

STUDY PROGRAMME

programme: **NANOTECHNOLOGY**
 profile: academic
 level: 1st degree – BSc
 system of studies: full-time
 valid from: 2018/2019
 duration: 6 semesters

Year	Semester	Course name	Course details							Form of assessment	ECTS
			Hours						Total		
			lectures	tutorials	classes	seminars	labs				
I	1	Chemical fundamentals of nanotechnology 1	28	28					56	E	7
		Physical fundamentals of nanotechnology 1	28	28					56	E	7
		Mathematics 1	28	28					56	E	6
		Information technology and statistics	14	42					56	C	5
		Foreign language (pl, en)*			60				60	C	2
		Trainings: Occupational safety and health; Protection of intellectual property and copyright								C	0
total (semester 1):			hours: 284						ECTS: 27		
II	2	Chemical fundamentals of nanotechnology 2	28	14				56	98	E	8
		Physical fundamentals of nanotechnology 2	28	28				42	98	E	8
		Mathematics 2	28	28					56	E	5
		Programming 1						28	28	C	3
		Information technology and statistics 2						56	56	C	4
		Foreign language (pl, en)*			60				60	E	5
total (semester 2):			hours: 396						ECTS: 33		
II	3	Physical fundamentals of nanotechnology 3	28	28				42	98	E	8
		Organic chemistry with elements of biochemistry	28	28				56	112	E	9
		Mathematics 3	28	28					56	E	5
		Experimental methods in nanotechnology	28						28	E	4
		Laboratory of nanotechnology 1						40	40	C	4
		Elective courses **						28	28		3
total (semester 3):			hours (minimum): 362						ECTS: 33		
II	4	Laboratory of nanotechnology 2						56	56	E	6
		Elective courses ***							238		24
total (semester 4):			hours (minimum): 294						ECTS: 30		
III	5	Introduction to semiconductor physics	28					40	68	E	7
		Laboratory of nanotechnology 3						56	56	C	6
		Diploma seminar ****					14		14	C	1
		Elective courses **							126		15
total (semester 5):			hours (minimum): 264						ECTS: 29		
III	6	Economic aspects of nanotechnology	14						14	C	1
		Laboratory of nanotechnology 4						42	42	C	5
		Diploma seminar ****					14		14	C	1
		Diploma thesis and preparation to final exam							0	E	10
		Elective courses ***							140		13
total (semester 6):			hours (minimum): 210						ECTS: 30		
TOTAL IN THE COURSE OF STUDIES:			hours: 1810						ECTS: 182		

Forms of assessment: E – exam, C – credit with grade

* Polish language for foreigners or English language with B2 level after the course assumed.

** The student selects the elective course from the provided list of elective courses for winter semester (semesters 3 and 5). The list of courses (including their content, form of teaching, schedules as well as minimum and maximum number of students).

*** The student selects the elective course from the provided list of elective courses for summer semester (semesters 4 and 6). The list of courses (including their content, form of teaching, schedules as well as minimum and maximum number of students).

**** The student selects the seminar and the department in which he/she will prepare the BSc thesis from the list provided by the Dean of the Faculty.

NANOTECHNOLOGY: List of elective courses

Year	Semester	Course name	Course details							Form of assessment	ECTS
			Hours						Total		
			lectures	tutorials	classes	seminars	lab.				
II or III	3 or 5	Modern methods of total synthesis	28						28	C	3
		Classical and relativistic mechanics	28	14					42	C	3
		Computational methods in nanotechnology	14	28					42	C	6
		Nanostructures	28	28					56	C	6
		Programming 2 – C++						28	28	C	3
		Programming 2 – Java						28	28	C	3
		Project		14				14	28	C	3
TOTAL:			hours: 252						ECTS: 27		
II or III	4 or 6	Physical chemistry	28					42	70	E	6
		Energy storage	28						28	C	3
		Physics of atom and molecule	28	28					56	C	4
		Statistical physics and thermodynamics	28	28					56	E	6
		Physicochemistry of surface	56	28					84	C	7
		Crystallography	14	14					28	E	4
		Nanoelectronics	28						28	E	4
		Toxicology of nanomaterials	14						14	C	2
		Electrodynamics	28	28					56	C	4
		Chemistry and technology of polymers	28						28	E	4
TOTAL:			hours: 448						ECTS: 44		