



NEAR EAST UNIVERSITY

**DEPARTMENT OF Biomedical
Engineering**

Profile of the Program

2021-2022

1. Profile of the Programme and Method of Education

Undergraduate curriculum according to Academic Regulation for Undergraduate Studies is arranged by the Biomedical Engineering Department and becomes effective upon the decision of the Engineering Faculty Board and approval of the University Senate.

The Biomedical Engineering Program takes four years and leads to a Bachelor's degree of Science in Biomedical Engineering. The Bachelor's degree requires the completion of 243 ECTS credits. The curriculum of the Bachelor's Degree in Biomedical Engineering was planned according to recommendations of ASIIN's subject-specific criteria (The Technical Committee 02, TC 02 and The Technical Committee 10, TC 10). The curriculum is classified into curricular categories represented in Table 1. A number of credits and a weight of a category in the program are indicated in Table 1. It includes studies of mathematics and science, studies of English and social science courses, studies of biomedical science and biomedical engineering obligatory courses, studies of biomedical engineering electives courses, bachelor's thesis and practical training.

Table 1: Curricular categories of the program

Category	Notation	Credit	Weight, %
Mathematics	MTH	15	9.4
Basic Science	BS	14	8.8
English Composition & Social Science	ECS	14	8.8
Life Science	LS	4	2.5
Compulsory Biomedical Engineering Courses	BME	85	53.5
Elective Biomedical Engineering Courses	TE/NTE	21	13.2
Graduation Projects	GP	6	3.8
Summer Internship	SI	0	0
Total		159	100

Each module is assigned a number of semester credit hours, according to the number and types of formal activities within a given week. These are determined as follows:

- Lecture hours: presentation of material in a classroom setting
 - 3 credit hour = 6 “hour” of lecture per week
 - 2 credit hour = 4 “hour” of lecture per week
- Laboratory hours: formal experimentation in a laboratory setting
 - 1 credit hour = 2 “hour” laboratory session per week
- Recitation hours: problem-solving sessions, etc. in support of lecture material

- 1 credit hour = 2 “hour” of recitation per week

The professional competence acquired in the required subject studies is further developed by elective subject choices. In the Bachelor’s Degree Program the portion of elective studies is 9.93 %. In exceptional cases, the elective subject can be chosen from other degree programs, if it is suitable for the degree. The application has to be approved by the Head of Biomedical Engineering Department. With technical respect free electives on offer, students of the Bachelor’s degree program may choose a certain specialization track to get a more distinguished qualifications profile.

Teaching methods:The Bachelor’s program is full-time, on-campus program. The teaching methods applied in the Degree Program in Biomedical Engineering include lectures, classroom and laboratory exercises, computer trainings, different kinds of assignments, seminars, excursions, and Case-exercises. The courses also involve group and project work which train the social competences of the students.

The Department of Biomedical Engineering appreciates modern concepts and new methods in teaching and education methods that support educational objectives in addition to traditional methods. Traditional class attendance is compulsory for all courses except graduation projects. Problem solving sections of knowledge-based courses are integrated with the theory sections.

The Department of Biomedical Engineering aims to reach its educational objectives by using several teaching methods. Both the traditional and modern teaching methods are employed at the department. Traditional teaching methods are face-to-face lectures and are class based, requiring all students to attend classes. At least 70% of class attendance is compulsory for all the courses. Lectures are conducted using standard computer based presentations in the form of prepared slides. In addition, white boards and marker pens are used whenever necessary in order to explain difficult topics in greater detail, or to answer student questions. Students are encouraged to take notes during the presentations and ask questions if there are points that they are not clear about. Electronic copies of the slides are sent to students by e-mail after each class, and students are encouraged to go through the slides in their own time and make sure that they understand all presented information.

In addition to traditional teaching methods, a variety of other methods are used to support the teaching. Most computer based learning requires the use of computers as part of the learning process. Students use the departmental computer laboratories for their practical work in order to improve their practical skills. Students use computers in the laboratory under the supervision of either a teaching assistant or an instructor.

Educational methods used for the students can be classified into **teacher centered and student centered**. In **Teacher-Centered Approach**, the Teachers are the main authority figure. The primary role of the student is to passively receive information (via lectures and direct instruction) with an end goal of testing and assessment. It is the primary role of teachers to pass knowledge and information onto their students. In this model, teaching and assessment are viewed as two separate entities. Student learning is measured through objectively scored tests and assessments. In **Student-Centered**

Approach, the teachers are an authority figure, teachers and students play an equally active role in the learning process. The teacher's primary role is to coach and facilitate student learning and overall comprehension of material. Student learning is measured through both formal and informal forms of assessment, including group projects, student portfolios, and class participation. Teaching and assessments are connected; student learning is continuously measured during teacher instruction. Commonly used teaching methods may include class participation, demonstration, recitation, memorization, or combinations of these.