Faculty of Physics, Mathematics and Computer Science
Major: Applied physics, Specialization: Computer modeling
Level of qualification: second-cycle programme study, Education profile: general academic

No.	Valid for academic year: 2019/2020 Updated on:	Hours	ECTS	Summary						Semester I							Semester II							Semester III						
				W	C	L	K	S	P	W	C	L	K	S	P	E	W	C	L	K	S	P	E	W	C	L	K	S	P	E
A	**General subjects**	60	5	30	30	0	0	0	0	0	30	0	0	0	0	2	0	0	0	0	0	0	0	30	0	0	0	0	0	3
1	English in physics and technology	30	2	0	30	0	0	0	0	0	30	0	0	0	0	2														
2	Humanities	30	3	30	0	0	0	0	0															30	0	0	0	0	0	3
B	**Basic subjects**	120	8	30	15	45	15	0	15	30	15	45	15	0	15	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Computer assisted experimentation	45	3	15	15	0	0	0	15	15	15	0	0	0	15	3E														
2	Specialized laboratories	45	3	0	0	45	0	0	0	0	0	45	0	0	0	3														
3	Data analysis	30	2	15	0	0	15	0	0	15	0	0	15	0	0	2E														
C	**Major subjects**	345	26	195	75	0	60	15	0	60	30	0	30	0	0	8	135	45	0	30	15	0	18	0	0	0	0	0	0	0
1	Quantum mechanics	60	4	30	30	0	0	0	0	30	30	0	0	0	0	4E														
2	Alternative sources of energy	45	3	30	0	0	0	15	0								30	0	0	0	15	0	3							
3	Geometric methods in physics	30	2	15	0	0	15	0	0								15	0	0	15	0	0	2							
4	Selected topics in modern physics	15	2	15	0	0	0	0	0								15	0	0	0	0	0	2							
5	Condensed matter physics	45	4	30	15	0	0	0	0								30	15	0	0	0	0	4E							
6	Modern optics	60	4	30	30	0	0	0	0								30	30	0	0	0	0	4E							
7	Computer modeling	60	4	30	0	0	30	0	0	30	0	0	30	0	0	4E														
8	Adaptive numerical methods	30	3	15	0	0	15	0	0								15	0	0	15	0	0	3							
D	**Specialization subjects**	270	15	90	0	0	180	0	0	45	0	0	60	0	0	6	45	0	0	120	0	0	9	0	0	0	0	0	0	0
1	Computer simulations in physics	60	4	15	0	0	45	0	0								15	0	0	45	0	0	4E							
2	Three-dimensional modeling	45	3	15	0	0	30	0	0	15	0	0	30	0	0	3														
3	Digital image processing	60	3	30	0	0	30	0	0	30	0	0	30	0	0	3														
4	Computational methods	45	3	15	0	0	30	0	0								15	0	0	30	0	0	3							
5	Application programming	60	2	15	0	0	45	0	0								15	0	0	45	0	0	2							
E	**Subjects connected with degree certific**	85	24	30	0	0	0	45	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	45	10	24
1	Monograph lecture	30	4	30	0	0	0	0	0															30	0	0	0	0	0	4
2	Diploma seminar	45	5	0	0	0	0	45	0															0	0	0	0	45	0	5
3	Diploma thesis	10	15	0	0	0	0	0	10															0	0	0	0	0	10	15
F	**Optional courses**	180	12	90	0	0	60	0	30	45	0	0	30	0	15	6	30	0	0	15	0	15	3	15	0	0	15	0	0	3
1	Optional course 1	60	3	30	0	0	15	0	15	30	0	0	15	0	15	3														
2	Optional course 2	60	3	30	0	0	15	0	15								30	0	0	15	0	15	3							
4	Invited course 1	30	3	15	0	0	15	0	0	15	0	0	15	0	0	3														
5	Invited course 2	30	3	15	0	0	15	0	0															15	0	0	15	0	0	3
	Total	1060	90	465	120	45	315	60	55	180	75	45	135	0	30	30	210	45	0	165	15	15	30	75	0	0	15	45	10	30
				1060						465							450							145						
	Exams			7						4							3							0						

Letter "E" with the number of ECTS means exam

Legend: W - Lecture, C - Exercises, L - Laboratory, K - Computer laboratory, S - Seminar, P - Project

Z-ca DYREKTORA INSTYTUTU FIZYKI
Ds. Dydaktyki
dr inż. Małgorzata DURAJ