

STUDY PROGRAMME: PHYSICS, SECOND-DEGREE LEVEL, SPECIALTY – MASTER'S STUDY OF THEORETICAL PHYSICS

COURSE	EXAM/PASS (semester)	Total number of hours	LEC	CLA	SEM	LAB	ECTS credits	Number of class hours per week																								
								1st year 2022/2023										2nd year 2023/2024														
								semester 1					semester 2					semester 3					semester 4									
								LEC	CLA	SEM	LAB	ECTS	LEC	CLA	SEM	LAB	ECTS	LEC	CLA	SEM	LAB	ECTS	LEC	CLA	SEM	LAB	ECTS					
Basic Course I: Selected tools of modern theoretical physics 1A	PASS (1)	30	15			15	3	2 ^a			2 ^a	3																				
Basic Course I: Selected tools of modern theoretical physics 1B	PASS (1)	30	15	15			3	2 ^a	2 ^a			3																				
Basic Course I: Selected tools of modern theoretical physics 2A	PASS (2)	30	15	15			3					2 ^a	2 ^a			3																
Basic Course I: Selected tools of modern theoretical physics 2B	PASS (2)	30	15	15			3					2 ^a	2 ^a			3																
Basic Course II: Trends in modern theoretical physics A	PASS (1)	20	10	10			2	2 ^b	2 ^b			2																				
Basic Course II: Trends in modern theoretical physics B	PASS (1)	20	10	10			2	2 ^b	2 ^b			2																				
Basic Course II: Trends in modern theoretical physics C	PASS (1)	20	10	10			2	2 ^b	2 ^b			2																				
Core Course 1: Modern quantum mechanics with elements of quantum optics	EXAM (1)	60	30	30			6	2	2			6																				
Core Course 2: Classical field theory	EXAM (1)	60	30	30			6	2	2			6																				
Core Course 3:	Quantum electrodynamics ^c	EXAM (1)	60	30	30		6	2	2			6																				
	Contemporary problems in condensed matter physics ^c																															
Core Course 4:	Statistical physics 2 ^{d,e}	EXAM (2)	60	30	30		6					2	2			6																
	Quantum field theory ^{d,e}																															
Core Course 5: General relativity and gravitation ^e	EXAM (4)	60	30	30			6																	2	2		6					
Core Course 6: Introduction to quantum information theory for physicists ^e	EXAM (4)	60	30	30			6																	2	2		6					
Highlights of Modern Physics and Astrophysics	PASS (2)	30			30		4						2		4																	
Optional Course: Specialized lecture 1 ^f	EXAM (2)	60	30	30			6					2	2			6																
Optional Course: Specialized lecture 2 ^f	EXAM (3)	60	30	30			6										2	2			6											
Optional Course: Specialized lecture 3 ^f	EXAM (3)	60	30	30			6										2	2			6											
Optional Course: Monographic lecture 1 ^f	EXAM (2)	30	30				3					2			3																	
Optional Course: Monographic lecture 2 ^f	EXAM (2)	30	30				3					2			3																	
Optional Course: Monographic lecture 3 ^f	EXAM (3)	30	30				3										2				3											
Optional Course: Monographic lecture 4 ^f	EXAM (3)	30	30				3										2				3											
Preparatory Polish language course for foreigners ^g	EXAM (2)	60		60			5 ^g		2 ^g				2 ^g		5 ^g																	
Humanistic/Social course ^h	PASS (3)						5														5											
Initial training in the field of OSH and fire protection	PASS (1)		E-LEARNING				1				1																					
Master Laboratory 1	PASS (3)	150				150	5														10	5										
Master Laboratory 2	PASS (4)	150				150	5																	10	5							
Master Seminar 1	PASS (3)	30			30		3											2			3											
Master Seminar 2	PASS (4)	30			30		3																	2		3						
Master Thesis and Master Degree Examination	EXAM (4)						10																			10						
Total							120	10	9 ^g		1	31	10	8 ^g	2	28	8	4	2	10	31	2	2	2	10	30						

LEGEND:

- LEC – lecture
- CLA – class
- LAB – laboratory
- SEM – seminar

REMARKS:

- ^a The course consists of 2 hours of lecture/class/laboratory per week for half a semester.
- ^b The course consists of 2 hours of lecture/class per week for five weeks.
- ^c Student picks one of the courses and passes it as Core Course 3.
- ^d Student picks one of the courses and passes it as Core Course 4.
- ^e The course can be taken alternatively in the 2nd or 4th semester.
- ^f Student takes as many Specialized/Monographic lectures as necessary to gain the required amount of 120 ECTS credits in total.
Specialized/Monographic lectures are optional courses that can be substituted, upon agreement with the Dean, by other advanced courses in English.
Specialized lecture can be replaced by two Monographic lectures and vice versa.
A single 30-hour Monographic lecture for 3 ECTS credits can be replaced by a few shorter Monographic lectures lasting for a total of 30 hours or more and providing together at least 3 ECTS credits.
- ^g Preparatory Polish language course is obligatory for foreigners only.
- ^h At least 5 ECTS credits must be gained by passing Humanistic/Social courses. These courses can be taken, upon agreement with the Dean, from the offer of any faculty.