1.	**Field of study**	**Materials Science and Engineering**
2.	Academic year of entry	2015/2016 (winter term), 2016/2017 (winter term), 2017/2018 (winter term)
3.	Academic year for which the revised course structure applies	—
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	ISCED code	0715 (Mechanics and metal trades)

Specialization: Biomaterials

A

			form of teaching				year 1						year 2						year 3						year 4		
							semester 1			semester 2			semester 3			semester 4			semester 5			semester 6			semester 7		
No.	Module	E/C	Total	L	O	Total ECTS	L	O	E	L	O	E	L	O	E	L	O	E	L	O	E	L	O	E	L	O	E
1	Basics of management	Z	45	30	15	3	30	15	3																		
2	Crystallography	E	60	30	30	5	30	30	5																		
3	Applied mathematics 1	E	60	30	30	5	30	30	5																		
4	Chemistry 1	E	60	30	30	5	30	30	5																		
5	Computer science and IT	Z	60	30	30	4	30	30	4																		
6	Physics 1	E	90	45	45	6	45	45	6																		
7	Chemistry 2	E	60	30	30	4				30	30	4															
8	Applied mathematics 2	E	60	30	30	5				30	30	5															
9	Mathematical-physical basis of materials science	Z	75	30	45	3				30	45	3															
10	Physics 2	E	75	30	45	5				30	45	5															
11	Programming languages	E	60	30	30	3				30	30	3															
12	Technical drawing	Z	45	15	30	3				15	30	3															
13	Technical thermodynamics	Z	45	30	15	3				30	15	3															
14	Basics of electronics and electrotechnics	Z	60	30	30	3							30	30	3												
15	Basics of materials science	E	150	75	75	9							75	75	9												
16	Designing and engineering graphics	Z	45	15	30	3							15	30	3												
17	Introduction to biomaterials	Z	60	30	30	3							30	30	3												
18	Materials testing methods 1	E	75	30	45	4							30	45	4												
19	Mechanics with elements of biomechanics	E	75	45	30	3							45	30	3												
20	Physico-chemistry of biological processes	E	60	30	30	3							30	30	3												
21	Ceramic biomaterials	E	60	30	30	5										30	30	5									
22	Corrosion and corrosion protection	Z	45	20	25	3										20	25	3									
23	Engineering materials	E	75	30	45	6										30	45	6									
24	Materials testing methods 2	E	75	30	45	4										30	45	4									
25	Metallic biomaterials	E	75	30	45	6										30	45	6									
26	Selected marketing issues	E	30	15	15	3										15	15	3									
27	Databases on materials	Z	60	30	30	4													30	30	4						

A

No.	Module	E/C	form of teaching: Total	L	O	Total ECTS	year 1 / semester 1: L	O	E	year 1 / semester 2: L	O	E	year 2 / semester 3: L	O	E	year 2 / semester 4: L	O	E	year 3 / semester 5: L	O	E	year 3 / semester 6: L	O	E	year 4 / semester 7: L	O	E
28	IT techniques in medicine	Z	60	30	30	4													30	30	4						
29	Materials manufacturing technologies	E	150	75	75	9													75	75	9						
30	Object oriented programming and computer simulations	E	60	30	30	4													30	30	4						
31	Polymers for medicine	E	60	30	30	5													30	30	5						
32	Carbon and composite biomaterials	E	60	30	30	5																30	30	5			
33	Diploma laboratory 1	Z	30		30	3																	30	3			
34	Diploma seminar 1	Z	15		15	2																	15	2			
35	Materials surface engineering	E	45	30	15	3																30	15	3			
36	Nanomaterials in medicine	E	75	30	45	6																30	45	6			
37	Principles of materials designing and selection	E	60	30	30	5																30	30	5			
38	Biological and physiological aspects of biomaterials	Z	45	30	15	2																			30	15	2
39	Diploma laboratory 2	Z	60		60	5																				60	5
40	Diploma seminar 2	Z	30		30	5																				30	5
	TOTAL A:		**2490**	**1145**	**1345**	**171**	**195**	**180**	**28**	**195**	**225**	**26**	**255**	**270**	**28**	**155**	**205**	**27**	**195**	**195**	**26**	**120**	**165**	**24**	**30**	**105**	**12**

B - INTERNSHIPS AND FIELD WORK

No.	Module	E/C	form of teaching: Total	L	O	Total ECTS	year 1 / semester 1: L	O	E	year 1 / semester 2: L	O	E	year 2 / semester 3: L	O	E	year 2 / semester 4: L	O	E	year 3 / semester 5: L	O	E	year 3 / semester 6: L	O	E	year 4 / semester 7: L	O	E
1	Professional training	Z				6																		6			
	TOTAL B - INTERNSHIPS AND FIELD WORK:		**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**

C - OTHER REQUIREMENTS

No.	Module	E/C	form of teaching: Total	L	O	Total ECTS	year 1 / semester 1: L	O	E	year 1 / semester 2: L	O	E	year 2 / semester 3: L	O	E	year 2 / semester 4: L	O	E	year 3 / semester 5: L	O	E	year 3 / semester 6: L	O	E	year 4 / semester 7: L	O	E
1	Foreign language 1	Z	30		30	2		30	2																		
2	Foreign language 2	Z	30		30	2					30	2															
3	Psychological aspects of working environment	Z	30	15	15	2				15	15	2															
4	Foreign language 3	Z	30		30	2								30	2												
5	Foreign language 4	E	30		30	2											30	2									
6	Physical education	Z	30		30	1											30	1									
7	Intellectual property protection	Z	15	15		1													15		1						
8	Module University-widy	Z	30	30		3													30		3						
9	Diploma thesis preparation	Z				15																					15
10	Module University-widy	Z	30	30		3																			30		3
	TOTAL C - OTHER REQUIREMENTS:		**255**	**90**	**165**	**33**	**0**	**30**	**2**	**15**	**45**	**4**	**0**	**30**	**2**	**0**	**60**	**3**	**45**	**0**	**4**	**0**	**0**	**0**	**30**	**0**	**18**
	TOTAL:		**2745**	**1235**	**1510**	**210**	**405**		**30**	**480**		**30**	**555**		**30**	**420**		**30**	**435**		**30**	**285**		**30**	**165**		**30**

TOTAL **2745**

The study ends with the awarding of an Engineer - Bachelor's Degree with engineering competencies in the field of Materials Science and Engineering: Biomaterials.

Legend
Each semester consists of 15 weeks
E/C - examination/course work
E - ECTS
L - lecture, O - all forms of teaching excluding lecture (practical classes, laboratory classes, discussion classes, seminar, proseminar, language classes, field practice, workshop, internship, tutoring)

Plan studiów zatwierdzony przez Radę Wydziału w dniu 06.03.2012 r.

Otrzymują:

1. Dział Kształcenia
2. Wydział Informatyki i Nauki o Materiałach
3. Dziekanat

..... (pieczęć i podpis Dyrektora Instytutu)

..... (pieczęć i podpis Dziekana)

1.	**Field of study**	**Materials Science and Engineering**
2.	Academic year of entry	2015/2016 (winter term), 2016/2017 (winter term), 2017/2018 (winter term)
3.	Academic year for which the revised course structure applies	—
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	ISCED code	0715 (Mechanics and metal trades)

Specialization: Materials Science

A

No.	Module	E/C	form of teaching			Total ECTS	year 1						year 2						year 3						year 4		
							semester 1			semester 2			semester 3			semester 4			semester 5			semester 6			semester 7		
			Total	L	O		L	O	E	L	O	E	L	O	E	L	O	E	L	O	E	L	O	E	L	O	E
1	Basics of management	Z	45	30	15	3	30	15	3																		
2	Crystallography	E	60	30	30	5	30	30	5																		
3	Applied mathematics 1	E	60	30	30	5	30	30	5																		
4	Chemistry 1	E	60	30	30	5	30	30	5																		
5	Computer science and IT	Z	60	30	30	4	30	30	4																		
6	Physics 1	E	90	45	45	6	45	45	6																		
7	Chemistry 2	E	60	30	30	4				30	30	4															
8	Applied mathematics 2	E	60	30	30	5				30	30	5															
9	Mathematical-physical basis of materials science	Z	75	30	45	3				30	45	3															
10	Physics 2	E	75	30	45	5				30	45	5															
11	Programming languages	E	60	30	30	3				30	30	3															
12	Technical drawing	Z	45	15	30	3				15	30	3															
13	Technical thermodynamics	Z	45	30	15	3				30	15	3															
14	Basics of electronics and electrotechnics	E	60	30	30	4							30	30	4												
15	Basics of materials science	E	150	75	75	9							75	75	9												
16	Designing and engineering graphics	Z	45	15	30	3							15	30	3												
17	Materials economics	Z	45	30	15	4							30	15	4												
18	Materials electrochemistry	E	60	30	30	4							30	30	4												
19	Materials testing methods 1	E	75	30	45	4							30	45	4												
20	Ceramics	E	60	30	30	4										30	30	4									
21	Composites	Z	45	25	20	3										25	20	3									
22	Corrosion and corrosion protection	Z	45	20	25	3										20	25	3									
23	Materials testing methods 2	E	75	30	45	4										30	45	4									
24	Metals and alloys	E	60	30	30	4										30	30	4									
25	Numerical methods and algorithms	E	45	15	30	3										15	30	3									
26	Polymers	E	60	30	30	3										30	30	3									
27	Selected marketing issues	E	30	15	15	3										15	15	3									

A

No.	Module	E/C	form of teaching			Total ECTS	year 1						year 2						year 3						year 4		
							semester 1			semester 2			semester 3			semester 4			semester 5			semester 6			semester 7		
			Total	L	O		L	O	E	L	O	E	L	O	E	L	O	E	L	O	E	L	O	E	L	O	E
28	Biomaterials	E	45	30	15	3													30	15	3						
29	Databases on materials	Z	60	30	30	4													30	30	4						
30	Materials for electronics and electrotechnics	Z	45	25	20	3													25	20	3						
31	Materials technologies and processing	E	150	75	75	9													75	75	9						
32	Mechanics and strength of materials	E	75	45	30	3													45	30	3						
33	Object oriented programming and computer simulations	E	60	30	30	4													30	30	4						
34	Diploma laboratory 1	Z	30		30	3																	30	3			
35	Diploma seminar 1	Z	15		15	2																	15	2			
36	Materials recycling	Z	45	15	30	5																15	30	5			
37	Materials surface engineering	E	45	30	15	3																30	15	3			
38	Nanomaterials and nanotechnologies	E	60	30	30	4																30	30	4			
39	Principles of materials designing and selection	E	60	30	30	5																30	30	5			
40	Specialised subject 1	Z	30	30		2																30		2			
41	Diploma laboratory 2	Z	60		60	5																				60	5
42	Diploma seminar 2	Z	30		30	5																				30	5
43	Specialised subject 2	Z	30	30		2																			30		2
	TOTAL A:		**2490**	**1195**	**1295**	**171**	**195**	**180**	**28**	**195**	**225**	**26**	**210**	**225**	**28**	**195**	**225**	**27**	**235**	**200**	**26**	**135**	**150**	**24**	**30**	**90**	**12**

B - INTERNSHIPS AND FIELD WORK

No.	Module	E/C	form of teaching			Total ECTS	year 1						year 2						year 3						year 4		
							semester 1			semester 2			semester 3			semester 4			semester 5			semester 6			semester 7		
			Total	L	O		L	O	E	L	O	E	L	O	E	L	O	E	L	O	E	L	O	E	L	O	E
1	Professional training	Z				6																		6			
	TOTAL B - INTERNSHIPS AND FIELD WORK:		**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**

C - OTHER REQUIREMENTS

No.	Module	E/C	form of teaching			Total ECTS	year 1						year 2						year 3						year 4		
							semester 1			semester 2			semester 3			semester 4			semester 5			semester 6			semester 7		
			Total	L	O		L	O	E	L	O	E	L	O	E	L	O	E	L	O	E	L	O	E	L	O	E
1	Foreign language 1	Z	30		30	2		30	2																		
2	Foreign language 2	Z	30		30	2					30	2															
3	Psychological aspects of working environment	Z	30	15	15	2				15	15	2															
4	Foreign language 3	Z	30		30	2								30	2												
5	Foreign language 4	E	30		30	2											30	2									
6	Physical education	Z	30		30	1											30	1									
7	Intellectual property protection	Z	15	15		1													15		1						
8	Module University-widy	Z	30	30		3													30		3						
9	Diploma thesis preparation	Z				15																					15

10	Module University-widy	Z	30	30		3																				30		3
	TOTAL C - OTHER REQUIREMENTS:		**255**	**90**	**165**	**33**	**0**	**30**	**2**	**15**	**45**	**4**	**0**	**30**	**2**	**0**	**60**	**3**	**45**	**0**	**4**	**0**	**0**	**0**	**30**	**0**	**18**
	TOTAL:		**2745**	**1285**	**1460**	**210**	**405**		**30**	**480**		**30**	**465**		**30**	**480**		**30**	**480**		**30**	**285**		**30**	**150**		**30**
TOTAL							**2745**																						

The study ends with the awarding of an Engineer - Bachelor's Degree with engineering competencies in the field of Materials Science and Engineering: Materials Science.

Legend
Each semester consists of 15 weeks
E/C - examination/course work
E - ECTS
L - lecture, O - all forms of teaching excluding lecture (practical classes, laboratory classes, discussion classes, seminar, proseminar, language classes, field practice, workshop, internship, tutoring)

Plan studiów zatwierdzony przez Radę Wydziału w dniu 06.03.2012 r.

Otrzymują:

1. Dział Kształcenia
2. Wydział Informatyki i Nauki o Materiałach
3. Dziekanat

..... (pieczęć i podpis Dyrektora Instytutu)

..... (pieczęć i podpis Dziekana)