Silesian University of Technology
Institute of Physics - CSE

DEGREE PROGRAMME
Field of study: ENGINEERING PHYSICS

full-time studies
1st level, practical profile

Approved
30.01.2017

	Subjects		hours	Semester I					Semester II					Semester III					Semester IV					Semester V						Semester VI						Semester VII						
				LC	C	LB	E	EC	LC	C	LB	E	EC	LC	C	LB	E	EC	LC	C	LB	E	EC	LC	C	LB	P	E	EC	LC	C	LB	S	E	EC	LC	C	LB	S	P	E	EC
	humanities & social																																								
1	Physical Education		60																						2				0		2				0							
2	English language		120		2			2		2			2		2			2		2		E	2																			
3	Legal foundations of business activity		15	1				2																																		
4	Intellectual and Industrial Property Protection		15						1				2																													
5	Ergonomics and Environment Protection Basics		15																1				1																			
6	Organization of Enterprises and Quality Management		30																					2					2													
7A	Basics of economics		15																											1					1							
7B	Fundamentals of accounting																																									
	basic & core																																								
8	General Physics		180	2	2		E	6	2	2		E	6	2	2		E	6																								
9	Laboratory of Physics		60								2		4			2		4																								
10	Mathematics		120	2	2		E	6	2	2		E	6																													
11	Data analysis	spec	60	2		2		5																																		
12	Engineering Graphics		60	2	2			4																																		
13	Fundamentals of Computer Programming		60	2		2		5																																		
14	Computer Methods for Engineering Design	spec	60						1		3		5																													
15	Matlab application in physics and technology	spec	60											2		2		4																								
16	Numerical methods in physics	spec	60											2		2	E	4																								
17	Introductory solid state physics	spec	60																2		2	E	5																			
18	Fundamentals of nuclear physics	spec	60																2		2	E	5																			
19	Introduction to physical electronics	spec	60																					2		2		E	5													
20	Experimental methods in physics	spec	120																					2		2		E	5	2			2	E	5							
21	Sources and detectors of electromagnetic waves	spec	60																											2		2			4							
22	Physics and technology of high vacuum	spec	60																																	2				2		4
23	Simulations in Comsol Multiphysics	spec	90																2		2		4				2		3													
24	Advanced Physics Laboratory	spec	60																													4			4							
25A	Automation of physical measurements	spec	60											**2**		**2**		**5**																								
25B	Measurement data acquisition systems																																									
26A	Electrodynamics	spec	60																**2**	**2**			**3**																			
26B	Optics																																									
27A	Elements of Quanutm Mechanics		60																					**2**	**2**				**4**													
27B	Fundamentals of Statistical Physics																																									
28A	Physical sensors	spec	60																					**2**		**2**			**5**													
28B	Methods of testing materials																																									
29A	Isotopic Methods	spec	60																											**2**		**2**		**E**	**5**							
29B	Electron spectroscopies																																									
30A	Measurements in High Vacuum	spec	60																																	**2**		**2**				**4**
30B	Scanning microscopy																																									
31A	Technologies in Vacuum	spec	60																																	**2**		**2**				**4**
31B	Chemical sensors and biosensors																																									
32A	Charged particles motion in fields		30																																	**1**			**1**			**2**
32B	Cryogenics																																									
32C	Mathematical methods in physics																																									
33	Specialist laboratory (elected)	spec	60																																			4				4
34	Engineer project (elected)	spec	45																																					3	E	12
	supplementary																																								
35A	Programming in C/C++	spec	60						1		3		5																													
35B	Python Programming																																									
36A	Materials science	spec	60											2		2		5																								
36B	Methods of materials treatment																																									
37A	Databases	spec	60																2		2		4																			
37B	Operating Systems																																									
38A	Communication and industrial networks	spec	60																											2		2			5							
38B	PLC programming																																									
	industry placement																																								
39	Industry placement after 4, 5 & 6 sem.	spec	480																				6						6						6							
	Sum of hours		2835	11	8	4	2	30	7	6	8	2	30	10	4	10	2	30	11	4	8	3	30	10	4	6	2	2	30	9	2	10	2	2	30	7	0	8	1	5	1	30
	hours per week			23					21					24					23					22						23						21						
	number of exams		14	2					2					2					3					2						2						1						

Teaching modes

LC	Lecture	75%
C	Classes	32%
LB	Laboratory	17%
P	Project	67%
S	Seminar	

basic & core	**157**
elective	**68**
humanities & social, supplem.	**35**
specialist subjects	**141**