design I		English	3				1		3	63	62	125	5.00	ED	CIER 321
		6	CIER 414	Reinforced Concrete Design III		English	3				1		3	63	62	125	5.00	ED	CIER 322
		7	CIER 415	Hydraulics		English	2				2		3	63	37	100	4.00	ED	
						Total	17				7		21	411	339	750	30.0		

UGIV	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w) CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
	Eight	1	CREQ 420	Project II		English				2			3	33	17	50	2.00	ED	
		2	CIER 420	Elective II		English	3				1		3	63	62	125	5.00	FE	
		3	CIER 421	Foundation Engineering II		English	3				1		3	63	62	125	5.00	ED	CIER 411
		4	CIER 422	Pavement Engineering		English	2		2				3	63	37	100	4.00	ED	CIER 412
		5	CIER 423	Steel Design II		English	3				1		3	63	62	125	5.00	ED	CIER 413
		6	CIER 424	Reinforced Concrete Design IV		English	3				1		3	63	62	125	5.00	ED	CIER 414
		7	CIER 425	Construction Methods & Estimation		English	3				1		3	63	37	100	4.00	FE	
						Total	17		2	2	5		21	411	339	750	30.0		

Total Recordes	CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam	SSWL	USSWL	SWL	ECTS	Must be 240 ECTS
	140	0	37	5	32	0	171	3411	2589	6000	240.0	

Note: The student should complete 4 weeks of Summer Internships to fullfil the requirements of the Bachelor's degree

Structured SWL (hr/w) type		
	CL	Class Lecture
	Lab	Laboratory
	Pr	Practical Training
	Tut	Tutorial
	Lect	Online lecture
	Semn	Seminar

Module Types	
B	Basic learning activities
C	Core learning activity
S	Suport or related learning activity
E	Elective learning activity

SWL:	Student Workload
SSWL:	Structured SWL
USSWL:	Unstructured SWL

Note: Columns O, Q and R are progrmaed, protected and should not be edited

Elective Modules I	
1	Airport Engineering
2	Plumbing
3	Masonary Engineering
4	Durability of Concrete Structures
5	Consruction Materials
6	Computer Application in Civil Engineering

Elective Modules II	
1	Bridge Engineering
2	Selected Topics in Civil Engineering
3	Railway Engineering
4	Fundemantals of Soil Improvement
5	Traffic Engineering II
6	Earthquake Engineering

السيد رئيس قسم الهندسة المدنية المحترم

م/ مقترحات تطوير مناهج قسم الهندسة المدنية

تحية طيبة:

اشارة الى الامر الداخلي ذي العدد ه.ن.م.د/٤٤٧ في ٢٠٢٢/١١/٢٨ والصادر من رئاسة قسم الهندسة والخاص بخطة تحسين المناهج، نرفق لكم المقترحات الخاصة بتطوير مناهج قسم الهندسة المدنية للتفضل بالاطلاع والتنسيب.

مع التقدير

الاستاذ الدكتور

جبار حمود البيضاني

رئيس لجنة تطوير المناهج

٢٠٢٣/2/20

اللجنة العلمية / أ.م.د. حسن موسى المحترم

يعرض في الاجتماع القادم للجنة العلمية رجاءً.

٢٠/٢/٢٠٢٣

رئيس القسم

مقترحات تطوير المناهج/قسم الهندسة المدنية/الدراسات الاولية

ادناه المقترحات الخاصة بتطوير مناهج الدراسات الاولية في قسم الهندسة المدنية/كلية الهندسة/جامعة النهرين:

اولا: تحديث مناهج الدراسات الاولية/تخصص انشاءات

أ: مقترحات اضافة المواد المنتخبة التالية الى الخطة الدراسية للدراسات الاولية في القسم وهي:

١- مقدمة عن طريقة العناصر المحددة (Introduction to the Finite Element Method)

٢- مقدمة عن ديناميك المنشأت (Introduction to Dynamics of Structures)

والمعتمدة في الجامعات العالمية الرصينة للمرحلة المنتهية والتي تهيئ الطالب لانجاز مشاريع تخرج في مجال الهندسة الانشائية وهي مواد تمهيدية تهيئ الطالب مستقبلا للدرسات العليا كونها تعرف الطالب بتلك المواد المهمة.

Suggested Electives for B.Sc in Civil Engineering

Structures

Course Code	CE
Course Name	Introduction to the Finite Element Method
Credit	3.00 Credit
Contact Hour	3 hrs/week
Books Recommend ed	1. Introduction to Finite Elements in Engineering by Chandrupatla and Belegundu 2. Introductory Finite Element Methods by Desai 3. Textbook of Finite Elements Analysis by Seshu 4. Finite Element Procedures by Klaus & Gen

Content of Course	Introduction to finite element method as applied to stress analysis problems; basic equations in elasticity, matrix displacement formulation, element shapes, nodes, nodal unknowns, and coordinate system, shape functions, strain displacement matrix, methods for assembling stiffness equations e.g. direct approach, Galerkin's method, virtual work method, the principle of minimum potential energy; introduction to isoparametric formulation; discretization of a structure and mesh refinement, one-dimensional stress- deformation and two-dimensional plane stress and plane strain analysis of stress-deformation problems; numerical integration and computer application.

ب: تحديث مناهج الدراسات الاولية/تخصص انشاءات

تفاصيل تحديث مناهج الدراسات الاولية/تخصص انشاءات

ت	المرحلة	المادة	المقترح/التوصية	اسم التدريسي المكلف
١	الرابعة	تصاميم الخرسانة المسلحة IV	اضافة موضوع تصميم الجدران الخرسانية المسلحة **(Design of Reinforced Concrete Walls)** وذلك لأهميته في تمكين المهندس المدني المتخرج من قسمنا من الاطلاع على كافة المتطلبات التصميمية بموجب **(ACI 318-19)** وطرق التحليل والتصميم الخاصة بالجدران الخرسانية المسلحة.	ا.د مصعب عايد كصب م.د زينة رياض صالح م.د ضياء مصطفى ذيبان
٢	الرابعة	تصاميم الحديد**II&I**	ان المنهج الخاص بمادة تصميم الحديد قد تم تحديثه خلال العام الدراسي الحالي ليكون متوافقا مع المواصفات الاحدث المعتمدة في الوقت الحالي وهي المواصفة الامريكية **(AISC)** للعام ٢٠١٦ والمدونة الامريكية **(AISC)** الاصدار الخامس عشر للعام ٢٠١٧ ، بالإضافة الى المصدر المنهجي (المعتمد في اعداد المحاضرات) الاحدث المتوفر حاليا بالإصدار السادس للعام ٢٠١٨ والمتوافق مع المدونة والمواصفة الامريكية اعلاه وكما هو مبين في مايلي: - **AISC Manual of Steel Construction, 15th Edition, 2017, American Institute of Steel Construction.** - **McCormac, J.C., "Structural Steel**	أ.م.د. ليث خالد كامل م.د. احمد عبد الحافظ مصطفى

	Design", 6th Edition, 2018. ان المنهج المعتمد من قبل قسمنا هو اكثر شمولا واتساعا من تلك المعتمدة في مناهج الجامعات اعلاه. حيث ان المنهج الخاص بقسمنا يقوم بتغطية مواضيع التحليل والتصميم لمعظم عناصر الحديد الانشائي. بناءا على ما تقدم لا نجد ضرورة او حاجة فعلية لتطوير او تحديث المنهج الحالي المعتمد لمادة تصميم الحديد في قسمنا في الوقت الحالي.			
أ.م.د .حسام كاظم رسن	إضافة الموضوع أدناه الى منهج الفصل الأول مع إضافة وحدة اضافية **Approximate Analysis of Statistically Indeterminate Structures** اضافة الموضوع أدناه الى منهج الفصل الثاني مع إضافة وحدة اضافية **Influence lines of Statistically Indeterminate Structures**	نظرية الانشاءات	الثالثة	٣
أ.م.د. أحمد فالح البياتي	ان المنهج المتبع بتدريس مادة تصاميم الخرسانة (I & II) متوافق مع المدونة الامريكية الاحدث (ACI-318-19)، وان المحاضرات قد اعدت بالاعتماد على الطبعة الاحدث من كتاب تصميم المنشآت الخرسانية المسلحة (Design of Concrete Structures 14h edition) للمؤلفين (Arthur Nilson, David Drawin, Charles Dolan) المتوافق مع المدونة الامريكية اعلاه. ان المنهج المتبع في قسمنا اكثر شمولا. استنادا لما ذكر، لا نجد ضرورة في تحديث المنهج الحالي.	تصاميم الخرسانة المسلحة I&II	الثالثة	٤
أ.م.د. ابراهيم سليم ابراهيم	ان درس ميكانيك المواد Mechanics of I (materials I) للصف الثاني في الفصل الدراسي الاول يتألف من ٣ ساعات نظري و ٢ ساعات مختبر لكن في الحقيقة نقوم بإعطاء اغلب الساعات للمادة النظرية للأسباب التالية: ١- عدم وجود الاجهزة المختبرية الكافية والتي ممكن ان تغطي كل التجارب. ٢- عدم توفر المساحات لاحتواء هذه الاجهزة في داخل مختبرات الهندسة المدنية حتى لو تم شراء هذه الاجهزة. لذا نقوم بإعطاء بعض التجارب حسب الاجهزة المتوفرة في مختبراتنا وهي: **Tensile test of steel, Compression test of mild steel and brittle material, Bending test.** علما ان هذه التجارب يأخذها الطلاب في الصف الاول في درس تكنلوجيا المواد. كذلك نقوم باطلاع الطلاب على الفديوات والمختبرات	ميكانيك المواد I	الثانية	٥

ثانيا:مقترحات تطوير المناهج الخاصة بدروس هندسة البيئة:

أ.المرحلة الثالثة:

١-تغيير عنوان درس (الهندسة الصحية I) الى:

Water Engineering أو (هندسة المياه)

- تضمين سفرة علمية الى محطة معالجة مياه الشرب ضمن مفردات المنهج ك (Assignment or Project) وتدخل ضمن تقييم الطلاب عند احتساب درجة السعي السنوي للمادة.

2-تغيير عنوان درس (الهندسة الصحية II) الى:

Wastewater Engineering أو (هندسة مياه الصرف الصحي)

- تضمين سفرة علمية الى محطة معالجة مياه المجاري ضمن مفردات المنهج ك (Assignment or Project) وتدخل ضمن تقييم الطلاب عند احتساب درجة السعي السنوي للمادة.

ب. المرحلة الرابعة:

١-تحويل مادة هندسة السباكة (Plumbing) من درس اختياري الى درس الزامي ويمكن ان يكون بدل درس تطبيقات الحاسوب.

- اضافة مادة ال(Hydraulic Design of Swimming Pools) لاستفادة الخريجيين منها.

السيد رئيس لجنة تطوير المناهج في قسم الهندسة المدنية المحترم

م/ مقترح اضافة مواد منتخبة

ارجو التفضل بالموافقة على اضافة المواد المنتخبة التالية الى الخطة الدراسية للدراسات الاولية في القسم وهي

١- مقدمة عن طريقة العناصر المحددة (Introduction to the Finite Element Method)
٢- مقدمة عن ديناميك المنشأت (Introduction to Dynamics of Structures)

والمعتمدة في الجامعات العالمية الرصينة للمرحلة المنتهية والتي تهيئ الطالب لانجاز مشاريع تخرج في مجال الهندسة الانشائية وهي مواد تمهيدية تهيئ الطالب مستقبلا للدرسات العليا كونها تعرف الطالب بتلك المواد المهمة. تم ملاحظة عدم وجود فهم والمام بتلك المواضيع لطلبة المشاريع في القسم في تخصص الانشاءات خلال السيمنر الذي تم عقده قبل حوالي الاسبوع.

مع التقدير

المرفقات

المناهج المقترحة

سي دي

أ.د. عادل عبد الامير محمد سعيد

Suggested Electives for B.Sc in Civil Engineering

Structures

Course Code	CE
Course Name	Introduction to the Finite Element Method
Credit	3.00 Credit
Contact Hour	3 hrs/week
Books Recommended	1. Introduction to Finite Elements in Engineering by Chandrupatla and Belegundu 2. Introductory Finite Element Methods by Desai 3. Textbook of Finite Elements Analysis by Seshu 4. Finite Element Procedures by Klaus & Gen
Content of Course	Introduction to finite element method as applied to stress analysis problems; basic equations in elasticity, matrix displacement formulation, element shapes, nodes, nodal unknowns, and coordinate system, shape functions, strain displacement matrix, methods for assembling stiffness equations e.g. direct approach, Galerkin's method, virtual work method, the principle of minimum potential energy; introduction to isoparametric formulation; discretization of a structure and mesh refinement, one-dimensional stress- deformation and two-dimensional plane stress and plane strain analysis of stress-deformation problems; numerical integration and computer application.

Course Code	CE
Course Name	Introduction to Dynamics of Structures
Credit	3.00 Credit
Contact Hour	3 hrs/week
Books Recommended	1. Introduction to Structural Dynamics by Biggs Mario Paz , Young Hoon Kim 2. Structural Dynamics, Theory, and Computation by 3. Dynamic of Structures by Anil k Chopra
Content of Course	Single degree of freedom system, formulation of the equation of motion; free vibration response; response to harmonic, impulse, and general dynamic loading; vibration analysis by Rayleigh's method; response spectra; two degrees of freedom system

السيد رئيس قسم الهندسة المدنية المحترم

م/ تحديث مناهج الدراسات الاولية/تخصص انشاءات

تحية طيبة...

ارفق لكم توصيات ومقترحات اعضاء اللجنة التدريسية بخصوص تحديث المناهج للدراسات الاولية/تخصص الانشاءات ومن خلال الاطلاع على مناهج الجامعات العالمية المشهورة في حقل الهندسة المدنية ومنها جامعتي تكساس في اوستن (The University of Texas at Austin) و جامعة مانشتر البريطانية (The University of Manchester).

للتفضل بالاطلاع مع التقدير

المرافقات/

- جدول المقترحات

زاهر نوري محمد

عضو لجنة تحديث المناهج

	RY9X_O8is-k 2- Tensile test on cast iron https://www.youtube.com/watch?v=U91zla8_oS4&pbjreload=101 3- Direct Shear Test on Mild Steel Rod https://www.youtube.com/watch?v=MpY3hcbStLc 4- Direct Shear Test on Mild Steel Plate https://www.youtube.com/watch?v=NBOwHpzqXeA 5- Compression test on mild steel https://www.youtube.com/results?search_query=compression+test+on+miled+steel 6- Compression test on cast iron https://www.youtube.com/watch?v=HMsouMEAqt8 لذا نقترح بإلغاء المختبر مع بقاء عدد ساعات الدرس (٥) ساعات للإيفاء بمتطلبات المادة العلمية علما ان اقسام الهندسة المدنية في الجامعات العراقية تقوم بإعطاء هذه المادة بشكل نظري فقط وكذلك اغلب الجامعات العالمية.		

UNIVERSITY OF LEEDS

Module and Programme Catalogue

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2024/25 Undergraduate Programme Catalogue

MEng, BEng Civil and Structural Engineering *(For students entering from September 2024 onwards)*

Programme code:	MEBECIV/SE-R	**UCAS code:**	H200
Duration:	4 Years	**Method of Attendance:**	Full Time
Programme manager:	Mohsen Besharat	**Contact address:**	M.Besharat@leeds.ac.uk

Total credits: 480

Entry requirements:

Entry Requirements are available on the Course Search entry

School/Unit responsible for the parenting of students and programme:

School of Civil Engineering

Examination board through which the programme will be considered:

Relevant QAA Subject Benchmark Groups:

Engineering

Professional Body Offering Accreditation:

Joint Board of Moderators (JBM) on behalf of the Engineering Council

Programme specification:

The information on this page is accurate for students entering the programme from September 2024. For students who entered the programme before September 2024, you can find the details of your programme: MEng, BEng Civil and Structural Engineering

1. Overview
Civil and structural engineering play a crucial role in shaping the built environment, encompassing a wide range of subjects such as roads, bridges, buildings, and the infrastructure for the supply of water and power. Our accredited civil and structural programmes are designed to provide students with a comprehensive education fully aligned with the requirements of the relevant professional institutions. Civil and structural engineers work on projects that combine skills and knowledge to deliver solutions, so there is a strong emphasis on project work throughout the degree. These programmes cover all major aspects of the discipline, with an emphasis on addressing global challenges and equipping students with the necessary skills to contribute meaningfully to solving these challenges.

Through engagement with a variety of real engineering problems our programmes promote and support an interdisciplinary approach. This enables graduates to collaborate effectively with professionals from other disciplines. Teaching and assessment are underpinned by the latest educational research, with a strong focus on project-based learning as exemplified by our Integrated Design Projects (IDPs). These projects take place in every year of these programmes and focus on designing real engineering solutions in collaboration with stakeholders, industry experts and other practitioners. They provide an excellent place for students to put into practice what they learn in other modules.

Students have access to excellent laboratory facilities, collaborative spaces and design studios. Our comprehensive computing equipment and library facilities provide access to all necessary resources as well as industry-standard software.

Qualified civil and structural engineers are in high demand. Upon graduation, students have plenty of opportunities to pursue exciting roles in the construction sector, international consultancies, local authorities, government departments, utility companies, and environmental organizations in both the UK and internationally. The skills and knowledge of our graduates allow them to contribute to projects that shape the world and make a positive impact on society.

2. Content and Structure [MEng BEng]
Our Integrated Masters programme in civil and structural engineering covers a broad range of topics, including but not limited to: Sustainability, Surveying, Construction Technology, Structural Analysis and Design, Properties of Materials, Engineering Mathematics, Water Engineering, Sustainable Engineering Solutions, Geotechnics, Highways Engineering, Wastewater Engineering, Environmental Health in Developing Countries, Circular Economy and Resource Recovery. We have a distinctive curriculum that has been reviewed in line with the ambitious Curriculum Redefined project, which aims to offer an enriching learning experience for all our students.

The first year of the programme focuses on fundamental engineering science, offering student opportunities to apply their knowledge in various contexts. This first year is common across all undergraduate civil engineering programmes to provide students with maximum flexibility. In the second year, students pursue a more specialised approach in their area of interest. In the third year, students engage in a research project in an area of their choice. Students enrolled in the integrated MEng BEng programme continue their studies into a fourth year and undertake a significant piece of independent research work which culminates in the submission of a dissertation. This extended period of study aims to enhance both th e breadth and depth of their knowledge while further developing their skills.

3. Study Abroad/Work Placement/Work Based Learning [MEng BEng]
Students on the Integrated Within the four-year MEng, BEng degree programme students have the exciting option to dedicate spend a year to studying abroad. This optional study abroad year does not lengthen extend the duration of your study; rather, it entails completing a year at one of the universities participating in our international partner programme. Studying abroad offers the opportunity to explore distant horizons while acquiring invaluable skills and experiences that can significantly strengthen employability and career prospects. An industrial placement is another fantastic opportunity. Students can gain experience, refine their skills and obtain a fuller understanding of the day-to-day work environment within a specific company or industry sector. Opting for a one-year industrial placement will extend the duration of your degree by an additional 12 months. Upon successful completion of this placement, you'll receive an 'industrial' designation in your degree title.

4. Distinctive Elements of Programme
· Students undertake an Integrated Design Project at each level of their degree, putting into practice what they learn in other modules.
· The programme develops a research-based learning approach, promoting both collaborative and independent learning from the start. This incorporates staff research and industrial expertise to enable students to explore new issues and find solutions.
· The programme enables graduates to address global challenges by embracing new concepts and technologies, and through acquiring essential transferable skills.

5. PRSB Accreditation
Accreditation is the assurance that a university course meets the quality standards established by the profession for which it prepares its students. This course is professionally accredited by the Joint Board of Moderators (JBM) on behalf of the Engineering Council. The JBM represents the five main professional bodies in the UK registering Civil Engineers, including the Institution of Civil Engineers (ICE), The Institution of Structural Engineers (IStructE), the Permanent Way Institution (PWI), Institute of Highway Engineers (IHE), and The Chartered Institution of Highways and Transportation (CIHT). The BEng degree is accredited as fully meeting the academic requirement for registration as an Incorporated Engineer (IEng), and partially meeting the academic requirement for registration as a Chartered Engineer (CEng), while the integrated master's degree (MEng, BEng) is accredited as fully meeting the academic requirement for registration as a Chartered Engineer (CEng). Our programmes are EUR-ACE labelled, which means they also meet the framework standards and guidelines of EUR-ACE, and that the accreditation is recognised by the member states of the European Higher Education Area.

Year1 - View timetable

[Learning Outcomes, Transferable (Key) Skills, Assessment]

Compulsory modules:

Candidates will be required to study the following compulsory modules

CIVE1165	Architecture and Sustainability	20 credits	Semesters 1 & 2 (Sep to Jun)

CIVE1265	Surveying, Construction Technology and Management	20 credits	Semester 2 (Jan to Jun)
CIVE1365	Structural Analysis and Design	20 credits	Semesters 1 & 2 (Sep to Jun)
CIVE1465	Materials, Water and Soils	20 credits	Semesters 1 & 2 (Sep to Jun)
CIVE1560	Engineering Mathematics and Modelling 1	20 credits	Semesters 1 & 2 (Sep to Jun)
CIVE1665	Integrated Design Project 1 (inc Design Studio 1)	20 credits	Semesters 1 & 2 (Sep to Jun)

Year2 - View timetable

[Learning Outcomes, Transferable (Key) Skills, Assessment]

We are currently refreshing our courses to make sure students have the best possible experience. Full module details for years 2 and 3 are not yet available. Before you enter years 2 and 3 details of modules for those years will be provided.

Compulsory modules:

Candidates will be required to study the following compulsory modules

- Structural Design and Materials 1 (40 Credits)

CIVE2470	Water Engineering and Geotechnics	20 credits	Semesters 1 & 2 (Sep to Jun)
CIVE2560	Engineering Mathematics and Modelling 2	20 credits	Semesters 1 & 2 (Sep to Jun)
CIVE2660	Integrated Design Project 2	20 credits	Semester 2 (Jan to Jun)

Optional modules:

Candidates will be required to study 20 credits from the following optional modules:

- Data and Research Methods for Engineers (10 Credits)

CIVE2081	Transport Planning and Modelling 1	10 credits	Semester 2 (Jan to Jun)
CIVE2250	Sustainable Engineering Solutions	10 credits	Semester 2 (Jan to Jun)
CIVE2260	Architectural History and Theory 2	10 credits	Semester 1 (Sep to Jan)
CIVE2550	Highway Engineering	10 credits	Semester 1 (Sep to Jan)
CIVE2815	Building Physics 1: Fundamental Principles	10 credits	Semester 2 (Jan to Jun)

Year3 - View timetable

[Learning Outcomes, Transferable (Key) Skills, Assessment]

We are currently refreshing our courses to make sure students have the best possible experience. Full module details for year 3 are not yet available. Before you enter year 3 full details of modules for that year will be provided.

Compulsory modules:

Candidates will be required to study the following compulsory modules

- Integrated Design Project 3 (40 Credits)
- Structural Design and Materials 2 (20 Credits)
- Water Engineering and Geotechnics 2 (20 Credits)

CIVE3750	Individual Research Project 1	20 credits	Semesters 1 & 2 (Sep to Jun)

Optional modules:

Candidates will be required to study 20 credits from the following optional modules: Students can select no more than 10 optional credits in semester 2.

CIVE3081	Transport Planning and Modelling 2	10 credits	Semester 2 (Jan to Jun)
CIVE3270	Architectural History and Theory 3	10 credits	Semester 1 (Sep to Jan)
CIVE3420	Wastewater Engineering	10 credits	Semester 2 (Jan to Jun)
CIVE3460	Environmental Health Engineering in Developing Countries	10 credits	Semester 1 (Sep to Jan)
CIVE3555	Highway Engineering 2	10 credits	Semester 1 (Sep to Jan)
CIVE3650	Computational Methods for Civil Engineering	10 credits	Semester 2 (Jan to Jun)
CIVE3820	Building Physics 2: Services Design	10 credits	Semester 1 (Sep to Jan)
SOEE3135	Engineering Geology	10 credits	Semester 2 (Jan to Jun)

Year4 - View timetable

[Learning Outcomes, Transferable (Key) Skills, Assessment]

We are currently refreshing our courses to make sure students have the best possible experience. Full module details for year 4 are not yet available. Before you enter year 4 full details of modules for that year will be provided.

Compulsory modules:

Civil Engineering Courses Plan

Level 1			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
ENGS 100	English language	6 (6,9,0)	
MATH 101	Differential Calculus	3 (3,1,0)	
ENT 101	Entrepreneurship	1 (1,0,0)	
CHEM 101	General Chemistry	4 (3,0,2)	
ARAB 100	Writing Skills	2 (2,0,0)	
Total		16	

Level 2			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
ENGS 110	English	6 (6,9,0)	
CUR 101	University Skills	3 (3,0,0)	
CT 101	IT skills	3 (0,0,6)	
STAT 101	Introduction to Statistics	3 (2,2,0)	
EPH 101	Health & fitness	1 (1,1,0)	
Total		16	
Level 3			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
IC 1xx	Optional IC course	2(2,0,0)	
PHYS 103	General Physics (1)	4(3,0,2)	

MATH 106	Integral Calculus	3(3,2,0)	MATH 101
MATH 107	Vectors & Matrices	3(3,2,0)	MATH 101
ENGL 109	Language & Communication	2(2,1,0)	
GE 104	Basics of Engineering Drawing	3(2,0,2)	
Total		17	
Level 4			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
PHYS 104	General Physics (2)	4 (3,0,2)	PHYS 103
ENGL 110	Technical Writing	2 (2,1,0)	ENGL 109
MATH 203	Differential and Integral Calculus	3 (3,2,0)	MATH 106, MATH 107
GE 106	Introduction to Engineering Design	3 (2,1,2)	GE 104

GE 201	Statics	3 (3,1,0)	MATH 106, MATH 107
GE 203	Engineering and Environment	2 (2,0,0)	CHEM 101, MATH 101
Total		17	
Level 5			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
IC 1xx	Optional IC course	2 (2,0,0)	
GE 202	Dynamics	3 (3,1,0)	GE 201, PHYS 103
CE 320	Fluids Mechanics	2 (2,1,0)	GE 202*
CE 302	Mechanics of Materials	3 (3,1,0)	GE 201
CE 305	Mechanics of Materials Lab.	1 (0,0,2)	CE302*
MATH 204	Differential Equations	3 (3,2,0)	MATH 203
GEO 281	Geology for Engineers	2 (2,1,0)	
Total		16	

Level 6			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
CE 324	Hydraulics	2 (2,1,0)	CE 320, GE202
CE 325	Hydraulics Lab.	1 (0,0,2)	CE 324*
CE 360	Structural Analysis-1	4 (4,1,0)	CE 302
CE 306	Properties and Testing of Structural Materials	3 (2,0,2)	CE 302, CE 305
CE 382	Geotechnical Eng.-1	2 (2,1,0)	CE 302, GEO 281
CE 380	Soil Mechanics Lab.	1 (0,0,2)	CE 382*
SE 212	Spatial Measurements	3 (2,1,2)	MATH 107
Total		16	
Level 7			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
IC 107	Ethics of the Profession	2 (2,0,0)	
CE 370	Reinforced Concrete Design-1	4 (4,1,0)	CE 360, CE 306

CE 481	Geotechnical Engineering-2	2 (2,1,0)	CE 382
CE 430	Transportation Systems	2 (2,1,0)	STAT 101
GE 209	Computer Programming	3 (2,0,2)	
CE 447	Water Supply and Drainage Systems	2 (2,1,0)	CE 424*
CE 424	Hydrology	2 (2,1,0)	CE 324
Total		17	
Level 8			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
CE 448	Water and Wastewater Treatment	2 (2,1,0)	GE 203, CE 324
CE 443	Water and Wastewater Lab.	1 (0,0,2)	CE 448*
CE 431	Highway Engineering	3 (3,1,0)	CE 382, SE 212, CE 430
CE 432	Highway Lab.	1 (0,0,2)	CE 380, CE 431*

MATH 254	Numerical Methods	3 (3,2,0)	MATH 107
CE 4xx	Department Elective (1)	3 (3,1,0)	
CE 4xx	Department Elective (2)	3 (3,1,0)	
Total		16	
Level 9			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
IC 1xx	Optional IC course	2 (2,0,0)	
ARCH 239	Building Construction for Civil Eng. Students	2 (1,0,2)	CE 370
CE 4xx	Department Elective (3)	3 (3,1,0)	
CE 4xx	Department Elective (4)	3 (3,1,0)	
CE 419	Construction Management	4 (4,1,0)	CE 370, CE 382
CE 483	Foundation Engineering	2 (2,1,0)	CE 370, CE 481

CE 496	Graduation Project -1	2 (2,0,0)	Complete successfully 129 credits hours and passing all courses in levels 1-7.
Total		18	
Level 10			
Course Code	Course Title	Cr. Hr. (X,Y,L)	Pre-requisite
xxxxxx	Free Course	2	CE 496
CE 497	Graduation Project -2	2 (2,0,0)	
CE 4xx	Department Elective (5)	3 (3,1,0)	
CE 4xx	Department Elective (6)	3 (3,1,0)	
GE 403	Engineering Economy	2 (2,1,0)	
GE 402	Engineering Projects Management	3 (3,1,0)	Successful completion of 110 credit hrs. and passing all courses in levels 1-7.
CE 999	Practical Training	1 (NP)	Complete successfully 129 credits hours
Total		16	

(https://wa.me/?
ksu.edu.sa/en/civil_engineering_courses_plan)

(mailto:?subject=Civil Engineering Courses
Plan&body=Check out this site
http://engineering.ksu.edu.sa/en/civil_engineering_courses_plan)

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بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـم المحضر:06
تأريخ المحضر: **2023/11/15**

محضر الاجتماع السادس للجنة العلمية للعام الدراسي 2023-2024

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/هـ.ن/1304/2/1 في 2023/10/04، اجتماعها السادس في يوم الاربعاء الموافق 2023/11/15 برئاسة أ.د.عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: مادة منهج علم الارض

اشارة الى كتاب رئاسة جامعة النهرين – قسم التسجيل وشؤون الطلبة – شعبة التسجيل والقبول ذي العدد 1600/2/4 في 2023/10/22 وتوجيه السيد العميد المحترم بتاريخ 2023/10/24 والمتضمن ابداء الرأي من خلال اللجنة العلمية حول ماورد بكتاب وزارة التعليم العالي – دائرة الدراسات والتخطيط والمتابعة – القبول المركزي ذي العدد م5/ق/7142 في 2023/10/10 والخاص بمادة منهج علم الأرض لغرض تكييف المناهج الخاصة بالمادة آنفة الذكر، وبعد عرض الموضوع على اللجنة العلمية بتاريخ 2023/11/15، اوصت بما يلي:

التوصية: أوصت اللجنة بحذف الفصل الخامس من المنهج المرسل طي كتاب رئاسة الجامعة اعلاه والمعنون "المتحجرات والزمن الجيولوجي" كونه في التخصص الدقيق لعلم الارض ولا يتوافق مع متطلبات دراسة مادة علم الارض في مستوى المرحلة الاعدادية.

ثانيا: اضافة مادة منهج البحث العلمي في الدراسات العليا

ناقشت اللجنة موضوع اضافة مادة منهج البحث العلمي في الدراسات العليا بموجب كتاب رئاسة الجامعة /قسم شؤون الدراسات العليا/شعبة الاوامر الجامعية –وحدة الوثائق والتاييدات والعلاقات الثقافية ذي العدد 535 في 2023/5/9 والمعطوف كتاب وزارة التعليم العالي والبحث العلمي ذي العدد ب ت 3471/5 في 2023/5/4، واوصت بما يلي:

التوصية: اوصت اللجنة باضافة المادة ضمن الخطة الدراسية في الدراسات العليا (الماجستير والدكتوراه) لتكون ضمن خطة الفصل الثاني وبواقع وحدتين دراسيتين وتعديل الوحدات الدراسية الخاصة بالماجستير لتتوافق مع المحددات المنصوص عليها في التعليمات والخاصة بعدد الوحدات الدراسية وبموجب الخطة الدراسية المرفقة.

ثالثا: مقررات نظام بولونيا للدراسات الاولية

ناقشت اللجنة الخطة النهائية المعدة من قبل القسم والخاصة بمقررات نظام بولونيا للدراسات الاولية وبعد اجراء بعض التعديلات عليها، اوصت بما يلي

التوصية: اوصت اللجنة بالمصادقة على الخطة النهائية المقترحة.

رابعا: احتساب شهادة الماجستير للمهندسة زهراء طالب هاشم

ناقشت اللجنة الطلب المقدم من قبل م. زهراء طالب هاشم من المعينين حديثا والتي تروم احتساب شهادة الماجستيرفي الهندسة المدنية/هندسة الطرق والمواصلات والحاصلة عليها من جامعة بغداد بموجب الامر الجامعي ذي العدد د.ن/2240 في 2023/4/10 واوصت بما يلي:

التوصية: اوصت اللجنة بالموافقة على احتساب شهادة الماجستير كونها من جامعة رصينة وتخصصها ضمن الهيكلية العلمية للقسم.

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

جامعة النهرين كلية الهندسة قسم الهندسة المدنية		محضر اللجنة العلمية رقـم المحضر:06 تأريخ المحضر: 2023/11/15

أ.م.د. ضياء مصطفى ذيبان	أ.م.د. حسن موسى جواد	أ.م.د. هيثم علاء حسين	أ.د. حاتم عبد الكريم رشيد	أ.د. مصعب عايد كصب
عضوا ومقررا	عضوا	عضوا	عضوا	عضوا
2023/11/15	2023/11/15	2023/11/15	2023/11/15	2023/11/15

أ.د. علاء حسين عبد حافظ	أ.د.أحمد سلطان علي	أ.د.جبار حمود عبد النبي البيضاني	أ.د. عبد العزيز عبد الرسول عزيز
عضوا	عضوا	عضو	رئيس اللجنة العلمية
2023/11/15	2023/11/15	2023/11/15	2023/11/15

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقـم المحضر:8
تأريخ المحضر: **2023/02/23**

محضر الاجتماع الثامن للجنة العلمية للعام الدراسي 2022-2023

عقدت اللجنة العلمية في قسم الهندسة المدنية والمشكلة بموجب الأمر الاداري ذي العدد/ هـ.ن/1602/2/1 في 2022/10/02، اجتماعها السابع في يوم الخميس الموافق 2023/02/23 برئاسة أ.د.عبد العزيز عبد الرسول عزيز رئيس اللجنة العلمية وبحضور السادة أعضاء اللجنة، حيث تمت مناقشة مايلي:

أولا: التخصص الدقيق للمدرس رنا اسماعيل خليل

اطلعت اللجنة العلمية على هامش السيد العميد على كتاب قسم الهندسة المدنية ذو العدد هـ.ن.م.د.س/18 في 2023/02/06 والذي يبين التخصص الدقيق للمدرس رنا اسماعيل خليل وبعد الاطلاع على الاوليات توصي اللجنة بما يلي:

التوصية: توصي اللجنة بأن التخصص الدقيق للمدرس رنا اسماعيل خليل هو هندسة مدنية / انشاءات.

ثانيا: منح مجانية للدراسات الاولية والعليا

اطلعت اللجنة على كتاب رئاسة الجامعة – قسم الشؤون العلمية والعلاقات الثقافية ذي العدد 1984/4/2 في 2023/02/15 والمتضمن تزويدهم بالتخصصات المطلوبة لقبول طلبة من جنسيات متعددة (غير العراقيين) وضمن الطاقة الاستيعابية، واشارة الى محضر اللجنة العلمية السادس في 2023/01/22 وتعديلاته من عمادة الكلية وايمانا من اعضاء اللجنة العلمية بالمشاركة في تعزيز التبادل الثقافي والارتقاء بالمستوى العلمي للجامعة، توصي اللجنة مايلي:

التوصية:

قبول طلاب المنح المجانية للماجستير والدكتوراه (ضمن الطاقة الاستيعابية المحددة من عمادة الكلية للقسم) وتكون مقعد واحد للماجستير ومقعد واحد للدكتوراه.

ثالثا: مقترحات تطوير مناهج قسم الهندسة

اطلعت اللجنة على المذكرة المقدمة من قبل أ.د. جبار حمود عبد النبي رئيس لجنة تطوير المناهج وبعد اجراء مناقشات مستفيضة توصي اللجنة مايلي:

التوصية: المصادقة على محضر لجنة تطوير المناهج بعد اجراء التغييرات اللازمة وحسب المرفق رقم 1.

رابعا: الدروس الاختيارية في الدراسات الاولية والعليا وعدد الوحدات الخاصة بها

ناقشت اللجنة عدد الساعات المحددة للدروس الالزامية والاختيارية للدراسات الاولية العليا وتوصي اللجنة بمايلي:

التوصية: تكون عدد الساعات في الدروس الاختيارية للدراسات الاولية والعليا هي ساعتين بسبب ان عدد وحدات الدروس الاختيارية هي وحدتين فقط.

وبهذا اختتم المحضر

بسم الله الرحمن الرحيم

جامعة النهرين
كلية الهندسة
قسم الهندسة المدنية

محضر اللجنة العلمية
رقم المحضر:8
تأريخ المحضر: **2023/02/23**

أ.م.د. حسن موسى جواد	**أ.د. حاتم عبد الكريم رشيد**	**أ.د. مصعب عايد كصب**	**أ.د. أحمد سلطان علي**
عضوا ومقررا للجنة	**عضوا**	**عضوا**	**عضوا**
2023/02/23	**2023/02/23**	**2023/02/23**	**2023/02/23**

أ.د.محمود صالح مهدي	**أ.د. علاء حسين عبد حافظ**	**أ.د. عادل عبد الامير محمد**	**أ.د.جبار حمود عبد النبي البيضاني**
عضوا	**عضوا**	**عضوا**	**عضو**
2023/02/23	**2023/02/23**	**2023/02/23**	**2023/02/23**

أ.د. عبد العزيز عبد الرسول عزيز

رئيس اللجنة العلمية

2023/02/23

REPUBLIC OF IRAQ
MINSTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH
AL-NAHRAIN UNIVERSIT Y
COLLEGE OF NGINEERING

Department of Civil Engineering

بسم الله الرحمن الرحيم

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة النهرين
كلية الهندسة

قسم الهندسة المدنية

العدد : هـ.ن.د.م/١٣
التاريخ : ٦/ ٢ / ٢٠٢٣

(سري)

الى اللجنة العلمية م

السيد عميد كلية الهندسة المحترم

م/ تخصص دقيق

تحية طيبة..

٢/٦

نود اعلامكم ان التخصص الدقيق للتدريسية م. رنا اسماعيل خليل هو هندسة مدنية – انشاءات

وحسب المرفقات طي كتابنا.

تفضلكم بالاطلاع واصدار أمدر أداري ان نسبتم ذلك.. مع التقدير

المرفقات:

- الامر الجامعي الخاص بمنح شهادة الماجستير
- وثيقة الدرجات لشهادة الماجستير

أ.د. مصعب عايد كصب

رئيس القسم

٢٠٢٣/٢/٦

اللجنة العلمية/ أ.د. ...
يعرض في الاجتماع القادم

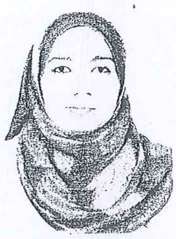
نسخة منه الى/

- ملف اللجنة العلمية

E-Mail: civildept@eng.nahrainuniv.edu.iq

Republic of Iraq
Ministry of Higher Education
and Scientific Research
Al-Nahrain University

College of Engineering
Registration Office
0301- MF-047285
Ref: 616 - 0301
Date: 1-4-2012



TRANSCRIPT OF RECORD

Re.: **Rana Ismael Khaleel Zaki**

This is to certify that the above-named joined this College in September 2001 to read for M.Sc. degree in Civil Engineering. She was awarded the degree of M.Sc. in Civil Engineering (Structural Engineering) in August 2004.

The title of her M.Sc. thesis was **"Analysis of Curved Girder Steel Bridges by Grillage Method "**. Her average mark over her entire study period is 72.809 %.

No.	SUBJECT	QUARTER	UNITS	MARK
1.	Theory of Elasticity	I	3	71
2.	Numerical Methods	I	3	67
3.	Plastic Analysis of Structures	I	3	69
4.	Advanced Steel Design	I	3	68
5.	Advanced Structural Design I	I	3	65
6.	Advanced Structural Analysis	II	3	68
7.	Advanced Engineering Mathematics	II	3	68
8.	Advanced Foundation Engineering	II	3	66
9.	Dynamics of Structures	II	3	67
10.	Advanced Structural Design II	II	3	73
11.	Bridges Design*	III	3	63
12.	Theory of Elastic Stability	III	3	71
13.	Theory of Plates and Shells	III	3	77
14.	Prestressed Concrete Design**	III	3	73
15.	Finite Element Method	III	3	71
16.	Bridges Design	IV	3	81
17.	Prestressed Concrete Design	IV	3	83
18.	M.Sc. Thesis	-	12	82

Remarks:

1- Minimum Passing Mark is 65%. Minimum Overall Passing Average is 70%.
2- (*) Passed at second attempt.
3- (**) Indicates that the student has re-examined these subjects in order to improve her cumulative average to 70%.

0301-MF-047285

mohammed
Mohammed Sabah Mohammed
Registrar

M.J.Jweeg
Prof. Dr. Muhsin J. Jweeg
Dean

Prof. Dr. Mohammad Jabir Ali
President, Al-Nahrain University

0301-MF-047285-E1781 Note: the document contains two hidden UV transparent logos of Al-Nahrain University

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جمهورية العراق
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جامعة النهريـــن
كليــة الهندســـة

قسم الهندسة المـــدنيـــة

العـدد :
الـتاريخ : / /

(سري)

السيد عميد كلية الهندسة المحترم

م/ تخصص دقيق

تحية طيبة..

اشارة الى محضر اللجنة العلمية رقم 8 بتاريخ 2023/02/23 والمرفق نسخة منه طيا والحاقا بكتابنا ذي العدد هـ.ن.م.د.س/ 18 في 2023/02/06، نود اعلامكم ان التخصص الدقيق للتدريسية م. رنا اسماعيل خليل هو هندسة مدنية – انشاءات وحسب المرفقات طي كتابنا.

تفضلكم بالاطلاع واصدار أمدر أداري ان نسبتم ذلك.. مع التقدير

<u>المرفقات:</u>

- الامر الجامعي الخاص بمنح شهادة الماجستير
- وثيقة الدرجات لشهادة الماجستير
- نسخة من محضر اللجنة العلمية رقم 8

أ.د. مصعب عايد كصب

رئيس القسم

٢٠٢٣/٢/٢٨

نسخة منه الى/

- ملف اللجنة العلمية