FACULTY OF MATHEMATICS AND NATURAL SCIENCES

Courses from the Bachelor's degree programmes:
- MATERIALS PHYSICS AND NANOTECHNOLOGIES
- APPLIED MATHEMATICS

Courses from the Master's degree programmes:
- MEDICAL PHYSICS
- MATERIAL PHYSICS
- APPLIED MATHEMATICS
- BUSINESS BIG DATA ANALYTICS

MODULES IN ENGLISH FROM MATERIALS PHYSICS AND NANOTECHNOLOGIES STUDY PROGRAMME

Course code	Course title	ECTS/Credits	Semester	Study cycle
Bachelor's level courses				
Core modules				
P000B011	Introduction to specialty	6	autumn	bachelor
P190B101	Physics 1	6	spring/autumn	bachelor
P230B202	Physics 2	6	spring/autumn	bachelor
Specific modules from Materials Physics and Nanotechnologies study programme				
P190B001	Thermodynamics and Statistical Physics	6	autumn	bachelor
T150B210	Phenomena of Modern Optics and Nanophotonics	6	autumn	bachelor
P190B302	Quantum Mechanics	6	autumn	bachelor
P200B103	Optics	3	autumn	bachelor
P200B403	Electrodynamics	6	autumn	bachelor
P240B001	Vacuum Physics and Technics	3	autumn	bachelor
T150B221	Micro- and Nanotechnology: Applications and Analysis Methods	9	autumn	bachelor
P250B301	Solid State Physics	6	spring	bachelor
P260B103	Physics of Surface Phenomena	6	autumn	bachelor
P220B305	Nuclear and Particle Physics	6	autumn	bachelor
T150B186	Functional Materials and Nanotechnologies	6	autumn	bachelor
T150B210	Phenomena of Modern Optics and Nanophotonics	6	autumn	bachelor
P520B001	Astrophysics	3	autumn	bachelor
P190B005	Classical Mechanics	6	spring	bachelor
P260B001	Materials Physics	6	Spring	bachelor

MODULES IN ENGLISH FROM APPLIED MATHEMATICS & BUSINESS BIG DATA ANALYTICS STUDY PROGRAMMES

Core modules for technical study programmes students				
Course code	**Course title**	**ECTS Credits**	**Semester**	**Study**
Bachelor's level courses				
P130B001	Mathematics 1	6	autumn	bachelor
P130B002	Mathematics 2	6	spring	bachelor
P160B003	Theory of Probability and Statistics	6	autumn	bachelor
Specific modules from Applied mathematics study programme				
P160B117	Stochastic Processes	6	autumn	bachelor
P170B127	Data Security	6	autumn	bachelor
P160B124	Machine Learning Methods	6	spring/autumn	bachelor
P170B120	Mathematical Methods for Processing of Digital Images	6	autumn	bachelor
P110B001	Graph Theory	6	autumn	bachelor
P130B003	Differential Equations	6	autumn	bachelor
P160B116	Optimization Methods	6	spring	bachelor
P170B111	Cryptology	6	spring	bachelor
Master's level courses				
P130M100	Nonlinear Dynamical Models	6	autumn	master
P170M100	Cryptographic systems	6	autumn	master
P170M1115	Mathematical Methods of Artificial Intelligence	6	autumn	master
P000M013	Research Project 1	6	autumn	master
P160M123	Stochastic Programing	6	spring	master
P000M014	Research Project 2	6	spring	master
Specific Module from Business big data analytics study programme				
P160M126	Business Risk and Uncertainty Analytics	6	autumn	master

MODULES IN ENGLISH FROM MEDICAL PHYSICS STUDY PROGRAMME

Course code	Course title	ECTS/Credits	Semester	Study cycle
Master's level courses				
B140M104	Medical Radiation Physics	6	autumn	master
B140M006	Radiation Protection and Safety	6	autumn	master
B145M002	Radiobiology and Mathematical Modelling	6	autumn	master
B470M001	Fundamentals of Human Anatomy and Physiology	6	autumn	master
B140M102	Ionizing Radiation Imaging Instruments and Methods in Medicine	6	autumn	master
B110M002	Digital Processing of Biomedical Signals	6	spring	master
T160M004	Radiation Detectors and Measurements	6	spring	master
B145M010	Applied Radionuclide Physics	3	autumn	master
B140M003	Diagnostic Radiation Physics	6	spring	master
B140M004	Radiation Therapy Physics	9	autumn	master
B140M105	Radiation pollution	6	autumn	master
B000M003	Research Project 3	6	autumn	master
B000M001	Research Project 1	6	autumn	master
B000M002	Research Project 2	6	spring	master

MODULES IN ENGLISH FROM MATERIAL PHYSICS STUDY PROGRAMME

Course code	Course title	ECTS/Credits	Semester	Study cycle
Master's level courses				
P260M104	Plasma Technologies and Analysis Methods	6	autumn	master
P220M001	Influence of Radiation on Material	6	autumn	master
P260M101	Nanotechnologies in Power Engineering of Alternative Fuel	6	autumn	master
P200M706	Physics of Magnetic Phenomena	6	autumn	master
T155M010	Computational Material Science	6	spring	master
T150M222	Clean room technologies	6	spring	master
P200M001	Applied optics and photonics	6	spring	master
T155M111	Surface engineering and nanotechnologies	6	autumn	master
P002M101	Functional Materials - Exquisite Chapters	6	autumn	master
P190M119	Development and Management of Physical Technology Projects	6	autumn	master
P000M005	Research Project 1	6	autumn	master
T000M114	Research Project 2	6	spring	master
T000M115	Research Project 3	12	autumn	master