

Ilia State University
Faculty of Natural Sciences and Medicine
Master's Program - Applied Genetics

Curriculum

Faculty/School	Faculty of Natural Sciences and Medicine
Program Title	Applied Genetics
Academic Degree Awarded	Master of Science of Applied Genetics
Program Duration/ECTS	4 semesters, 120 credits (1 credit = 25 hours)
Launching Date of the Program & Program Update	The program was developed in 2012, updated in 2020. The program can be updated at the beginning of each semester to improve the learning process.
Language of Instruction	Georgian
Head/Heads of the Program	Professor Davit Tarkhnishvili Associate Professor Mari Murtskhvaladze
Admissions Requirements	
<p>Admission to the master's degree is based on the results of the Unified Master's Examination and the intra-university oral exam/interview. During the exam/interview, attention is paid to the student's motivation, knowledge of the basics of general biology and natural sciences; As well as, field knowledge of the English language, which is tested by field text analysis. Applicants for master's degree should preferably have a bachelor's/an academic degree equivalent to a bachelor's degree in biological and related sciences, environment or psychology, as well as a medical qualification.</p> <p>Information about the conditions, requirements, assessment components and criteria of the entrance exams is provided in detail in the "Document of Admission to the Program" and is published on the university's website in the "Admission" section.</p>	
Program Objectives	
<p>The goal of the program is to train highly qualified researchers in the field of applied genetics who:</p> <ul style="list-style-type: none"> • will be able to study current issues in the field of biodiversity, ecology, biology, agriculture, and medicine by using modern methods of DNA research and adhering the norms of ethics and academic integrity; • will be able to fully process the data obtained by molecular-genetic methods and interpret the results depending on the task; • will be able to communicate effectively with the professional and academic community; <p style="padding-left: 40px;">will be equipped with analytical and independent decision-making skills.</p> <p>The program creates a favorable environment for conducting research in the direction of applied genetics by involving highly qualified academic staff, using research laboratories and institutes (research institutes of ecology, zoology, botany, medicine and public health) and collaborating with partner organizations in the program, such as the Richard Lugar Center for Public Health Research.</p>	
Learning Outcomes	
<p>The graduate:</p> <ol style="list-style-type: none"> 1. has deep and systematic knowledge of the latest advances, theories, methods and areas of application of genetic research in the field of genetics; 2. can plan and conduct research in the chosen field independently (genetic research of various living organisms - animals, plants, humans, analysis of genetic structure of populations, study of microevolution and macroevolution) using modern relevant methods, appropriate equipment and theoretically analyze the 	

obtained results;

3. can analyze data using appropriate analytical and statistical methods and relevant software;
4. adheres to professional ethics and principles of academic integrity in the research process;
5. can work in the laboratory in compliance with the relevant safety standards;
6. can effectively communicate the results, ideas and opinions of research to the professional and academic community, using modern information technologies;
7. can identify learning and research needs and independently plan and implement relevant processes.

Program Structure

Program Structure - 120 credits:

1. Compulsory courses - 42 credits
2. Communication Block - 6 credits
3. Living Systems Block – min.18 credits
4. Methodological Block – min. 12 credits
5. Elective courses – max. 12 credits
6. Master's Thesis - 30 credits

In the case of necessity, the student will have the opportunity to take the bachelor's course(s) without credits (the so-called remedial course).

Teaching Methods

Lecture, seminar, discussion/debate, laboratory work, presentation, project-based teaching method, fieldwork, analysis and synthesis, supervision

Student Assessment

The assessment is based on a 100-point system. Points will be distributed and defined 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 Did not pass, which means that the student is required to work more to pass and is allowed to retake the exam once through independent work

(F) 0 – 40 Fail, which means that the work done by the student is not enough and he/she has to retake the course

Assessment components, criteria and assessment methods are presented in the syllabi of the training courses.

Employability

A graduate can be employed in an epidemiological, pharmaceutical, or disease control laboratory; in a forensic or other laboratory where genetic testing is used; in another governmental, non-governmental or private institution where genetic testing and analysis of its results are used - in the field of agriculture, conservation biology or ecology; In research institutions - university, research institute, natural sciences museum in Georgia or abroad. Graduates of the program may continue their studies at the doctoral level.

Teaching and Learning Resources

- Lecture halls;
- Computer classes;
- Molecular-genetic laboratory;

- Scientific-research laboratories (laboratories of research institutes of ecology, zoology, botany, medicine and public health);
- Field hospitals in Stepantsminda, Dedoplistskaro and Grigoleti;
- University library;
- Electronic selection system “Argus”;
- Turnitin, Elearning.

Partner organizations:

- Tbilisi Zoological Park;
- L. Sakvarelidze National Center For Disease Control and Public Health; Richard Lugar Center for Public Health Research.