وزارة التعليم العالي والبحث العلمي
جهاز الاشراف والتقويم العلمي
دائرة ضمان الجودة والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد

للعام الدراسي 2025-2026

الجامعة : العلوم العراقية
الكلية /المعهد : كلية الهندسة
القسم العلمي : هندسة الطب الحياتي
تاريخ ملء الملف : 4-1-2026
تاريخ ملء الملف : 4-1-2026

اللجنة المركزية لضمان الجودة لمسار بولونيا

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عضو:م.د.عادل محمد سلمان التوقيع:
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عضو:م.د.محمد عبد الفتاح التوقيع:

اللجنة الفرعية لضمان الجودة لمسار بولونيا

رئيس اللجنة: م.د.محمد عبد الفتاح التوقيع:
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كلية بغداد للعلوم الاقتصادية
الجامعة
وحدة الاداء الجامعي

دقق الملف من قبل
شعبة ضمان الجودة والأداء الجامعي
اسم مدير شعبة ضمان الجودة والأداء الجامعي: سيرهادين احمد
التاريخ
التوقيع

جامعة العلوم العراقية
AL-IRAQIA SCIENCE UNIVERSITY
كلية الهندسة
أ.م. مصادق العميد

دليل البرنامج الدراسية | 2025-2026 | Modules Programs

Al-Iraqia Science University/ Faculty of Engineering/ Biomedical Engineering

جامعة العلوم العراقية / كلية الهندسة/ هندسة الطب الحياتي

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

بكالوريوس هندسة -هندسة الطب الحياتي

العنوان: العراق / بغداد – المنصور - حي الإسكان / مجاور نادي العمال الرياضي
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1. Mission & Vision Statement

Vision Statement Vision Statement

The academic staff at the biomedical engineering department at the Iraqi Sciences University believe that students come to understand the discipline of Biomedical engineering through a combination of coursework, laboratory experiences, tutorials, research, and hospital field training. The department seeks to present academically, scientifically, and even practically in the local and international arena. The scientific laboratories of our departments are equipped with the latest devices and experiments in the field of medical equipment, biomechanics, biology and biochemistry in addition to electronics. Applying advanced studying and learning methods and keeping updated with the latest developments in this field, are one of our important aims, especially e-learning. Moreover, studying recent experiences in learning and working on applying them in line with the changing standards of scientific and practical requirements. Planning to build postgraduate studies with high standard quality by preparing material requirements from laboratories and others and the scientific needs of researchers, in addition to world-class researchers in the field of biomedical engineering, who own a distinguished research line and global scientific publication.

Mission Statement

Our mission is to provide a rigorous and comprehensive education in Biomedical Engineering that prepares students to excel as skilled professionals and innovators in the field. We are committed to cultivating a learning environment that fosters creativity, critical thinking and teamwork collaboration, while instilling a strong foundation in engineering principles and practices. Through hands-on

experiences, Ministry of Health partnerships, and exposure to emerging technologies, we aim to equip students with the technical expertise, problem-solving abilities, and adaptability needed to tackle the challenges that they will face in hospitals and clinics. Our program is dedicated to promoting ethical and sustainable practices, empowering graduates to drive efficiency and experience, in biomedical engineering. By fostering a culture of continuous learning and a deep understanding of the intersection between engineering and medicine, we strive to produce professionals who contribute to the advancement and transformation of the services delivered to the patients, by using technology to help people live longer, healthier and happier live, which may result in improving patient's life and raise patient satisfaction, making a positive impact on society and daily life of people.

2. Program Specification

Programme code:	BSc-BME	**ECTS**	300
Duration:	5 levels, 10 Semesters	**Method of Attendance:**	Full Time

The biomedical engineering program is multidisciplinary field that combines mechanical and electronic engineering principles alongside medical field and apply it to human body and also medical equipment.

This course will suit you if you're interested in learning about a range of disciplines – from mechanics and biology to physiology, programming and computer aided design. This course will be rooted in practical activities across these subjects, learning in our state-of-the-art facilities and interdisciplinary community.

Level 1 provides students with a solid foundation in core areas, blending technical knowledge, problem-solving abilities, communication skills, and an understanding of ethical and social considerations. These courses lay the groundwork for further studies in biomedical engineering and prepare students for the challenges and opportunities in the field according to the college and department mission statements.

Levels 2, 3, 4 and 5 of the biomedical engineering program progressively equip students with the specialized knowledge and practical skills needed to excel in the field of biomedical engineering. Through a combination of theoretical coursework, hands-on projects, self-study tasks, group-based projects and practical experiences, students develop the expertise required to innovate, optimize, and lead in the biomedical engineering and private sector.

The research ethos is developed and fostered from the start via practicals, which are either embedded in lecture modules or taught in dedicated practical modules, research seminars and tutorials. There is a compulsory field course at each Level, which students must pass in order to progress into other courses in the next Levels. At Level 5 all students carry out an independent research project, in 2 semesters, which has a combined weight of 8 ECTS.

Academic tutorials are held at all levels, providing continuity and progressive guidance, e.g. assessed exercises, essays and talks, seminars projects and as opportunities to practice these skills in a subject-specific context.

3. Program Objectives

1. To graduate an engineer who is distinguished by his scientific and practical knowledge of engineering applications in all health and medical fields, and to have distinguished knowledge that gives him the ability to design, develop, maintain and operate modern medical devices, in a way that contributes to the scientific and medical movement and contributes to conducting research related to the medical and life aspects.
2. To graduate as an engineer capable of applying advanced diagnostic and therapeutic concepts associated with modern engineering technologies in the medical field.
3. To prepare students with a good medical background that enables him/her to communicate with all parties of the medical community to cover the requirements of the Iraqi Ministry of Health for this specialization.
4. To work to intensify the use of computers in all medical fields by updating and developing existing software, and creating new computer systems that are mainly directed to assisting the doctor in performing his diagnostic and therapeutic mission with advanced methods.
5. To prepare a scientific, engineering personality who can communicate with the requirements of the labor market from the private or governmental sector in the medical engineering field, self-developing and normalizing, according to supply and demand.

4. Student Learning Outcomes

Biomedical Engineering is the application of engineering principles and techniques to the medical field. It combines the design and problem-solving skills of engineering with medicine and biological science to help improve patient health care and the quality of life of healthy individuals. The Department offers a Bachelor of Science in Biomedical Engineering with a concentration in the topics of mechanics, electronics, computing and medical-related topics. The Biomedical engineering curriculum and experiences are designed to prepare students, in part, for entry into professional health programs, graduate studies, technical careers and education.

Outcome 1

Technical knowledge

Graduates will possess a solid understanding of the principles, theories, and concepts related to biomedical engineering. They will have knowledge of electrical circuits and electronics, biomechanics, control systems, CAD, medical imaging, biomaterials and other relevant areas.

Outcome 2

Teamwork and Communication

Graduates will be able to effectively collaborate with multidisciplinary teams, in the hospitals and also the private medical sector and communicate technical information clearly and concisely. They will develop skills in teamwork, leadership, and interpersonal communication.

Outcome 3

Laboratory and Field Studies

Graduates will be able to perform laboratory experiments and project-based tasks in their studies, by using scientific equipment and computer technology while observing and learning through hands-on tasks.

Outcome 4

Data collection and analysis

Graduates will be able to demonstrate scientific quantitative skills, such as the ability to design scientific experiments, perform data collection, analyze the collected data and draw conclusions from the analysis.

Outcome 5

Problem-solving and Critical Thinking

Graduates will be able to develop problem-solving skills and critical thinking and apply it to biomedical engineering. They will learn to identify and analyze issues, related to their field and propose effective solutions, and make informed decisions in complex technical situations.

Outcome 6

Professionalism and work ethics

Students will understand the ethical and professional responsibilities associated with biomedical engineering. While their work is mostly in contact with patients, being in the hospitals or in the private sector, they will demonstrate professionalism, integrity, and an understanding of the impact of their work on society and the patient's well-being. They will be also prepared to adapt to advancements in technology, stay updated with industry trends, and engage in self-directed learning to help to tackle challenges in the field.

5. Academic Staff

1. Assistant Professor Dr. Naseer AbdulRazak Al-Homood / Specialization: Civil Engineering – Surveying / Urban Planning/ Bachelor's Degree: Civil Engineering (Surveying)/ Master's Degree: Urban Planning/ PhD: Urban Planning / Email: naseerhasach@baghdadcollege.edu.iq/ Mobile:009647844434485
2. Prof .Kawther abood Neamah / Email:cs@baghdadcollege.edu.iq
3. Professor Dr. MOHAMMED ABDULFATAH A.RAHMAN AL-AYASH

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Credits, Grading and GPA

Credits

Iraqi Sciences University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 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	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors

(50 - 100)	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	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
(0 – 49)	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)

1. 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 4-year B.Sc. degree:

   CGPA = [(1st module score x ECTS) + (2nd module score x ECTS) + ……] / 240

1. Curriculum/Modules

Level 1

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BME111	**Statics**	63	87	6.00	C	
BME112	**Biology**	93	57	6.00	S	
BME113	**Calculus I 1**	63	87	6.00	C	
BME114	**English Language 1**	33	17	2.00	S	
BME115	**Freedom and Democracy**	33	17	2.00	B	

BME116	**Physics**	48	102	6.00	S	
BME117	**Presentation skills**	18	32	2.00	S	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BME121	**Electric Circuit 1**	78	72	6.00	C	
BME122	**Calculus I 2**	63	87	6.00	C	BME113
BME123	**Anatomy I**	63	37	4.00	C	
BME124	**Dynamics**	48	27	3.00	S	
BME125	**Computer Skills 1**	63	62	5.00	B	
BME126	**Introduction to Biomedical Engineering**	78	72	6.00	C	

Level 2

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BME211	**Mathmatics II 1**	63	87	6.00	S	BME122
	Arabic 2	33	17	2.00	S	UOB101
BME212	**Chemistry**	63	37	4.00	B	
BME213	**Electric Circuit 2**	78	72	6.00	B	BME121

BME214	**Biomaterials Science**	63	62	5.00	C	
BME215	**Mechanics of Materials**	48	77	5.00	B	BME 111
	Crimes of Baath's Regime	33	17	2.00	S	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BME221	**Mathmatics II 2**	63	62	5.00	S	BME211
BME222	**Biochemistry**	63	62	5.00	B	BME212
BME223	**Digital Logic Design**	63	87	6.00	B	
BME224	**Biomechanics**	63	62	5.00	C	BME 111; BME 215
	Computer 2	48	27	3.00	S	UOB103
BME225	**Anatomy II**	63	37	4.00	B	BME123
	English Language 2	33	17	2.00	S	UOB102

2. Contact

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