1.	**Field of study**	**Materials Science and Engineering**
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2019/2020 (winter term), 2020/2021 (winter term), 2021/2022 (winter term), 2022/2023 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	Academic year for which the revised course structure applies	—

Specialization: Biomaterials

A

No.	Module	Lang.	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	EN	Z	45	30	15	3	30	15	3																		
2	Applied mathematics 1	EN	E	60	30	30	5	30	30	5																		
3	Chemistry 1	EN	E	60	30	30	5	30	30	5																		
4	Computer science and IT	EN	Z	60	30	30	4	30	30	4																		
5	Designing and engineering graphics	EN	Z	45	15	30	4	15	30	4																		
6	Programming languages	EN	Z	60	30	30	3	30	30	3																		
7	Technical drawing	EN	Z	45	15	30	4	15	30	4																		
8	Chemistry 2	EN	E	60	30	30	4				30	30	4															
9	Crystallography	EN	E	60	30	30	5				30	30	5															
10	Applied mathematics 2	EN	E	60	30	30	5				30	30	5															
11	Mathematical-physical basis of materials science	EN	Z	75	30	45	3				30	45	3															
12	Physics 1	EN	E	105	45	60	6				45	60	6															
13	Technical thermodynamics	EN	Z	45	30	15	3				30	15	3															
14	Basics of electronics and electrotechnics	EN	Z	60	30	30	3							30	30	3												
15	Basics of materials science	EN	E	150	75	75	7							75	75	7												
16	Introduction to biomaterials	EN	Z	60	30	30	3							30	30	3												
17	Materials testing methods 1	EN	E	75	30	45	4							30	45	4												
18	Mechanics with elements of biomechanics	EN	E	75	45	30	3							45	30	3												
19	Physico-chemistry of biological processes	EN	E	60	30	30	3							30	30	3												
20	Physics 2	EN	E	75	30	45	5							30	45	5												
21	Ceramic biomaterials	EN	E	60	30	30	5										30	30	5									
22	Corrosion and corrosion protection	EN	Z	45	20	25	3										20	25	3									
23	Engineering materials	EN	E	75	30	45	6										30	45	6									
24	Materials testing methods 2	EN	E	75	30	45	5										30	45	5									
25	Metallic biomaterials	EN	E	75	30	45	6										30	45	6									
26	Selected marketing issues	EN	E	30	15	15	3										15	15	3									
27	Databases on materials	EN	Z	60	30	30	4													30	30	4						
28	IT techniques in medicine	EN	Z	60	30	30	4													30	30	4						
29	Materials manufacturing technologies	EN	E	150	75	75	9													75	75	9						
30	Object oriented programming and computer simulations	EN	E	60	30	30	4													30	30	4						
31	Polymers for medicine	EN	E	60	30	30	5													30	30	5						

A

No.	Module	Lang.	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
32	Carbon and composite biomaterials	EN	E	60	30	30	5																30	30	5			
33	Diploma laboratory 1	EN	Z	30		30	3																	30	3			
34	Diploma seminar 1	EN	Z	15		15	2																	15	2			
35	Materials surface engineering	EN	E	45	30	15	3																30	15	3			
36	Nanomaterials in medicine	EN	E	75	30	45	6																30	45	6			
37	Principles of materials designing and selection	EN	E	60	30	30	5																30	30	5			
38	Biological and physiological aspects of biomaterials	EN	Z	45	30	15	2																			30	15	2
39	Diploma laboratory 2	EN	Z	60		60	5																				60	5
40	Diploma seminar 2	EN	Z	30		30	5																				30	5
	TOTAL A:			**2505**	**1145**	**1360**	**172**	**180**	**195**	**28**	**195**	**210**	**26**	**270**	**285**	**28**	**155**	**205**	**28**	**195**	**195**	**26**	**120**	**165**	**24**	**30**	**105**	**12**

B - INTERNSHIPS AND FIELD WORK

No.	Module	Lang.	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	EN	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	Lang.	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	Physical education	EN	Z	30		30	0		30																			
2	Physical education	EN	Z	30		30	0					30																
3	Foreign language 1	EN	Z	30		30	2		30	2																		
4	Foreign language 2	EN	Z	30		30	2					30	2															
5	Psychological aspects of working environment	EN	Z	30	15	15	2				15	15	2															
6	Foreign language 3	EN	Z	30		30	2								30	2												
7	Foreign language 4	EN	E	30		30	2											30	2									
8	Humanist module	EN	Z	30	30		3													30		3						
9	Intellectual property protection	EN	Z	15	15		1													15		1						
10	Diploma thesis preparation	EN	Z				15																					15
11	Social module	EN	Z	30	30		3																			30		3
	TOTAL C - OTHER REQUIREMENTS:			**285**	**90**	**195**	**32**	**0**	**60**	**2**	**15**	**75**	**4**	**0**	**30**	**2**	**0**	**30**	**2**	**45**	**0**	**4**	**0**	**0**	**0**	**30**	**0**	**18**
	TOTAL:			**2790**	**1235**	**1555**	**210**	**435**		**30**	**495**		**30**	**585**		**30**	**390**		**30**	**435**		**30**	**285**		**30**	**165**		**30**

TOTAL	**2790**

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)

1.	**Field of study**	**Materials Science and Engineering**
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2019/2020 (winter term), 2020/2021 (winter term), 2021/2022 (winter term), 2022/2023 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	Academic year for which the revised course structure applies	—

Specialization: Materials Science

A

No.	Module	Lang.	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	EN	Z	45	30	15	3	30	15	3																		
2	Applied mathematics 1	EN	E	60	30	30	5	30	30	5																		
3	Chemistry 1	EN	E	60	30	30	5	30	30	5																		
4	Computer science and IT	EN	Z	60	30	30	4	30	30	4																		
5	Designing and engineering graphics	EN	Z	45	15	30	4	15	30	4																		
6	Programming languages	EN	Z	60	30	30	3	30	30	3																		
7	Technical drawing	EN	Z	45	15	30	4	15	30	4																		
8	Chemistry 2	EN	E	60	30	30	4				30	30	4															
9	Crystallography	EN	E	60	30	30	5				30	30	5															
10	Applied mathematics 2	EN	E	60	30	30	5				30	30	5															
11	Mathematical-physical basis of materials science	EN	Z	75	30	45	3				30	45	3															
12	Physics 1	EN	E	105	45	60	6				45	60	6															
13	Technical thermodynamics	EN	Z	45	30	15	3				30	15	3															
14	Basics of electronics and electrotechnics	EN	E	60	30	30	4							30	30	4												
15	Basics of materials science	EN	E	150	75	75	7							75	75	7												
16	Materials economics	EN	Z	45	30	15	4							30	15	4												
17	Materials electrochemistry	EN	E	60	30	30	4							30	30	4												
18	Materials testing methods 1	EN	E	75	30	45	4							30	45	4												
19	Physics 2	EN	E	75	30	45	5							30	45	5												
20	Ceramics	EN	E	60	30	30	4										30	30	4									
21	Composites	EN	Z	45	25	20	3										25	20	3									
22	Corrosion and corrosion protection	EN	Z	45	20	25	3										20	25	3									
23	Materials testing methods 2	EN	E	75	30	45	5										30	45	5									
24	Metals and alloys	EN	E	60	30	30	4										30	30	4									
25	Numerical methods and algorithms	EN	E	45	15	30	3										15	30	3									
26	Polymers	EN	E	60	30	30	3										30	30	3									
27	Selected marketing issues	EN	E	30	15	15	3										15	15	3									
28	Biomaterials	EN	E	45	30	15	3													30	15	3						
29	Databases on materials	EN	Z	60	30	30	4													30	30	4						
30	Materials for electronics and electrotechnics	EN	Z	45	25	20	3													25	20	3						
31	Materials technologies and processing	EN	E	150	75	75	9													75	75	9						

A

No.	Module	Lang.	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
32	Mechanics and strength of materials	EN	E	75	45	30	3													45	30	3						
33	Object oriented programming and computer simulations	EN	E	60	30	30	4													30	30	4						
34	Diploma laboratory 1	EN	Z	30		30	3																	30	3			
35	Diploma seminar 1	EN	Z	15		15	2																	15	2			
36	Materials recycling	EN	Z	45	15	30	5																15	30	5			
37	Materials surface engineering	EN	E	45	30	15	3																30	15	3			
38	Nanomaterials and nanotechnologies	EN	E	60	30	30	4																30	30	4			
39	Principles of materials designing and selection	EN	E	60	30	30	5																30	30	5			
40	Specialised subject 1	EN	Z	30	30		2																30		2			
41	Diploma laboratory 2	EN	Z	60		60	5																				60	5
42	Diploma seminar 2	EN	Z	30		30	5																				30	5
43	Specialised subject 2	EN	Z	30	30		2																			30		2
	TOTAL A:			**2505**	**1195**	**1310**	**172**	**180**	**195**	**28**	**195**	**210**	**26**	**225**	**240**	**28**	**195**	**225**	**28**	**235**	**200**	**26**	**135**	**150**	**24**	**30**	**90**	**12**

B - INTERNSHIPS AND FIELD WORK

No.	Module	Lang.	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	EN	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	Lang.	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	Physical education	EN	Z	30		30	0		30																			
2	Physical education	EN	Z	30		30	0					30																
3	Foreign language 1	EN	Z	30		30	2		30	2																		
4	Foreign language 2	EN	Z	30		30	2					30	2															
5	Psychological aspects of working environment	EN	Z	30	15	15	2				15	15	2															
6	Foreign language 3	EN	Z	30		30	2								30	2												
7	Foreign language 4	EN	E	30		30	2											30	2									
8	Humanist module	EN	Z	30	30		3													30		3						
9	Intellectual property protection	EN	Z	15	15		1													15		1						
10	Diploma thesis preparation	EN	Z				15																					15
11	Social module	EN	Z	30	30		3																			30		3
	TOTAL C - OTHER REQUIREMENTS:			**285**	**90**	**195**	**32**	**0**	**60**	**2**	**15**	**75**	**4**	**0**	**30**	**2**	**0**	**30**	**2**	**45**	**0**	**4**	**0**	**0**	**0**	**30**	**0**	**18**
	TOTAL:			**2790**	**1285**	**1505**	**210**	**435**		**30**	**495**		**30**	**495**		**30**	**450**		**30**	**480**		**30**	**285**		**30**	**150**		**30**

TOTAL	**2790**

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)