

Admission Prerequisites to the Program

An applicant has the right of teaching on foreign educational program when he has the permission in accordance with Georgian Legislation. The applicant must have the certificate confirming the knowledge of English on the level not less than B1 or must present international certificate TOEFEL (The Test of English as a Foreign Language) of II certification level. The applicant is free from the necessity of presenting a certificate confirming his/her competence at having completed course in the foreign language that is educational language of the program was English. At not having appropriate certificate or other analogous document, the applicant will have an interview in English. The interview will be implemented with the temporary commission which part the staff of GTU.

Program Objectives

The undergraduate Biomedical Engineering Program Educational Objectives (PEO's) are that our alumni:

- will be engaged in professional practice as biomedical engineers and/or biomedical scientists in occupational settings involving human health and well-being (PEO 1),
- will advance in their professional careers (PEO 2).
- will engage in professional development, or post-graduate education, to continue their self-development in biomedical engineering or other related fields (PEO 3).

Learning Outcomes / Competencies (general and professional)

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics;
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors;
3. an ability to communicate effectively with a range of audiences;
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts;
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives;
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions;
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Student's knowledge assessment System

Grading system is based on a 100-point scale. Positive grades:

- (A) - Excellent - the rating of 91-100 points;
 - (B) – Very good - - the rating of 81-90 points
 - (C) - Good - the rating of 71-80 points
 - (D) - Satisfactory - the rating of 61-70 points
 - (E) - Enough - the rating of 51-60 points
- Negative grades:
- (FX) - Did not pass - 41-50 points of rating, which means that the student needs more work to pass and is given the right to take the exam once more with independent work;

• (F) – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning.

Courses in the Program		
Nº	Learning Course	Credits
1.	Engineering Mathematics 1	6
2.	Physics A	5
3.	Introduction to general and organic chemistry	5
4.	Programming in Visual Studio	4
5.	Introduction to Biomedical Engineering	5
6.	Electrophysiology	5
7.	Engineering Mathematics 2	6
8.	Physics B	5
9.	Biomechanics of Human Body	4
10.	Human Physiology	5
11.	Object-oriented Programming - 1(based on C++)	5
12.	Free components University Elective 1	
12.1	Georgian History and Culture	5
12.2	Art Trough the age	
13.	Engineering Mathematics 3	6
14.	Physics C	5
15.	Electrical Circuits 1	5
16.	Biomedical Measurements	5
17.	Lab View Programming Methods	4
18.	Biomedical Instrumentation	5
19.	Linear Algebra	6
20.	Biophysics	5
21.	Electrical Circuits 2	5
22.	Medical device design	5
23.	Biomedical Transducers	4
24.	Free Components University Elective 2	
24.1	Design and Society	5
24.2	Principles of Contemporary Management	
24.3	Biomomicry and Sustainability	

25.	Basics of Medical Electronics	6
26.	Control Systems in Biology and Medicine	5
27.	Bioinformatics In Matlab	5
28.	Materials for Medical Devices	4
29.	Fundamentals of probability theory	5
30.	Modeling in Electronics Workbench	5
31.	Health Care Management and Economics	5
32.	Clinical Practice	6
33.	Quality Control Of Medical Devices	5
34.	CAD Systems	5
35.	Project Management	4
36.	Free Components University Elective 3	
36.1	Introduction to Ergonomics	5
36.2	Job Analysis Methods	
37.	Team Project	6
38.	Professional Electives 1	
38.1	Microprocessor Medical Systems	6
38.2	Biomedical Signal and Image Processing	
39.	Professional Electives 2	
39.1	Clinical Diagnostic Laboratory Devices	6
39.2	Interfaces Of Medical Systems	
40.	Professional Electives 3	
40.1	Mobile Health Systems	6
40.2	Telemedicine	
41.	Professional Electives 4	
41.1	Hospital Administration And Management	6
41.2	Distance Medical Systems	
42	MRI Tomography	6
43	Professional Electives 5	
43.1	Medical Informatics	6
43.2	Medical Sensors	
44	Professional Electives 6	

44.1	Radiological Physics and Dosimetry	6
44.2	Artificial Organs	
44.3	Mathematical Models in Biology and Medicine	
45	Capstone Design Project	12