Admission Prerequisites to the Program

- A person must have a master or equalized academic qualification in the field of related sphere, in particular engineering, informatics, natural sciencesce, biomedicine;
- Applicants wishing to enroll in the program must submit: a research project, where the applicant's goal and direction are outlined;
- It is mandatory to present a certificate/document confirming the knowledge of the English language at least B2 level. The applicant, who cannot present the said certificate, is obliged to pass the test in the computer center of STU in the English language. Applicants who have received one level of higher.

Program Objectives

PEO 1. Visionary engineers and problem solvers, utilizing a breadth of scientific knowledge to address contemporaryissues at the interface of engineering, medicine, and biology within a global, societal, and economic context;

PEO 2. Leaders in biotechnology and medical industries both in the public and private sectors capable of servingnational and regional industries, hospitals, and government agencies;.

PEO 3. Ethically and socially conscious professional engineers functioning well in multi-disciplinary teams, effectivein communicating ideas and technical information;

PEO 4. Independent learners who can generate new knowledge and technologies, as well as, successfully engage in post-doctoral studies and scientific research in engineering medicine and biomedical sciences. Also teach another's in this sphere

Learning Outcomes / Competencies (general and professional)

- Ability to determine new approaches in the sphere of biomedical engineering, the base of which will be knowledge,innovative methods and technologies in the mentioned sphere;
- Ability developed and modeling based on the lasts advances in recent achievements in the methods and theories ofexact and approximate calculation;
- Ability to analyze, synthesize and evaluate innovative ideas and research outcomes thoroughly and for specific reasons;the criteria for new bio-technical medical equipment and make decisions oriented on research studies; will be able to formulate and utter individual reasoned ideas about the problems under discussion;
- Ability to understanding professional and ethic responsibility in the process of decision making in the sphere ofbiomedical engineering and in ensuring a high standard of health care for the community;
- Ability on the creation of new knowledge to plan, implement and supervise applied and fundamental researches independently, develop medical systems, information technologies of healthcare and new research and analytical methods of working on medical equipment;
- Ability to make decisions based on purposeful and comprehensive analysis, synthesis and evaluation of new innovativeideas and research results. On the formation and research objectives of the criteria for new bio-technical medical equipment. Forms his own reasoned opinion;
- Ability Orientated on scientific and pedagogical activity, to develop new methodology for studies and to elaboratetraining aids for laboratory and practical tasks;
- Ability formulate scientifically important conclusions, valuable recommendations, and hypotheses to find new ways tosolve an existing problem;
- Ability and conducts research in accordance with the principles of academic good faith; Develops new research andanalytical methods focused on creating new knowledge (at the level of the standard required for international peer- reviewed publication), participates in research projects based on the latest achievements;

- Ability to freely engage in a theoretical discussion with the professionals working in the multidisciplinary field worldwide; Achieves recognition of own opinions and research in the international arena;
- Ability to Determine the direction of learning based on the understanding of the peculiarities of the learning process and plans the learning process independently and creatively; Deep professional knowledge independently using specialized literature and electronic resources.

Student's knowledge assessment System

Grading system is based on a 100-point scale. Assesmeent of learning component: 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.

The procedure for evaluating the research component of a Doctoral program is given on the university's website. Detailed information about the evaluation system of the doctoral program is provided on the websiteof the GTU: Link: https://gtu.ge/ .

Assessment of scientifical-research component/components:

a) Perfect (summa cum laude) – exelent work;
b) Very good (magna cum laude) – result which is more than required;
c) Good (cum laude) – result which fully complies with the requiremets;
d) Fair (bene) – result which fully complies with the requiremets inspite of some flaws;
e) Satisfactory (rite) – result which complies with the requirements inspite of some flaws;
f) Insufficient (insufficienter) – result whict does not complies with the requirement because of significant flaws;
g) totally unsatisfactory (sub omni canone) – result which does not compies with any requirements.

The scientific-research component of the doctoral education program is evaluated once, with a final evaluation. The evaluation system of the scientific-research component is given on the website of the Georgian Technical University:
https://gtu.ge/

Courses in the Program

#	Learning Course	Credits
1.	Scientific Communication Techniques	4
2.	Research Methods in Biomedical engineering	5
3.	Teaching Methods and Education Management	6
4.	Assistant of professor in Biomedical Engineering	5
	Special Mandatory Courses	
5.	Biomedical Sensors And MeasurementTransducers	5
6.	Radiation Safety And Dosimetry	5

7.	Physiology and Electrophysiology For Engineers	5
8.	Control Systems In Medicine	5
9.	**Elective Courses**	
9.1	Medical Image Analysis	5
9.2	Artificial Organs	
10	Clinical Engineering	5
	theresearch component	