



BIOPHYSICS

Programme type	Master studies
Field of study	Biophysics
Study area	Life Sciences
Degree	Master of Life Sciences
Duration	2 years
Workload	120 ECTS credits
Language of instruction	English
Location	Life Sciences Centre
Starting date	September 1st

PROGRAMME DESCRIPTION

- *The objective*
The goal of this programme is to educate specialists for research, development, education, business and public sector to solve problems in modern biomedical sciences, environment and ecology.
- *Career opportunities*
A graduate is able to work at high technology industry, research and development, education, medical institutions, private and public agencies where knowledge in a field of biophysics and life sciences are acquired or applied.
- *Access to further studies*
Masters of Sciences in Biophysics can continue scientific career in doctoral (PhD) studies in life sciences.

KEY LEARNING OUTCOMES

A holder of Master's degree in Biophysics has good knowledge of general principles of operation and pathology in live systems, the capabilities and limitations of modern biophysical methods, principles of data analysis and

planning of scientific investigation. The graduate is able to constantly renew the knowledge and apply it to solve problems. He/she is also able to transfer knowledge and concepts to specialists and non-specialists.

COURSE INFORMATION

The study programme has the following structure:

Course Type	1st Semester (30 ECTS credits)	2nd Semester (30 ECTS credits)	3rd Semester (30 ECTS credits)	4th Semester (30 ECTS credits)
Compulsory Courses	Biophotonics (5) Research Project (5)	Biophysical Nanotechnology (5) Research Project (10)	Lasers in Biology and Medicine (5) Research Project (10)	Master Thesis (30)
Elective Courses	GROUP AUTUMN: Biophysics of Sensory Systems (5) Bioelectric Processes (5) Cellular Biophysics (5) Molecular Mechanisms of Signal Transduction (5) Brain Research Methods (5) Sensory Systems in Plants (5) Biothermodynamics of Protein – Ligand Interaction (5) Synthetic Biology (5) Introduction to Data Analysis with R (5) Models of Populations (5) Neurophysiology (5) Systems Biology (5) Management in modern company of biotechnology (5)	GROUP SPRING: Mathematical Physiology (4) Biophysics of Neuron (4) Biophysics of Control Systems (5) Cell Technologies (5) Bioethics (5)	GROUP AUTUMN: Biophysics of Sensory Systems (5) Bioelectric Processes (5) Cellular Biophysics (5) Molecular Mechanisms of Signal Transduction (5) Brain Research Methods (5) Sensory Systems in Plants (5) Biothermodynamics of Protein – Ligand Interaction (5) Synthetic Biology (5) Introduction to Data Analysis with R (5) Models of Populations (5) Neurophysiology (5) Systems Biology (5) Management in modern company of biotechnology (5)	

	X-ray Crystallography of Biological Macromolecules (5)		X-ray Crystallography of Biological Macromolecules (5)	
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GRADUATION REQUIREMENTS

Studies are finished by defending of Final Master Degree Project.

EXAMINATION AND ASSESSMENT REGULATIONS

The main form of evaluation is an examination. However, courses units may be evaluated by the pass/fail evaluation as well. Every course unit is concluded with either a written or written-oral examination or pass/fail evaluation. Student's knowledge and general performance during the exam are evaluated using grading scale from 1(very poor) to 10(excellent), or by pass or fail evaluation in the cases when pass/fail evaluation is foreseen as a final evaluation of the course unit.

ENTRY REQUIREMENTS

- Bachelor's degree or its equivalent in Life Sciences, Physics, Chemistry, Mathematics, Computer Sciences.
- English language proficiency – the level not lower than B2 (following the Common European Framework of Reference for Languages (CEFR), or TOEFL score 75/IELTS score 6

APPLICATION AND SELECTION REQUIREMENTS

The grade for admission (K) is calculated by the following formula:

$$K = 0,4V + 0,3E + 0,3D$$

V – is the average of all bachelor grades (except for final bachelor thesis and/or final bachelor exam);

E – evaluation of motivation letter;

D – evaluation of final bachelor thesis.

Academic contact

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