

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

2-year second cycle programme, full-time

Academic year: 2022/2023

Specialization: Computer Modeling of Physical Phenomena

First year, semester 1

Course name/group of courses	Course code	Type of course	Option A		Option B		Verification of learning outcomes
			Number of hours	Number of ECTS points	Number of hours	Number of ECTS points	
Physics Laboratory, 2nd Level A1 or Physics Laboratory, 2nd Level A2	1100-4PLA1 or 1100-4PLA2	lab	45	5	45	5	grade
Courses selected from the list Statistical physics	1100-4SPA or 1100-4SPB	lecture	45	7	45	7	written or oral exam
		exercises	45		45		
Intellectual property and entrepreneurship or Intellectual property and entrepreneurship with team project (Option A or Option B)	1100-4IPE or 1100-4AF16	lecture	30	2	30	5	written exam or project
		project	0	0	75		
Courses selected from the list Numerical analysis			30	3	30	3	written exam or grade
Courses selected from the list Advanced quantum mechanics		lecture	30	6	30	6	written exam
		exercises	30		30		
Courses selected from the list Topics in contemporary physics			30	3	30	3	written exam or grade
Selected specialization seminar		seminar	30	2	30	2	grade
In total			315	28	390	31	

Credit with a grade means that the grade is issued on the basis of one or more written tests or one or more written works carried out in the period of the didactic classes and in accordance with the syllabus of the subject

First year, semester 2

Course name/group of courses	Course code	Type of course	Option A		Option B		Verification of learning outcomes
			Number of hours	Number of ECTS points	Number of hours	Number of ECTS points	
Introduction to Philosophy	1100-IP	seminar	30	3	30	3	grade
Courses selected from the list Numerical analysis			30	3	30	3	written exam or grade
Courses selected from the list Topics in contemporary physics - electives (Option A or/ Option B)			120	12	90	9	written exam or grade
Workshop on computer modeling	1100-4WCM	workshop	105	9	105	9	written exam or grade
Selected specialization seminar		seminar	30	2	30	2	grade
OGUN (General University Courses)*			30	3	30	3	written exam or grade
In total			345	32	315	29	

*5 ECTS points should be obtained from general courses unrelated to physical sciences, i.e. humanities and social sciences

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Second year, semester 3

Course name/group of courses	Course code	Type of course	Option A*		Option B		Verification of learning outcomes
			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
Courses selected from the list Topics in contemporary physics			90	9	90	9	written exam or grade
Selected specialization seminar		seminar	60	4	60	4	grade
Workshop in advanced computer modeling I	1100-5WACM1	workshop	135	13	135	13	grade
OGUN (General University Courses)***			30	3	30	3	written exam or grade
In total			390	34	315	29	

*Option A is obligatory for those students who did not complete a team project during the first year

** Team project can be taken as a separate course or as a part of the course that requires teamwork

***5 ECTS points should be obtained from general courses unrelated to physical sciences, i.e. humanities and social sciences

Credit with a grade means that the grade is issued on the basis of one or more written tests or one or more written works carried out in the period of the didactic classes and in accordance with the syllabus of the subject

Second year, semester 4

Course name/group of courses	Course code	Type of course	Number of hours	Number of ECTS points	Verification of learning outcomes
Work placement	1100-WP	internship	80	4	grade
Proseminar Challenges of the modern times	1100-PCMT	seminar	20	2	grade
Proseminar Theoretical physics	1100-5sTP	seminar	30	3	grade
Workshop in advanced computer modeling II	1100-5WACM2	workshop	225	22	pass/fail (no grade)
In total			355	31	

Credit with a grade means that the grade is issued on the basis of one or more written tests or one or more written works carried out in the period of the didactic classes and in accordance with the syllabus of the subject

In total	Option A		Option B	
	Number of hours	Number of ECTS points	Number of hours	Number of ECTS points
1 year	660	60	705	60
2 year	745	65	670	60
1 and 2 year	1405	125	1375	120