

Programme Catalogue

College Name	College Abbreviation
Engineering	ENG
Department Name (in English)	Department Abbreviation
Biomedical Engineering	EBMe
Department Name (in Kurdish)	
ئه‌ندازياريا بايو ميديكال	
Department Name (in Arabic)	
الهندسة الطبية الحيوية	
1. Qualification awarded	
Bachelor of Science in Biomedical Engineering	
2. Length of programme	
4 Years	
3. Number of credits	
240 ECTS credits	
4. Level of qualification according to the National Qualification Framework and the European Qualifications Framework	
First cycle, Bachelor's degree	
5. Field(s) of study (e.g. ISCED-F)	
0914	
6. Specific admission requirements (if applicable)	
7. Specific arrangements for recognition of prior learning (formal, non-formal and informal) (if applicable)	
The programme may recognize formal credits earned in formal context if these credits are relevant to the programme and confirmed by the Transcript of Records.	
8. Qualification requirements and regulations, including graduation requirements	
Students should successfully complete all the core components and collect 240 ECTS credits	
9. Profile of the programme	
Biomedical Engineering (BME) is an engineering discipline that integrates engineering principles with biology and medicine to improve human health and support clinical practice. Biomedical engineers model and analyze complex physiological systems, process medical data for diagnosis and therapy, perform physiological measurements for research and clinical use, and design biomedical devices that help diagnose, monitor, and treat medical conditions. Due to the shortage of this specialty in the Kurdistan Region, the College of Engineering at the University of Duhok collaborated with the University of Applied Sciences Mittelhessen Giessen (THM) in Germany, particularly with Prof. Dr. Thomas Schanze and Prof. Dr. Martin Fiebich, to establish the department. With support from the German Academic Exchange Service (DAAD), the University of Duhok received a four-year grant in March 2014. Since then, both universities have cooperated through staff exchange, workshops, and specialized lectures. With continued support from THM and the General Directorate of Duhok Health, the department was officially established, and student admission began in the 2018–2019 academic year under a parallel (tuition-based) system.	
10. Programme Educational Objectives	
The Program Educational Objectives (POEs) of the Biomedical Engineering department are	

to prepare graduates who will:

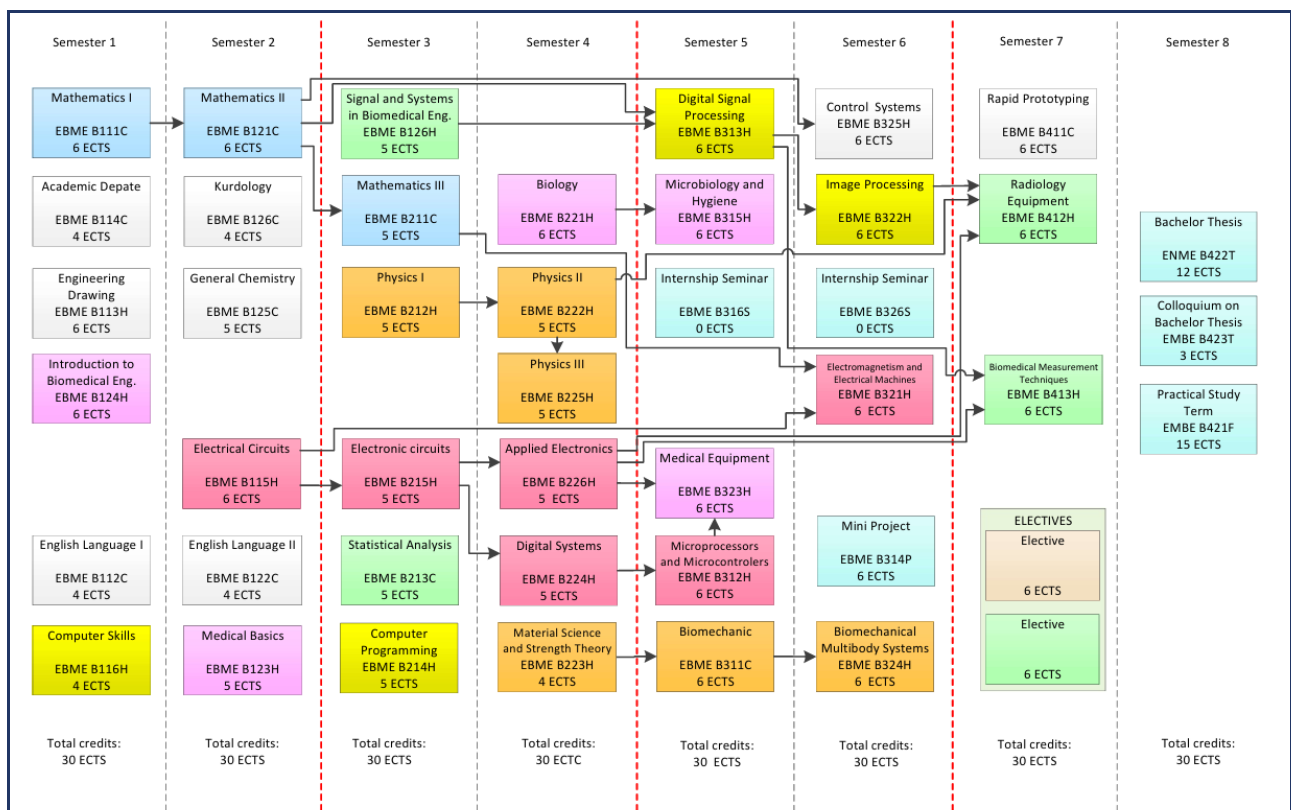
1. Demonstrate successful careers in Biomedical Engineering or related disciplines by leveraging technical expertise, analytical skills, and innovation to effectively contribute to their professions.
2. Exhibit strong leadership, communication and teamwork skills, enabling them to work effectively within multidisciplinary teams.
3. Address real-world problems and improve quality of life while upholding ethical standards and considering the broader societal, environmental, and global implications of engineering decisions.
4. Engage in lifelong learning through advanced education, professional development, and certifications or other learning opportunities to adapt to evolving technologies, drive innovation, and contribute to the development of new technologies.

11. Programme learning outcomes

After successfully completing this programme :

1. Graduates will be able to solve complex engineering problems using principles of engineering, science, and mathematics.
2. Graduates will be able to design engineering solutions that meet specified needs while considering health, safety, welfare, and global, cultural, social, environmental, and economic factors.
3. Graduates will be able to communicate effectively with diverse and multidisciplinary audiences.
4. Graduates will be able to demonstrate ethical and professional responsibility and make informed judgments considering global, economic, environmental, and societal impacts.
5. Graduates will be able to work effectively in teams to provide leadership, collaborate, set goals, plan tasks, and achieve objectives.
6. Graduates will be able to design and conduct experiments, analyze data, and apply engineering judgment to reach valid conclusions.
7. Graduates will be able to engage in lifelong learning by acquiring and applying new knowledge using appropriate learning strategies.
8. Graduates will be able to address multidisciplinary challenges by integrating knowledge from engineering, medical, and biological sciences to develop effective healthcare solutions.

12. Programme structure diagram with credits



13. Mode of Study

Full time on two campuses of UoD and THM

14. Examination regulations and grading scale

The following grading scale is used:

% Points	Grade
90 – 100	Excellent
80 - < 90	Very Good
70 - < 80	Good
60 - < 70	Medium
50 - < 60	Pass
0 - < 50	Fail

15. Mobility window (if applicable)

16. Work placement(s)/internships (if applicable)

The programme includes a 15 ECTS internship opportunity in semester 8

17. Work-based learning (if applicable)

18. Programme director or equivalent

Mohammed Subhi Hadi

email: mohammed.subhi@uod.ac

19. Occupational profiles of graduates

Graduates of the Biomedical Engineering programme possess a strong interdisciplinary background in engineering, biology, and clinical sciences. Through courses in biomedical instrumentation, medical equipment, biomechanics, image and signal processing, electronics, and control systems, they gain the skills needed to apply engineering solutions in healthcare settings.

They are prepared to work in hospitals, medical device companies, research centers, and healthcare technology sectors.

1. Clinical / Biomedical Engineer: Managing, maintaining, calibrating, and ensuring the safe operation of medical equipment in hospitals and healthcare institutions.
2. Medical Device Engineer: Designing, testing, and improving medical devices and diagnostic systems in compliance with safety and regulatory standards.
3. Biomedical Equipment Specialist: Installing, troubleshooting, and optimizing imaging systems, monitoring systems, and therapeutic equipment.
4. Biomaterials and Biomechanics Engineer: Working on prosthetics, rehabilitation devices, and biomaterial applications that interact safely with the human body.
5. Medical Imaging and Signal Processing Engineer: Developing and applying image processing and digital signal processing techniques for diagnostic and therapeutic purposes.
6. Research and Development Engineer: Contributing to innovation in areas such as biomedical instrumentation, wearable health devices, rehabilitation systems, and healthcare technologies.
7. Quality Assurance / Regulatory Engineer: Ensuring medical devices meet international safety, quality, and performance standards.
8. Entrepreneur / Healthcare Technology Consultant: Establishing startups, providing consultancy services, or developing innovative healthcare solutions tailored to local and regional needs.

20. Access to further studies

Graduates are eligible for further studies at higher diploma programmes or second-cycle (Master's) degrees in relevant disciplines.

21. Academic Staff

Full Name	Qualification	Academic title	Email
Yasser Ahmed Fadhel ALSAIDOSH	PhD	Lecturer	yasser.fadhel@uod.ac
Salih Mustafa Saleem	PhD	Retired Assist. Prof.	salih.saleem@uod.ac
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Zaid Abdullah Mohammed Tahir	BSc	Teaching Assistant	zaid.abdulla@uod.ac

22. Facilities and Resources (Lecture halls, Labs, etc.)

The programme uses these facilities:

Type	Quantity	Capacity (students)	Type of use	Equipment included
Lecture Hall	2	35	Dedicated	Projector, whiteboard
Electronic Circuits Lab	1	30	Dedicated	15 benches each including: 1 oscilloscope, 2 bench power supplies, 1 function generator
Computer Lab 1	1	22	Dedicated	22 Desktop computers, projector,

				whiteboard, internet
Biomedical Measurement Lab	1	15	Dedicated	3 benches
Digital System Design Lab		15	Dedicated	4 benches
Anatomy Lab		15	Dedicated	3 benches
Microcontroller Lab		20	Dedicated	8 benches
23. Accreditation and recognition				
The programme is officially recognized by the Ministry of Higher Education and Scientific Research of the Kurdistan Region – Iraq and the Ministry of Higher Education and Scientific Research of Iraq.				