

# Al-Nahrain University

## جامعة النهرين



*First Cycle – Bachelor's degree (B.Sc.) – Biomedical Engineering*

بكالوريوس علوم - هندسة الطب الحيوي



## Table of Contents | جدول المحتويات

|                                      |                                      |
|--------------------------------------|--------------------------------------|
| 1. Mission & Vision Statement        | بيان المهمة والرؤية                  |
| 2. Program Specification             | مواصفات البرنامج                     |
| 3. Program Goals                     | أهداف البرنامج                       |
| 4. Program Student learning outcomes | مخرجات تعلم الطالب                   |
| 5. Academic Staff                    | الهيئة التدريسية                     |
| 6. Credits, Grading and GPA          | الاعتمادات والدرجات والمعدل التراكمي |
| 7. Modules                           | المواد الدراسية                      |
| 8. Contact                           | اتصال                                |

### 1. Mission & Vision Statement

#### ***Vision Statement***

The vision of biomedical engineering is to improve human health and enhance the quality of life through the application of engineering principles and techniques to the field of medicine and biology. Biomedical engineers strive to develop innovative solutions, technologies, and devices that address healthcare challenges, advance medical treatments, and improve patient care.

#### ***Mission Statement***

The mission of biomedical engineering is to apply engineering principles and techniques to healthcare and medicine with the goal of improving human health and well-being. The field encompasses a broad range of activities, and the mission of biomedical engineering can be summarized as follows:

- i. **Development of Innovative Solutions:** Biomedical engineers work to provide creative solutions for healthcare problems.
- ii. **Integration of Engineering and Medicine:** Biomedical engineering seeks to bridge the gap between engineering and medicine by combining scientific knowledge, engineering principles, and medical expertise. The mission is to integrate these disciplines to develop effective and safe healthcare solutions.
- iii. **Collaboration and Interdisciplinary Research:** Biomedical engineers work collaboratively with healthcare professionals, scientists, and researchers from various fields. The mission is to

foster interdisciplinary research and collaboration to tackle complex biomedical problems and advance medical knowledge.

- iv. **Improving Health Outcomes:** Biomedical engineering aims to improve health outcomes by developing technologies and approaches that enable early and accurate diagnosis, effective treatments, and improved patient care. This includes developing tools for personalized medicine, precision therapies, and advanced imaging techniques.
- v. **Enhancing Quality of Life:** Biomedical engineers work to enhance the quality of life for individuals with disabilities or medical conditions. This involves designing and developing assistive technologies, rehabilitation devices, and prosthetics to improve mobility, communication, and overall well-being.
- vi. **Ethical and Responsible Practice:** Biomedical engineers are committed to upholding high ethical standards in their work. The mission is to ensure the responsible and safe use of technologies, protection of patient privacy, and adherence to regulatory guidelines.
- vii. **Education and Training:** Biomedical engineering promotes education and training programs to equip future professionals with the knowledge and skills required for the field. The mission is to foster the development of competent and ethical biomedical engineers who can contribute to advancing healthcare.

## 2. **Program Specification**

|                      |                        |                              |           |
|----------------------|------------------------|------------------------------|-----------|
| <b>Program code:</b> | BSc-BME                | <b>ECTS</b>                  | 300       |
| <b>Duration:</b>     | 5 levels, 10 Semesters | <b>Method of Attendance:</b> | Full Time |

Biomedical engineers use their technological knowledge and understanding to improve human lives. In this Program, you will gain the technical expertise to design, develop, and optimize innovative medical devices and technologies that improve patient care and advance the field of healthcare. The Program prepares graduates to work in a wide range of technology areas from imaging and diagnosis to monitoring and treatment.

In the core modules, you will learn the basics of engineering math, electronics and mechanics, programming skills, statistical and data analysis tools in the first two years. Through elective modules, you will have the option to learn about a diverse range of topics relevant to diagnosis and treatment of disease, biomechanics and development of medical devices. Program-specific core topics are covered at Level 3 preparing for research-led subject specialist modules at Levels 4 and 5.

In addition to the main Program content, the department hold regular seminars and workshops, practical training in hospitals and maintenance centers during the summer vacation in the last two

years of study to deepen and broaden your understanding of the Bioengineering field. Students would be also facilitated to visit hospitals and healthcare centers to acquire acquaintance of medical tools and equipment.

### **3. Program Goals**

**Understanding of Human Anatomy and Physiology:** Biomedical engineering graduates are expected to have a solid understanding of human anatomy and physiology, including the structure and function of various organs and systems in the human body.

**Systems Physiology and Modeling:** Graduates should have a solid understanding of human physiology and the ability to model physiological systems. This includes knowledge of cardiovascular, respiratory, neurological, and musculoskeletal systems, and the ability to develop mathematical models to simulate and analyze physiological processes.

**Medical Instrumentation and Equipment:** Graduates should be familiar with the design, operation, and maintenance of medical instruments and equipment used in healthcare settings. This includes knowledge of medical imaging systems, monitoring devices, prosthetics, and other medical devices.

**Biomechanics and Biomaterials:** Graduates should have knowledge of biomechanical principles and biomaterials used in biomedical applications. This includes understanding the mechanical behavior of biological tissues, the interaction between materials and the human body, and the selection and evaluation of biomaterials for specific purposes.

**Medical Imaging and Signal Processing:** Biomedical engineering graduates should be familiar with various medical imaging modalities such as X-ray, ultrasound, magnetic resonance imaging (MRI), and computed tomography (CT). They should also possess skills in signal processing techniques to extract and analyze information from medical images and signals.

**Medical Device Design and Development:** Graduates should have the ability to design and develop medical devices and systems. This involves understanding user needs, translating them into engineering specifications, conducting prototyping and testing, and ensuring compliance with regulatory standards.

**Design and Innovation:** Biomedical engineering graduates should be capable of designing innovative solutions to address healthcare challenges. This includes skills in problem identification, needs assessment, concept generation, prototyping, and testing.

**Biomedical Data Analysis:** Graduates should be competent in analyzing and interpreting biomedical data, such as physiological signals, patient records, and clinical trial data. This includes skills in statistical analysis, data mining, and bioinformatics.

**Regulatory Compliance and Ethical Considerations:** Graduates should be aware of the regulatory frameworks and standards governing the development and use of medical devices and technologies.

They should also have a strong understanding of ethical considerations, including patient privacy, informed consent, and the responsible use of biomedical technologies.

**Research and Innovation:** Biomedical engineering graduates should be prepared to engage in research activities and contribute to the advancement of knowledge in the field. This involves skills in experimental design, data collection and analysis, and the ability to critically evaluate scientific literature.

## **4. Student Learning Outcomes**

A biomedical engineering graduate is prepared for a career in today's marketplace and positioned to meet the possible challenges of the future. They are an adaptable problem solver with experience using their expertise to synthesize engineering solutions.

### **Outcome 1**

#### *Engineering Knowledge*

Biomedical engineering graduates should have a solid understanding of the foundational principles and concepts of engineering and their application to biomedical systems.

### **Outcome 2**

#### *Problem Solving*

Graduates should be able to identify, formulate, and solve engineering problems, including those related to biomedical systems. This involves analyzing problems, designing and implementing solutions, and evaluating their effectiveness.

### **Outcome 3**

#### *Design and Development of Solutions*

Biomedical engineering graduates should be capable of designing systems, components, or processes to meet specific needs within realistic constraints, considering factors such as safety, ethics, and societal impacts.

### **Outcome 4**

#### *Experimentation and Data Analysis*

Graduates should be proficient in designing and conducting experiments, as well as analyzing and interpreting data to draw meaningful conclusions and make informed engineering decisions.

### **Outcome 5**

#### *Teamwork and Communication*

Biomedical engineers often work as part of multidisciplinary teams. Graduates should be able to effectively collaborate and communicate with team members from diverse backgrounds to achieve common goals.

## Outcome 6

### *Professionalism and Ethics*

Biomedical engineers should demonstrate professionalism, ethical behavior, and responsibility in their engineering practice. They should understand the societal and environmental impacts of their work and make ethical decisions accordingly.

## Outcome 7

### *Lifelong Learning*

Given the rapidly evolving nature of technology and healthcare, biomedical engineers should have a commitment to continuous learning and professional development throughout their careers. They should be able to engage in self-directed learning and adapt to new technologies and practices.

## 5. Academic Staff

Jamal Abduljabar Hassan | Ph.D. in Applied Medical Physics | Professor  
Email: jamal.a.hassan@nahrainuniv.edu.iq

---

Nabeel Kadim Abid AL- Sahib | Ph.D. Mechanical Engineering | Professor  
Email: nabeel.kadhim@nahrainuniv.edu.iq

---

Sadiq Jaafar Hamandi | Ph.D. in Mechanical Engineering | Assistant Prof.  
Email: sadiq.j.abbas@nahrainuniv.edu.iq

---

Auns Qusai Hashim Al-Neami | Ph.D. in Analysis and processing of biomedical signals | Assistant Prof.  
Email: auns.q.hashim@nahrainuniv.edu.iq

---

Ahmed Faeq Hussein | Ph.D. in computer systems engineering | Assistant Prof.  
Email: ahmed.f.hussein@nahrainuniv.edu.iq

---

Sufian Munther Salih | Ph.D. in statistics and computers | Assistant Prof.  
Email: sufian.m.salih@nahrainuniv.edu.iq

---

Hadeel Kassim Wadi Aljobouri | Ph.D. in Biomedical Engineering | Assistant Prof.  
Email: hadeel.k.aljobouri@nahrainuniv.edu.iq

---

Logean qadri ibrhium | Ph.D. in Glass and ceramic engineering | Assistant Prof.  
Email: logean.q.ibrhium@nahrainuniv.edu.iq

---

Rana Ibrahim Mahmood | Ph.D. in Zoology | Assistant Prof.

Email: rana.i.mahmood@nahrainuniv.edu.iq

---

Hassanain Ali Lafta Mossa | Ph.D. in Biomedical Engineering | Lecturer

Email: hassanain.a.lafta@nahrainuniv.edu.iq

---

Salman Majid Salman | Ph.D. in Electronics and communications engineering | Lecturer

Email: salman.m.salman@nahrainuniv.edu.iq

---

Aseel Mohammed Ali | Ph.D. in Biomedical Engineering | Lecturer

Email: aseel.m.ali@nahrainuniv.edu.iq

---

Samar Ali Jaber | Ph.D. in Biomedical Engineering | Lecturer

Email: samar.a.jaber@nahrainuniv.edu.iq

---

Alaa Ayyed Jebur Al-Taie | Ph.D in Biomedical Engineering | Lecturer

Email: alaa.ayyed@nahrainuniv.edu.iq

---

Basma Abdulsahib Faihan | Ph.D. in Biomedical Engineering | Lecturer

Email: basma.a.faihan@nahrainuniv.edu.iq

---

Muna Mustafa Kareem | Ph.D. in Biomedical Engineering | Lecturer

Email: Muna.kareem@nahrainuniv.edu.iq

---

Hussain Abd Jaber | Ph.D. in Biomedical Engineering | Lecturer

Email: hussainjaber2000@nahrainuniv.edu.iq

---

Mais Odai Abdul Rassul | Ph.D. in Biomedical Engineering | Lecturer

Email: mais.o.abdulrassul@nahrainuniv.edu.iq

---

Ali Mahdi Miftin | Ph.D. in Civil Engineering | Lecturer

Email: ali.m.miftin@nahrainuniv.edu.iq

---

Eman Ghadhbhan Khalil | Ph.D. in pathology/immunopathology | Lecturer

Email: eman.g.khalil@nahrainuniv.edu.iq

---

Jassim Mohammed Sahan | Ph.D. in Electronic and Communication Engineering | Lecturer

Email: jassim.m.sahan@nahrainuniv.edu.iq

---

Dunia Tahseen Nema Al-Aridhi | Ph.D. in Clinical Biochemistry | Lecturer

Email: dunia.t.nema@nahrainuniv.edu.iq

---

Qais Ahmed Habash | M.Sc. Biomedical Engineering | Lecturer

Email: qais.a.habash@nahrainuniv.edu.iq

---

Noor Ali Sadek | M.Sc. Biomedical Engineering | Assistant Lec.

Email: noor.a.sadek@nahrainuniv.edu.iq

---

Hamza Abbas Fadhil Ibrahim | M.Sc. Biomedical Engineering | Assistant Lec.

Email: hamza.abbas@nahrainuniv.edu.iq

---

Reem Shakir Mahmood | M.Sc. Biomedical Engineering | Assistant Lec.

Email: reem.sh.mahmood@nahrainuniv.edu.iq

---

Faten Imad Ali | M.Sc. Biomedical Engineering | Lecturer

Email: faten.imad@nahrainuniv.edu.iq

---

Doaa Nawfal Hazim | M.Sc. Electronics and communication Engineering | Assistant Lec.

Email: Doaanawfal@nahrainuniv.edu.iq

---

Zaid Mustafa Khudair | M.Sc. Electronics and communication Engineering | Assistant Lec.

Email: zaid.mustafa.kh@nahrainuniv.edu.iq

---

Abdullah Nasser Ibraheem | M.Sc. Electronics and communication Engineering | Assistant Lec.

Email: a.alsaqabi92@nahrainuniv.edu.iq

---

Arkan Saad Mohammed | M.Sc. Materials Engineering | Assistant Lec.

Email: arkan.alkzzaz@gmail.com

---

Ahmed Lateef Khudarahm | M.Sc. Electronics and communication Engineering | Assistant Lec.

Email: ahmed.lateef771@nahrainuniv.edu.iq

---

Fatima Ibrahim Yasser | M.Sc. Electronics and communication Engineering | Assistant Lec.

Email: engfatima09@nahrainuniv.edu.iq

---

## 6. Credits, Grading and GPA

### Credits

Al-Nahrain University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 300, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

### Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

| GRADING SCHEME                                                                                                                                                                                                                                                                                                                                                           |                  |                     |           |                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------|-----------|---------------------------------------|
| مخطط الدرجات                                                                                                                                                                                                                                                                                                                                                             |                  |                     |           |                                       |
| Group                                                                                                                                                                                                                                                                                                                                                                    | Grade            | التقدير             | Marks (%) | Definition                            |
| Success Group<br>(50 - 100)                                                                                                                                                                                                                                                                                                                                              | A - Excellent    | امتياز              | 90 - 100  | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                          | B - Very Good    | جيد جدا             | 80 - 89   | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                          | C - Good         | جيد                 | 70 - 79   | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                          | D - Satisfactory | متوسط               | 60 - 69   | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                          | E - Sufficient   | مقبول               | 50 - 59   | Work meets minimum criteria           |
| Fail Group<br>(0 – 49)                                                                                                                                                                                                                                                                                                                                                   | FX – Fail        | راسب - قيد المعالجة | (45-49)   | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                          | F – Fail         | راسب                | (0-44)    | Considerable amount of work required  |
|                                                                                                                                                                                                                                                                                                                                                                          |                  |                     |           |                                       |
| Note:                                                                                                                                                                                                                                                                                                                                                                    |                  |                     |           |                                       |
| Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above. |                  |                     |           |                                       |

### Calculation of the Cumulative Grade Point Average (CGPA)

- The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a 5-year B.Sc. degree:

$$CGPA = [ (1^{st} \text{ module score} \times ECTS) + (2^{nd} \text{ module score} \times ECTS) + ..... ] / 300$$

## 7. Curriculum/Modules

### Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

| Code    | Module                                  | SSWL | USSWL | ECTS | Type | Pre-request |
|---------|-----------------------------------------|------|-------|------|------|-------------|
| CREQ180 | Chemistry                               | 79   | 46    | 5.00 | B    |             |
| MATH110 | Mathematics I                           | 78   | 47    | 5.00 | B    |             |
| UREQ111 | Computer Fundamentals and Programming I | 63   | 37    | 4.00 | B    |             |
| CREQ110 | Engineering Drawings I                  | 63   | 62    | 5.00 | S    |             |
| BIOL110 | Biology                                 | 48   | 52    | 4.00 | B    |             |
| MDER110 | Electrical Circuits I                   | 94   | 31    | 5.00 | B    |             |
| HUDE110 | Human Rights+ Democracy                 | 33   | 17    | 2.00 | S    |             |

### Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

| Code    | Module                                   | SSWL | USSWL | ECTS | Type | Pre-request |
|---------|------------------------------------------|------|-------|------|------|-------------|
| PHYS110 | Physics                                  | 93   | 57    | 6.00 | B    |             |
| MATH120 | Mathematics II                           | 78   | 72    | 6.00 | B    |             |
| CREQ121 | Computer Fundamentals and Programming II | 64   | 61    | 5.00 | B    |             |
| CREQ120 | Engineering Drawing II                   | 78   | 47    | 5.00 | S    |             |
| MDER120 | Electrical Circuits II                   | 94   | 56    | 6.00 | B    |             |
| CREQ120 | Workshop                                 | 48   | 2     | 2.00 | B    |             |

**Semester 3 | 30 ECTS | 1 ECTS = 25 hrs**

| Code    | Module                          | SSWL | USSWL | ECTS | Type | Pre-request |
|---------|---------------------------------|------|-------|------|------|-------------|
| MDER210 | Electronics I                   | 94   | 56    | 6.00 | C    |             |
| MDER211 | Engineering Mechanics I         | 78   | 72    | 6.00 | B    | MATH110     |
| MDER212 | Numerical Analysis              | 78   | 47    | 5.00 | S    | MATH110     |
| MDER213 | Anatomy I                       | 94   | 31    | 5.00 | C    |             |
| MATH210 | Mathematics III                 | 78   | 72    | 6.00 | B    |             |
| CREQ122 | Crimes of Defuncted Baath Party | 33   | 17    | 2.00 | S    |             |

**Semester 4 | 30 ECTS | 1 ECTS = 25 hrs**

| Code    | Module                   | SSWL | USSWL | ECTS | Type | Pre-request |
|---------|--------------------------|------|-------|------|------|-------------|
| MDER220 | Electronics II           | 124  | 26    | 6.00 | C    | MDER120     |
| MDER221 | Engineering Mechanics II | 93   | 32    | 5.00 | B    | MATH120     |
| MDER222 | Anatomy II               | 79   | 46    | 5.00 | C    |             |
| MATH220 | Mathematics IV           | 78   | 72    | 6.00 | B    |             |
| MDER223 | Introduction to BME      | 33   | 67    | 4.00 | C    |             |
| UREQ121 | English I+II             | 48   | 52    | 4.00 | S    |             |

**Semester 5 | 30 ECTS | 1 ECTS = 25 hrs**

| Code    | Module               | SSWL | USSWL | ECTS | Type | Pre-request |
|---------|----------------------|------|-------|------|------|-------------|
| MDER310 | Elective I           | 48   | 52    | 4.00 | E    |             |
| MDER311 | Engineering Analysis | 78   | 47    | 5.00 | C    |             |

|         |                                     |    |    |      |   |         |
|---------|-------------------------------------|----|----|------|---|---------|
| MDER312 | Optical Systems Design              | 63 | 37 | 4.00 | C | PHYS110 |
| MDER313 | Physiology I                        | 79 | 46 | 5.00 | C |         |
| MDER314 | Medical Measurement Instrumentation | 94 | 56 | 6.00 | C | MDER210 |
| MDER315 | Biomaterials I                      | 93 | 57 | 6.00 | C |         |

**Semester 6 | 30 ECTS | 1 ECTS = 25 hrs**

| Code    | Module                      | SSWL | USSWL | ECTS | Type | Pre-request |
|---------|-----------------------------|------|-------|------|------|-------------|
| CREQ320 | Engineering Statistics      | 63   | 62    | 5.00 | S    | MATH110     |
| MDER320 | Mechanics of Materials      | 123  | 27    | 6.00 | C    | MDER211     |
| MDER321 | Physiology II               | 79   | 46    | 5.00 | C    |             |
| MDER322 | Therapeutic Instrumentation | 79   | 71    | 6.00 | C    |             |
| MDER323 | Biomaterials II             | 63   | 37    | 4.00 | C    |             |
| UREQ320 | English III+IV              | 48   | 52    | 4.00 | S    |             |

**Semester 7 | 30 ECTS | 1 ECTS = 25 hrs**

| Code    | Module                        | SSWL | USSWL | ECTS | Type | Pre-request |
|---------|-------------------------------|------|-------|------|------|-------------|
| MDER410 | Elective II                   | 63   | 37    | 4.00 | E    |             |
| MDER411 | Biomechanics I                | 79   | 71    | 6.00 | C    | MDER211     |
| MDER412 | Signal Processing             | 63   | 37    | 4.00 | C    |             |
| MDER413 | Digital Electronics I         | 78   | 47    | 5.00 | C    |             |
| MDER414 | Histo-pathology               | 109  | 41    | 6.00 | C    | MDER212     |
| MDER415 | Medical Imaging Instruments I | 63   | 62    | 5.00 | C    |             |

**Semester 8 | 30 ECTS | 1 ECTS = 25 hrs**

| Code    | Module                         | SSWL | USSWL | ECTS | Type | Pre-request |
|---------|--------------------------------|------|-------|------|------|-------------|
| MDER420 | Bio-Fluid Mechanics            | 78   | 22    | 4.00 | C    |             |
| MDER421 | Biomechanics II                | 79   | 71    | 6.00 | C    | MDER221     |
| MDER422 | Medical Communications         | 94   | 56    | 6.00 | C    | MDER311     |
| MDER423 | Image Processing               | 63   | 37    | 4.00 | C    |             |
| MDER424 | Digital Electronics II         | 78   | 47    | 5.00 | C    |             |
| MDER425 | Medical Imaging Instruments II | 63   | 62    | 5.00 | C    |             |

**Semester 9 | 30 ECTS | 1 ECTS = 25 hrs**

| Code    | Module                                            | SSWL | USSWL | ECTS | Type | Pre-request |
|---------|---------------------------------------------------|------|-------|------|------|-------------|
| UREQ520 | Engineering Management + Principles of Management | 78   | 22    | 4.00 | S    |             |
| CREQ510 | Project                                           | 93   | 57    | 6.00 | C    |             |
| MDER510 | Control I                                         | 79   | 46    | 5.00 | C    | MDER311     |
| MDER511 | Diagnostic Medical Equipment                      | 79   | 46    | 5.00 | C    | MDER414     |
| MDER512 | Elective III                                      | 63   | 62    | 5.00 | E    |             |
| MDER513 | Elective IV                                       | 63   | 62    | 5.00 | E    |             |

**Semester 10 | 30 ECTS | 1 ECTS = 25 hrs**

| Code    | Module              | SSWL | USSWL | ECTS | Type | Pre-request |
|---------|---------------------|------|-------|------|------|-------------|
| UREQ211 | Professional Ethics | 33   | 42    | 3.00 | S    |             |

|         |                                  |    |    |      |   |         |
|---------|----------------------------------|----|----|------|---|---------|
| CREQ510 | Project                          | 94 | 56 | 6.00 | C |         |
| MDER520 | Control II                       | 94 | 56 | 6.00 | C | MDER311 |
| MDER521 | Artificial Organs and Prostheses | 78 | 72 | 6.00 | C |         |
| MDER522 | Biomedical Sensors               | 78 | 47 | 5.00 | C | MDER210 |
| MDER523 | Elective V                       | 78 | 22 | 4.00 | E |         |

## 8. **Contact**

Program Manager:

Auns Qusai Hashim Al-Neami | Ph.D. in Analysis and processing of biomedical signals | Assistant Prof.

Email: auns.q.hashim@nahrainuniv.edu.iq

Mobile no.: +9647703993558

Program Coordinator:

Hamza Abbas Fadhil Ibrahim | M.Sc. Biomedical Engineering | Assistant Lec.

Email: hamza.abbas@nahrainuniv.edu.iq

Mobile no.: +9647715769665

---