THE BIOLOGY MASTER PROGRAM

Information about the Program

Name of MSc Program:	Biology MSc Program
Specialization available:	-
Field, branch:	Science
Qualification:	Biologist
Mode of attendance:	Full-time
Faculty, Institute:	Faculty of Science and Technology Institute of Biology and Ecology
Program coordinator:	Prof. dr. Zoltán Barta, professor dr. Zoltán Németh, assistant professor
Duration:	4 semesters
ECTS Credits:	120

Objectives of the MSc program:

The aim of the Biology MSc program is to train professional scientists who have deep insight into biological processes. Relying on strong biological, evolutionary and ecological knowledge, graduates of the program are able to understand complex natural phenomena and to develop applied science-based solutions to problems in their respective fields.

Professional competences to be acquired

Biologist:

a) Knowledge:

- He/she has a high level of knowledge about the living systems both at the above and below organism level. Able to apply, organise and develop this knowledge further.
- He/she knows the methods applied in modern field, laboratory and industrial biology.
- He/she knows and is able to apply the terminology and knowledge of the different areas of biology (cell biology, ecology, environmental and nature protection, microbiology, immunology, physiology, animal behaviour, genetics, evolutionary biology, biotechnology, structural biology, syntetic biology, botany and zoology.
- He/she knows the connections between the different biological disciplines and understands the importance of multidisciplinary approaches.
- He/she knows the theoretical and historical aspects of evolution of life on Earth and is able to argue scientifically for this view.

- He/she knows the possibility of applications of modern biological methods, recognises the importance of the development of new methodology and contributes to this development.
- He/she has usable knowledge of natural sciences.
- He/she senses and understands problems of the society which are rooted in biology.

b) Abilities:
- He/she is able to recognise the relationships between different areas of science.
- He/she is able to recognise patterns in social processes related to nature and living organisms.
- He/she is able to carry out scientific research projects and produce (with appropriate supervision) new scientific results.
- He/she is able to use research methods and tools, plan and carry out investigations, interpret and present results of such investigations, learn and develop new methods.
- He/she is able to be a interdisciplinary thinker, build collaborations and coordinate division of labour between members of staff.
- He/she is able to think and act to achieve high level of quality control.
- He/she is able to manage, analyse and interpret scientific data.
- He/she has and develops their skills for precise measurements.
- He/she is able to present and defend his/her views and perform well on job interviews.
- He/she is able to present his/her results and views in biology at a high level both in oral and written form.
- He/she joins the national and international scientific community and is able to communicate his/her results at a high level.
- He/she is able to work in a sustainable way.

c) Attitude:
- He/she aims to know and understand the relations among humans and nature, the structure, function and evolution of humans and other organisms.
- He/she aims to express a responsible point of view about humans and nature, explain their relations for the widest possible audience, and positively influence the public view on biology according to the latest scientific findings.
- He/she sets an example by his/her behaviour concerning environment and nature. He/she acts to push environmental and nature conservation further.
- He/she follows and makes others to follow the ethics of scientific research.
- He/she spread the results of science in an active way even in the media, he/she is able to defend his/her views against pseudoscientific attacks.
- He/she works both in the field and laboratory in a sustainable way and sets examples in this way for others.
- He/she is open to learn new theories and experimental results and is eager to collaborate with others. He/she aims to develop his/her knowledge and set new research directions.
- He/she is committed to do high quality work, to improve his/her own and his/her fellows' knowledge and career.
- He/she is open to develop research consultancy services and spin-offs.
- He/she is open to continuously learn and collaborate with other groups. He/she actively seeks the possibility for personal and professional development and activelyhelps the flow of information.

d) Autonomy and responsibility:
- He/she has the ability to lead small research groups.
- He/she expresses his/her point of view responsibly in professional and non-professional circles about biological research, ethical and bioethical questions.

- He/she puts a great emphasis on work safety under all conditions.
- He/she has the self-determination to organise the work of small groups, and takes responsibility for this.
- He/she knows the legal conditions for safe work. He/she stands on his/her own and his/her fellows interests at different forums and suggests changes to improve work conditions.
- He/she obtains work experience and helps others to work efficiently.
- He/she knowingly builds his/her own career and helps others to do so.

Completion of the MSc Program

The Credit System

Majors in the Hungarian Education System have generally been instituted and ruled by the Act of Parliament under the Higher Education Act. The higher education system meets the qualifications of the Bologna Process that defines the qualifications in terms of learning outcomes: statements of what students know and can do on completing their degrees. In describing the cycles, the framework uses the European Credit Transfer and Accumulation System (ECTS).
ECTS was developed as an instrument of improving academic recognition throughout the European Universities by means of effective and general mechanisms. ECTS serves as a model of academic recognition, as it provides greater transparency of study programs and student achievement. ECTS in no way regulates the content, structure and/or equivalence of study programs.
Regarding each major the Higher Education Act prescribes which professional fields define a certain training program. It contains the proportion of the subject groups: natural sciences, economics and humanities, subject-related subjects and differentiated field-specific subjects.

During the program students have to complete a total amount of 120 credit points. It means approximately 30 credits per semester. The curriculum contains the list of subjects (with credit points) and the recommended order of completing subjects which takes into account the prerequisite(s) of each subject. You can find the recommended list of subjects/semesters in chapter “Model Curriculum of Bilogy MSc Program”. Students holding BSc degrees in non-biology disciplines may be required to complete additional courses from the Biology BSc curriculum as a condition of their acceptance into and completion of the Biology MSc program.