Photonics and Nanoelectronics. Master Program.

Semester 1 (18 weeks)

Compulsory Courses

Discipline	Final assessment	ECTS
Computer technology in scientific research	Course project	2.0
Optical waves in crystals	Final Test	2.0
Optical properties of semiconductors	Exam	3.0
Epitaxial growth of nanostructures	Exam	3.0
Dimensional quantization phenomena	Exam	3.0
Kinetic phenomena in semiconductor nanostructures	Exam	3.0
Individual Research Project	Oral presentation	8.0

Elective Courses

Electronic paramagnetic resonance: fundamentals and applications / Physics of disordered nanosystems	Final Test	2.0

Semester 1: 26 ECTS

Semester 2 (18 weeks)

Compulsory Courses

Discipline	Final assessment	ECTS
Methods of mathematical modeling	Course project	2.0
Design and technology of electronic components	Course project Exam	5.0
Fundamentals of modern techniques to study nanomaterials and nanostructures	Course project	2.0
Modern problems of electronics and nanolectronics. Technology of advanced materials and structures	Exam	3.0
Semiconductor lasers	Exam	3.0
Individual Research Project	Oral presentation	8.0
Practice and Training		4.5

Elective Courses

Photonic glasses / Fractals and chaos in condensed matter	Final Test	2.0
Semiconductor devices / Plasmonics	Final Test	3.0
Seminar on nanoelectronics / Seminar on nanophotonics	Final Test	1.5

Semester 2: 34 ECTS

Semester 3 (18 weeks)

Compulsory Courses

Discipline	Final assessment	ECTS
History and methodology of electronics	Exam	4.0
Optical phenomena in nanostructures	Exam	4.0
Nanophotonics	Exam	4.0
Wide-band semiconductors	Exam	3.0
Individual Research Project	Oral presentation	8.0

Elective Courses

Optical waveguides and microresonators / Ultracompact light sources and controls	Final Test	3.0
Seminar on nanoelectronics / Seminar on nanophotonics	Final Test	2.5

Semester 3: 28.5 ECTS

Semester 4 (18 weeks)

Internship (6 weeks)	Written report / Oral presentation	9.0
Master's Thesis	Written report	15.0
Master's Thesis Presentation	Oral presentation	7.5

Semester 4: 31.5 ECTS

Total workload: 120 ECTS