Ilia State University
Master Program
Curriculum

Faculty	Faculty of Natural Sciences and Medicine
Program title	Applied Biochemistry and Biotechnology
Awarded Academic Degree/Qualification	Master of Sciences in Biochemistry
Language of Instruction	Georgian
Program duration/volume (Semester, number of credits)	4 semesters, 120 ECTS (1 ECTS-25 hours)
The Date of Programme development and Update	The program was developed in 2011 and updated in 2020. To improve the program, it might be revised upon the start of each study year.

Admission Requirements to the Programme

The admission to the program is subject to Common Master Examination results and the University internal oral exam. At the University exam, attention is paid to the motivation of the student, knowledge of general biology and biochemistry, as well as knowledge of English B1 Level.
The oral exam is conducted according to the rules established at Ilia State University.
Applicants for the Master's Degree Program is desirable to have a Bachelor's / Bachelor's degree equal academic degree or relevant qualification in biology and related sciences, such as chemical sciences or healthcare.
Information on entrance exam conditions, requirements, assessment components, and the criteria are described in the "Program Admission Document" and are included In the section "Admission" on the university website.

Program Objectives

The mission of the Program:

The program aims to prepare students who are equipped with the modern knowledge and methods in applied biochemistry and biotechnologies with the ability to study fundamental biological processes on a molecular and cellular level and be ready for a research career in academic, as well as in biotechnology industry sector.

Learning Outcomes

The graduate:
1. Has deep and systematic knowledge of the mechanisms of functioning systems of living organisms;
the biotechnological application of these mechanisms and their study methods, latest achievements, approaches, and trends;
2. Depending on the task at hand, can determine phenomenon/pathology/action mechanisms and models of interactions between them using the recent available knowledge;
3. Is capable of using knowledge and methods in modern biomedical sciences (molecular biology, immunology, microbiology, cell regulation principles, molecular pharmacology) to study mechanisms of action of biologically active compounds, drug interactions, and assess their biotechnical potential.
4. Can identify complex problems of applied biochemistry and plan and conduct independent research adhering to the norms of scientific ethics and bioethics and using modern research methods.
5. Is able to analyze complex data obtained as a result of research using modern methods and tools (including software) , interpret research results based on the current scientific context;
6. Is able to communicate scientifically to academic and professional audiences with adherence to the norms of academic integrity using modern communication technologies;
7. During the research process can work in the laboratory independently, in compliance with safety norms;
8. Is able to identify learning needs, plan and carry out learning independently.

Structure of the Master Program

Under the program, the student must earn 120 credits, according to the scheme below:
Mandatory courses / components - 96 credits:
1. Mandatory courses - 66 credits
2. Master Thesis - 30 credits
Elective courses - 24 credits *
* Out of 6 credits, as part of the program the student can choose from the existing elective courses within the program as well as courses from other graduate programs.
If necessary, the student will have the opportunity to complete a bachelor's degree course / s without credits (so-called remedial course).

Teaching methods

- Lectures;
- Seminars;

- Analysis and synthesis;
- Practical work;
- Laboratory Work;
- Project-based teaching method;
- Discussion/debates;
- Individual and group work;
- Demonstrative method;
- Digital learning methods;

Note: Specific teaching methods used in the program are described in the relevant course curriculum.

Student Evaluation

The assessment is conducted using a 100 point system. The points are distributed and allocated as follows:

(A) 91-100 Excellent
(B) 81-90 Very Good
(C) 71-80 Good
(D) 61-70 Satisfactory
(E) 51-60 Sufficient
(FX) 41-50 Unsatisfactory - meaning a student needs more effort to pass an examination and is given an extra chance to pass an additional examination through independent work.
(F) Failure - 40 and less of the maximum of grades, meaning the student's effort is not enough and he has to learn the subject anew.

Note: The detailed assessment components and criteria are described in more detail in the respective syllabus of each course of the program.

Employment opportunities

Graduates can be employed: academic, state, and research institutions, as well as in the private sector: in biotechnology enterprises, pharmaceutical companies, pharmacological quality control laboratories, medical, agricultural, forensic and diagnostic laboratories. The student may pursue to study at a Doctoral level.

Necessary auxiliary conditions /resources for learning

- Auditoriums for lecture

- Computer classes;
- Scientific-research laboratories (Chemical biology institute laboratories)
- University Library
- Argus
- Turnitin, Moodle