

Programme curriculum
Programme: Materials Engineering 1st degree
Cycle from academic year 2020/2021

Predicted number of students starting the cycle
 Year I, semester I

10

COMPULSORY COURSES								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Mathematics	lecture	30	Exam	1	30	4	K_W01 , K_U13, K_K01
		class	30	Graded Pass	1	30		
2.	Physics	lecture	15	Graded Pass	1	15	3	K_W01, K_W09, K_U02, K_K02
		laboratory	30	Graded Pass	1	30		
3.	General chemistry	lecture	15	Exam	1	15	3	K_W01, K_U13, K_K01
		class	15	Graded Pass	1	15		
4.	Informatics	lecture	15	Graded Pass	1	15	3	K_W01 , K_U10, K_U13, K_K01
		class	15	Graded Pass	1	15		
5.	Engineering Graphics	lecture	15	Graded Pass	1	15	2	K_W05, K_U02, K_U04, K_U10, K_K03
		laboratory	15	Graded Pass	1	15		
6.	Fundamentals of Materials Science	lecture	15	Graded Pass	1	15	4	K_W03, K_W11, K_U02, K_U08, K_K02
		class	15	Graded Pass	1	15		
7.	Engineering calculations	lecture	15	Graded Pass	1	15	3	K_W01, K_U13, K_K01
		laboratory	15	Graded Pass	1	15		
8.	Intellectual Property Protection	lecture	15	Graded Pass	1	15	2	K_W13, K_U13, K_K04
9.	Ethics	lecture	30	Exam	1	30	2	<i>In accordance with the resolution of the KUL Senate of April 12, 2012. (714 / II11)</i>
10.	Entrepreneurship	workshops	30	Graded Pass	1	30	2	<i>In accordance with the resolution of the KUL Senate of February 22, 2018. (789 / II / 5)</i>
ELECTIVE COURSES								
1.	Physical education	class	30	Pass	1	30	0	<i>In accordance with the resolution of the KUL Senate of December 18, 2014. (747 / II / 5)</i>
2.	Modern foreign language	foreign language class	30	Graded Pass	1	30	2	<i>In accordance with the resolution of the KUL Senate of February 22, 2018. (789 / II / 6)</i>
390						30		

NUMBER OF TEACHING HOURS PER SEMESTER PER STUDENT:	390
ECTS POINTS PER SEMESTER PER STUDENT:	30

NUMBER OF TEACHING HOURS PER CYCLE PER STUDENT:	2520
ECTS POINTS PER CYCLE PER STUDENT:	210

*types of classes to be used: lecture, class, tutorial, workshop, laboratory, seminar, introductory seminar, foreign language class, practical placement, field work, study visit, diploma laboratory, translation class

** rules for choosing elective courses/specialisation courses have to be specified

*** each specialisation should be described in a separate table

Programme curriculum
Programme: Materials Engineering 1st degree
Cycle from academic year 2020/2021

Predicted number of students starting the cycle **10**
Year I, semester II

COMPULSORY COURSES									
No.	Course name	Type of class	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes	
1.	Mathematics	lecture	15	Exam	1	15	4	K_W01 , K_U13, K_K01	
		class	15	Graded Pass	1	15			
2.	Physics	lecture	30	Exam	1	30	5	K_W01, K_W09, K_U02, K_K02	
		laboratory	15	Graded Pass	1	15			
3.	Informatics	lecture	15	Graded Pass	1	15	3	K_W01 , K_U10, K_U13, K_K01	
		class	15	Graded Pass	1	15			
4.	Engineering Graphics	lecture	15	Graded Pass	1	15	2	K_W05, K_U02, K_U04, K_U10, K_K03	
		laboratory	15	Graded Pass	1	15			
5.	Fundamentals of Materials Science	lecture	15	Exam	1	15	4	K_W03, K_W11, K_U02, K_U08, K_K02	
		laboratory	15	Graded Pass	1	15			
6.	Engineering calculations	lecture	15	Graded Pass	1	15	4	K_W01, K_U13, K_K01	
		laboratory	15	Graded Pass	1	15			
7.	Inorganic Chemistry	lecture	30	Exam	1	30	4	K_W01, K_U08, K_K01	
		laboratory	30	Graded Pass	1	30			
8.	Electrical engineering and electronics	lecture	15	Graded Pass	1	15	2	K_W01, K_U08, K_K01	
		laboratory	15	Graded Pass	1	15			
ELECTIVE COURSES									
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes	
1.	Physical education	class	30	Pass	1	30	0	<i>In accordance with the resolution of the KUL Senate of December 18, 2014. (747 / II / 5)</i>	
2.	Modern foreign language	foreign language class	30	Graded Pass	1	30	2	<i>In accordance with the resolution of the KUL Senate of February 22, 2018. (789 / II / 6)</i>	
			345				30		

NUMBER OF TEACHING HOURS PER SEMESTER PER STUDENT:	345
ECTS POINTS PER SEMESTER PER STUDENT:	30

NUMBER OF TEACHING HOURS PER CYCLE PER STUDENT:	2520
ECTS POINTS PER CYCLE PER STUDENT:	210

*types of classes to be used: lecture, class, tutorial, workshop, laboratory, seminar, introductory seminar, foreign language class, practical placement, field work, study visit, diploma laboratory, translation class

** rules for choosing elective courses/specialisation courses have to be specified

*** each specialisation should be described in a separate table

Programme curriculum
Programme: Materials Engineering 1st degree
Cycle from academic year 2020/2021

Predicted number of students starting the cycle **10**
Year II, semester III

COMPULSORY COURSES									
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes	
1.	Mathematics	lectures	15	Exam	1	15	2	K_W01 , K_U13, K_K01	
		class	15	Graded Pass	1	15			
2.	Physics	lectures	15	Graded Pass	1	15	4	K_W01, K_W09, K_U02, K_K02	
		laboratory	30	Graded Pass	1	30			
3.	Technical mechanics and strength of materials	lectures	30	Exam	1	30	5	K_W02, K_W03, K_U03, K_U09, K_K01,	
		laboratory	30	Graded Pass	1	30			
4.	Metals and metallurgy, heat treatment	lectures	30	Graded Pass	1	30	3	K_W02, K_W03,	
5.	Materials Research and Tests	lectures	15	Graded Pass	1	15	1	K_W03,W_11, K_U03, K_U08, K_K01	
		laboratory	30	Graded Pass	1	30			
6.	Materials science	lectures	15	Graded Pass	1	15	2	K_W03, K_W11, K_U08, K_K04	
7.	Technical thermodynamics	lectures	30	Graded Pass	1	30	2	K_W01, K_W05,	
8.	Designing of machine elements	lectures	30	Graded Pass	1	30	3	K_W01, K_W02, K_W03, K_U02, K_U04, K_K02	
		laboratory	15	Graded Pass	1	15			
9.	Informatics	laboratory	30	Graded Pass	1	30	2	K_W01 , K_U10, K_U13, K_K01	
10.	Technical drawing, descriptive geometry and engineering graphics	laboratory	15	Graded Pass	1	15	1	K_U02, K_U04, K_K02	
ELECTIVE COURSES (one per semester)									
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes	
1.	Structural strength	lectures	30	Exam	1	30	3	K_W02, K_W03, K_U02, K_U04, K_K02	
		class	15	Graded Pass	1	15			
2.	Mechanical engineering	lectures	30	Exam	1	30	3	K_W02, K_W03, K_U02, K_U04, K_K02	
		class	15	Graded Pass	1	15			
ELECTIVE COURSES									
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes	
1.	Modern foreign language	foreign language class	30	Graded Pass	1	30	2	<i>In accordance with the resolution of the KUL Senate of February 22, 2018. (789 / II / 6)</i>	
			420				30		

NUMBER OF TEACHING HOURS PER SEMESTER PER STUDENT:	420
ECTS POINTS PER SEMESTER PER STUDENT:	30

NUMBER OF TEACHING HOURS PER CYCLE PER STUDENT:	2520
ECTS POINTS PER CYCLE PER STUDENT:	210

*types of classes to be used: lecture, class, tutorial, workshop, laboratory, seminar, introductory seminar, foreign language class, practical placement, field work, study visit, diploma laboratory, translation class

** rules for choosing elective courses/specialisation courses have to be specified

*** each specialisation should be described in a separate table

Programme curriculum
Programme: Materials Engineering 1st degree
Cycle from academic year 2020/2021

Predicted number of students starting the cycle
Year II, semester IV

10

COMPULSORY COURSES									
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes	
1.	Materials Research and Tests	lecture	15	Exam	1	15	2	K_W03,W_11, K_U03, K_U08, K_K01	
2.	Materials science	lecture	30	Exam	1	30	4	K_W03, K_W11, K_U08, K_K04	
		laboratory	30	Graded Pass	1	30			
3.	Logic	lecture	15	Exam	1	15	2	In accordance with the resolution of the KUL Senate of April 12, 2012. (714 / II / 13)	
		class	15	Graded Pass		15			
4.	Informatics	laboratory	30	Graded Pass	1	30	2	K_W01 , K_U10, K_U13, K_K01	
5	Technical drawing, descriptive geometry and engineering graphics	laboratory	15	Graded Pass	1	15	1	K_U02, K_U04, K_K02	
OBLIGATORY SPECIALIZATION COURSES - COMPOSITE MATERIALS									
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes	
1.	Organic chemistry	lecture	30	Exam	1	30	2	K_W01, K_W11	
2.	Functional materials	lecture	15	Graded Pass	1	15	3	K_W04,K_W10, K_U03, K_K03	
		laboratory	30	Graded Pass	1	30			
3.	Properties of composite materials	lecture	15	Exam	1	15	3	K_W04, K_W05, K_U08, K_U09,K_K04	
		laboratory	30	Graded Pass	1	30			
4.	Elements of material mechanics	lecture	15	Exam	1	15	2	K_W02, K_W03, K_W05,	
5.	Production of composite materials	lecture	15	Graded Pass	1	15	2	K_W04, K_W05, K_W10	
ELECTIVE COURSES (one per semester)									
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes	
1.	X-ray material testing methods	lecture	15	Exam	1	15	4	K_W01, K_W09, K_U08, K_U11	
		laboratory	30	Graded Pass	1	30			
2.	Materials testing using infrared and Raman spectroscopy	lecture	15	Exam	1	15	4	K_W01, K_W09, K_U08, K_U11	
		laboratory	30	Graded Pass	1	30			
ELECTIVE COURSES									
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes	
1.	Modern foreign language	foreign language class	30	Graded Pass		30	2	In accordance with the resolution of the KUL Senate of February 22, 2018. (789 / II / 6)	
				Exam					1
			375						30

NUMBER OF TEACHING HOURS PER SEMESTER PER STUDENT:	375
ECTS POINTS PER SEMESTER PER STUDENT:	30

NUMBER OF TEACHING HOURS PER CYCLE PER STUDENT:	2520
ECTS POINTS PER CYCLE PER STUDENT:	210

*types of classes to be used: lecture, class, tutorial, workshop, laboratory, seminar, introductory seminar, foreign language class, practical placement, field work, study visit, diploma laboratory, translation class

** rules for choosing elective courses/specialisation courses have to be specified

*** each specialisation should be described in a separate table

Programme curriculum
Programme: Materials Engineering 1st degree
Cycle from academic year 2020/2021

Predicted number of students starting the cycle 10
 Year III, semester V

COMPULSORY COURSES								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Information technology	lecture	15	Exam	1	15	2	K_W01 , K_U04,K_U10, K_U13, K_K04
		laboratory	15	Graded Pass	1	15		
2.	Material design	lecture	15	Graded Pass	1	15	2	K_W04, K_W14, K_U04, K_K01
		laboratory	15	Graded Pass	1	15		
3.	Management systems	lecture	15	Exam	1	15	3	K_W12, K_W14, K_U12, K_K02
		tutorial	30	Graded Pass	1	30		
OBLIGATORY SPECIALIZATION COURSES - COMPOSITE MATERIALS								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Surface chemistry	lecture	15	Graded Pass	1	15	3	K_W06, K_W07, K_W9, K_U11, K_K01
		laboratory	30	Graded Pass	1	30		
2.	Metal alloys	lecture	30	Graded Pass	1	30	4	K_W03, K_U08, K_U09, K_K03
		laboratory	30	Graded Pass	1	30		
3.	Rules and methods of combining materials	lecture	15	Graded Pass	1	15	3	K_W04, K_W05, K_U08, K_K01
		laboratory	30	Graded Pass	1	30		
4.	Analysis of composite and multiphase materials	lecture	15	Graded Pass	1	15	3	K_W05, K_W11, K_U09, K_K03
		laboratory	30	Graded Pass	1	30		
ELECTIVE SUBJECTS (one seminar)								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Engineering seminar	seminar	30	Pass	2	60	2	K_W11, K_W14, K_U01, K_U05, K_U06,
ELECTIVE COURSES (one in a semester for 4 ECTS credits)								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Electrochemical coatings	lecture	30	Graded Pass	1	30	4	K_W06, K_W07
2.	Spectroscopy	lecture	30	Graded Pass	1	30	4	K_W01, K_W05
ELECTIVE COURSES (two in a semester)								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Crystallography of heterogeneous substances	lecture	30	Graded Pass	1	30	2	K_W08, K_W09, K_U08, K_K04
2.	Crystallography of biomaterials	lecture	30	Graded Pass	1	30	2	K_W08, K_W09, K_U08, K_K04
3.	Material recycling	lecture	30	Graded Pass	1	30	2	K_W04, K_W14,

420

30

NUMBER OF TEACHING HOURS PER SEMESTER PER STUDENT:	420
ECTS POINTS PER SEMESTER PER STUDENT:	30

NUMBER OF TEACHING HOURS PER CYCLE PER STUDENT:	2520
ECTS POINTS PER CYCLE PER STUDENT:	210

*types of classes to be used: lecture, class, tutorial, workshop, laboratory, seminar, introductory seminar, foreign language class, practical placement, field work, study visit, diploma laboratory, translation class

** rules for choosing elective courses/specialisation courses have to be specified

*** each specialisation should be described in a separate table

Programme curriculum
 Programme: Materials Engineering 1st degree
 Cycle from academic year 2020/2021

Predicted number of students starting the cycle 10
 Year III, semester VI

COMPULSORY COURSES								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	History of Philosophy	lecture	45	Exam	1	45	3	In accordance with the resolution of the KUL Senate of April 12, 2012. (714 / II / 10)
2.	Material design	lecture laboratory	15 30	Graded Pass Graded Pass	1 1	15 30	3	K_W04, K_W05, K_U09, K_K01
OBLIGATORY SPECIALIZATION COURSES - COMPOSITE MATERIALS								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Surface chemistry	lecture	15	Exam	1	15	2	K_W06, K_W07, K_W9, K_U11, K_K01
2.	Chemistry and phase physics	lecture tutorial	15 30	Exam Graded Pass	1 1	15 30	3	K_W09, K_U07, K_K02
3.	Rules and methods of combining materials	lecture	15	Exam	1	15	2	K_W04, K_W05, K_U08, K_K01
4.	Analysis of composite and multiphase materials	lecture laboratory	15 30	Exam Graded Pass	1 1	15 30	4	K_W05, K_W11, K_U09, K_K03
ELECTIVE SUBJECTS (one seminar)								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Engineering seminar	seminar	30	Pass	2	60	2	K_W11, K_W14, K_U01, K_U05, K_U06,
ELECTIVE COURSES for 2 ECTS credits (one per semester)								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Instrumental methods in material research	lecture	30	Graded Pass	1	30	2	K_W05, K_W11
2.	Corrosion and aging of materials	lecture	30	Graded Pass	1	30	2	K_W03, K_W07,
ELECTIVE COURSES for 3 ECTS credits (one per semester)								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Material market	lecture tutorial	30 30	Exam Graded Pass	1 1	30 30	3	K_W12, K_W13, K_W14, K_U06, K_U07, K_U12, K_K01
2.	Economics of materials	lecture tutorial	30 30	Exam Graded Pass	1 1	30 30	3	K_W12, K_W13, K_W14, K_U06, K_U07, K_U12, K_K01
ELECTIVE COURSES for 6 ECTS credits (one per semester)								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Crystallography of heterogeneous substances	lecture laboratory	15 30	Exam Graded Pass	1 1	15 30	6	K_W08, K_W09, K_U08, K_K04
2.	Crystallography of biomaterials	lecture laboratory	15 30	Exam Graded Pass	1 1	15 30	6	K_W08, K_W09, K_U08, K_K04

375

30

NUMBER OF TEACHING HOURS PER SEMESTER PER STUDENT:	375
ECTS POINTS PER SEMESTER PER STUDENT	30

NUMBER OF TEACHING HOURS PER CYCLE PER STUDENT:	2520
ECTS POINTS PER CYCLE PER STUDENT	210

*types of classes to be used: lecture, class, tutorial, workshop, laboratory, seminar, introductory seminar, foreign language class, practical placement, field work, study visit, diploma laboratory, translation class

** rules for choosing elective courses/specialisation courses have to be specified

*** each specialisation should be described in a separate table

Programme curriculum
Programme: Materials Engineering 1st degree
Cycle from academic year 2020/2021

Predicted number of students starting the cycl 10
Year IV, semester VII

COMPULSORY COURSES								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Methods of producing materials	lecture	30	Exam	1	30	3	K_W04, K_W06, K_W10, K_U09, K_K02
		laboratory	30	Graded Pass	1	30		
2.	Materials destruction methods	lecture	15	Exam	1	15	1	K_W07, K_W09,
ELECTIVE COURSES								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1.	Engineering seminar	seminar	30	Pass	2	60	2	K_W11, K_W14, K_U01, K_U05, K_U06,
2.	Engineering studio	engineering lab	60	Graded Pass	2	120	2	K_W11, K_U01, K_U05, K_U06, K_K01
3.	Preparation of engineering thesis	thesis					15	
4.	Practice	practice	120	Pass	1	120	4	K_W12, K_U05, K_U06, K_U08, K_U13, K_K02, K_K04,
ELECTIVE COURSES (one per semester)								
No.	Course name	Type of class*	Number of teaching hours	Form of assessment	Number of groups	Total hours	ECTS Points	Reference to programme learning outcomes
1	Magnetic materials	lecture	30	Graded Pass	1	30	3	K_W04, K_W07,
2	Optical materials	lecture	30	Graded Pass	1	30	3	K_W01, K_W04,

195

30

NUMBER OF TEACHING HOURS PER SEMESTER PER STUDENT:	195
ECTS POINTS PER SEMESTER PER STUD	30

NUMBER OF TEACHING HOURS PER CYCLE PER STUDENT:	2520
ECTS POINTS PER CYCLE PER STUDENT	210

*types of classes to be used: lecture, class, tutorial, workshop, laboratory, seminar, introductory seminar, foreign language class, practical placement, field work, study visit, diploma laboratory, translation class

** rules for choosing elective courses/specialisation courses have to be specified

*** each specialisation should be described in a separate table