

Field of study: *Physics (Studies in English)*

Profile: general academic

2-year second cycle programme, full-time

Academic year: 2025/2026

Specialization: **Physics of Condensed Matter and Semiconductor Nanostructures**

First year, semester 1

Course title	Course code	Form of classes	Option A		Option B		Learning outcomes assessment
			Number of hours	Number of ECTS points	Number of hours	Number of ECTS points	
Physics Laboratory, 2nd Level A	1100-4PLA	lab	45	5	45	5	written report (grade [#])
Elective course from the Statistical physics list	1100-4SPA or 1100-4SPB	lecture	45	7	45	7	written or oral exam
		exercises	45		45		
Intellectual property and entrepreneurship (Option A) or Intellectual property and entrepreneurship with team project (Option B)	1100-4IPE or 1100-4AF16	lecture	30	2	30	5	written exam
		team project	0	0	75		project
Subject to choose from the Numerical analysis list			30	3	30	3	written exam or grade
Introduction to solid state physics	1100-4ISSP	lecture	30	6	30	6	written exam
		exercises	30		30		
Specialist seminar		seminar	30	2	30	2	grade
OGUN (General University Courses)*			30	3	30	3	written exam or grade
In total			315	28	390	31	

First year, semester 2

Course title	Course code	Form of classes	Number of hours	Number of ECTS points	Learning outcomes assessment
Introduction to Philosophy	1100-IP	seminar	30	3	grade
Subject to choose from the Numerical analysis list			30	3	written exam or grade
Low-dimensional systems	1100-4LDS	lecture	30	6	written or oral exam
		exercises	30		
Magnetism and superconductivity	1100-4MSC	lecture	30	3	written or oral exam
Experimental methods in semiconductor physics	1100-4EMSP	lecture	30	3	written or oral exam
Physics Laboratory, 3rd Level	1100-4PL3	lab	120	12	grade
Specialist seminar		seminar	30	2	grade
In total			330	32	

Second year, semester 3

Course title	Course code	Form of classes	Option A ^{***}		Option B		Learning outcomes assessment
			Number of hours	Number of ECTS points	Number of hours	Number of ECTS points	
Team project ^{**}	1100-TP or 1100-ZPS2	project	75	5	0	0	grade
Optical properties of semiconductors	1100-OPS	lecture	30	6	30	6	written or oral exam
		exercises	30		30		
Bose-Einstein condensation and superfluidity	1100-BECSST	lecture	30	3	30	3	written or oral exam
Specialist elective subjects			30	3	30	3	written exam or grade
Specialist seminar		seminar	30	2	30	2	grade
Proseminar Physics of Condensed Matter and Semiconductor Nanostructures	1100-PMSN	seminar	30	3	30	3	grade
Laboratory in condensed matter physics I	1100-LCMP1	workshop	120	10	120	10	grade
OGUN (General University Courses) ^{***}			30	3	30	3	written exam or grade
In total			405	35	330	30	

Second year, semester 4					
Course title	Course code	Form of classes	Number of hours	Number of ECTS points	Learning outcomes assessment
Work placement	1100-WP	internship	80	4	written report (grade)
Proseminar Challenges of the modern times	1100-PCMT	seminar	20	2	grade
Diluted magnetic semiconductors	1101-4'DMS	lecture	30	3	written or oral exam
Specialist seminar		seminar	30	2	grade
Laboratory in condensed matter physics II	1100-LCMP2	workshop	210	19	submission of a master's thesis accepted by the supervisor
In total			370	30	

In total	Option A		Option B	
	Number of hours	Number of ECTS points	Number of hours	Number of ECTS points
1 year	645	60	720	63
2 year	775	65	700	60
1 and 2 year	1420	125	1420	123

Comments:

- * The completion of 5 ECTS from subjects in the fields of humanities or social sciences is required as part of the study program.
- ** A team project can be completed within a dedicated course or as part of other courses in the study program, provided that the organization of the subject's classes involves teamwork.
- *** Option A is obligatory for those students who did not complete a team project during the first year
- # Passing with a grade means that the grade is awarded based on one or more written assessments conducted during the course of the didactic classes or based on one or more written assignments carried out during the period of didactic classes, following the subject's syllabus.