Ilia State University

Master Program – Master Program in Life Sciences (Molecular Biosciences, Neurosciences)

Curriculum

Faculty	Faculty of Natural Sciences and Medicine
Program title	Life Sciences (Molecular Biosciences, Neurosciences)
Awarded Academic Degree/Qualification	MSc in Molecular Biosciences MSc in Neurosciences
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 Master's program is subject to the Common Master Examination and the University internal oral exam. The exam assesses student's motivation, selected concentration (molecular biology/neurosciences) as well as knowledge of the fundamentals of biology and natural sciences. Additionally, English language knowledge is also assessed on the B1 level. It is desirable, that the student applying for this program has a bachelor's degree and relevant qualification in biology and related sciences, or in the healthcare sector. Detailed information on the conditions, requirements, assessment of the internal university examination components, and criteria are given in the Program Admission Document and can be found on the university website under the heading "Admission".
Program Objectives
The program aims to prepare researchers who based on the deep and systemic knowledge in biosciences and neurosciences will conduct independent research using modern methods and in compliance with ethical and academic integrity; who will be able to communicate effectively with the experts and be competitive on the job market as well as to pursue further studies.

Learning Outcomes

Graduate:

1. Has a complex knowledge in the selected live sciences regarding the latest achievements, approaches, and tendencies, which include: molecular biosciences – recombinant DNA technologies, protein engineering, proteomics, interactomics, mass-spectometry, nanoscience methodology. In neurosciences: neuroscience concepts, modern methods (electrophysiological methods; brain methods of irritating/damaging structures; Methods of studying behaviour and memory) in the study of integrative function of the brain;
2. Based on the issue, can identify the biological event and/or related pathological mechanisms and the models of their interaction;
3. Can independently plan and research molecular biosciences and neurosciences using modern research methods;
4. Can qualitatively and quantitatively analyse complex data obtained from the research using modern methods and tools (including software), interpret research results considering scientific context, analyse and synthesize information;
5. Can conduct scientific communication considering the academic integrity, using modern information and communication technologies with the academic and professional audience;
6. During the research process, can independently work in the laboratory following the safety norms;
7. Can identify learning needs, plan and conduct learning independently

Program Structure

Within the program student must choose one of the concentrations and accumulate 120 ECTS credit according to the scheme below:

General block - 30 credits

Molecular Biosciences - 90 credits

1. Mandatory courses - 24 credits
2. Elective courses - 36 credits *
3. Master's Thesis - 30 credits

Neurosciences - 90 credits

1. Mandatory courses - 42 credits
2. Elective courses - 18 credits *
3. Master's Thesis - 30 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;
- Discussions/Debates;
- Individual and group work;
- Demonstrative method;
- Digital learning elements;
- Supervision

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

A graduate of Molecular Biosciences may be employed: in a research institute with any biological profile and at relevant faculties of universities; medical, agricultural, and forensic diagnostic laboratories. It is also possible to pursue studies at a doctoral level.
A graduate of neuroscience can be employed:
In research institutions, in higher education institutions, psycho-diagnostic centers of neurological clinics, in research sectors of pharmaceutical companies or continue their studies to earn an academic degree of Doctor.

Necessary auxiliary conditions /resources for learning

- Auditoriums for lecture
- Computer labs;
- Scientific-research laboratories (Institute of Chemical Biology, T. Oniani laboratory of sleep-wakefulness study);
- Ivane Beritashvili Center of Experimental Biomedicine;
- Ilia State University Library;
- The University electronic platform Argus;
- Turnitin, Moodle