

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

2-year second cycle programme, full-time

Academic year: 2023/2024

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
		project	0	0	75		project
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	

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

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 any 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

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	

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