

Study Programme 2015-2016

Materials Science

Semester 5

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 5.1 Mathematics - Computer Science							96	7	
Mathematics	22		26			48	48	3,5	611110
Computing	16		16		16	48	48	3,5	611120
Unit 5.2 Chemistry – Thermodynamics							122	10	
Materials Chemistry	8					8	8		611132
Macromolecular Chemistry	20		20	20		60	60	5,5	611210
Thermodynamics 1	18		10			28	28	2,25	611230
Structure of Matter	14		12			26	26	2,25	611240
Unit 5.3 Structure and Properties of Matter							104	8	
Static Mechanics	10					10	10		611131
Introduction to Cristallography	10		10			20	20	2	611310
Matter Physics	16		16			32	32	2	611320
Introduction to Elasticity	12		10			22	22	2	611330
Point Defects	10		10			20	20	2	611340
Unit 5.4 Soft Skills and Sport							32	2	
Career Planning			10			10	10	1,25	611430
Sport					22	22	22	0,75	611440
Unit 5.5 Languages							46	3	
English			26			26	26	2	611411
Second Language									
-> German			20			20	20	1	611413
-> Spanish			20			20	20	1	611414
-> French			20			20	10	1	611415
Remedial English (TOEIC test)			14			14	14	0	611510
Total :							400	30	

Lect. : Lecture
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Note :

According to the timetable,
the personal work of the student for all the Units of the semester
is between 10 and 20 hours every week.

Study Programme 2015-2016

Materials Science

Semester 6

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 6.1 Thermodynamics and Phase Transformations							84	6	
Thermodynamics 2	20		14		8	42	42	3	612110
Crystal Defects	10		10			20	20	1,5	612140
Electrochemical-Corrosion	12		10			22	22	1,5	612150
Unit 6.2 Structure and Properties of Matter							82	6	
Rheology	20		18			38	38	2,75	612270
Elasticity	12		12			24	24	1,75	612280
Crystallography	10		10			20	20	1,5	612290
Unit 6.3 Materials 1							119	9	
Semiconductor Physics	8		14	16	5	43	43	3,25	612310
Semiconductor devices	12		8			20	20	1,5	612320
Structure and Properties of Polymers	20		20	16		56	56	4,25	612330
Unit 6.4 Soft Skills							73	6	
Scientific and technical information			16			16	16	1	612410
Reverse Engineering Project					15	15	15	2,75	612430
Public Speaking			10			10	10	0,75	612510
Corporate Communication			10			10	10	0,75	612530
Sport					22	22	22	0,75	612540
Unit 6.5 Languages							42	3	
English			22			22	22	2	612511
Second Language									
-> German			20			20	20	1	612513
-> Spanish			20			20	20	1	612514
-> French			20			20	20	1	612515
Remedial English (TOEIC test)			18			18	18	0	612610
Industrial placement (4 weeks during the summer)									
Total :							400	30	

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Study Programme 2015-2016

Materials Science

Semester 7

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 7.1 Quality, Health, Safety and Environment							44	4	
Introduction to Quality	12		4			16	16	1	613120
Life Cycle Analysis	8		4			12	12	1	613130
Risk Analysis	4		4			8	8	1	613140
Metrology	4		4			8	8	1	613150
Unit 7.2 Metallurgy							124	10	
Applied metallurgy 1	20		14			34	34	2,5	613210
Shaping metals 1	10		6	20		36	36	3,25	613220
Physical Metallurgy	12		6			18	18	1,5	613240
Semiconductor materials 1	18		18			36	36	2,75	613330
Unit 7.3 Materials 2							130	9	
Properties of Polymers (Solid State)	24		16			40	40	2,5	613310
Polymer Rheology	14		4		4	22	22	1,75	613320
Materials Elasticity	14		14	20		48	48	3,5	613340
Nanomaterials	16			4		20	20	1,25	613350
Unit 7.4 Soft Skills							60	4	
Work placement debriefing	4		4			8	8	0,75	613420
Economics	12		6			18	18	1	613430
Management basics	10					10	10	0,75	613440
Marketing	12					12	12	0,75	613450
Project Management	12					12	12	0,75	613460
Unit 7.5 Languages							42	3	
English			22			22	22	2	613411
Second language									
-> German			20			20	20	1	613413
-> Spanish			20			20	20	1	613414
-> French			20			20	20	1	613415
Remedial English (TOEIC test)			18			18	18	0	613510
Total :							400	30	

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Study Programme 2015-2016

Materials Science

Semester 8

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 8.1 Materials 3							114	8	
Applied metallurgy 2	8		4			12	12	0,75	614110
Biomaterials	20				4	24	24	1,5	614120
Shaping Metals 2	8		4			12	12	1	614130
Mechanical Properties of Materials				10		10	10	0,75	614140
Finite Elements basics	2			12		14	14	1	614150
Characterisation techniques	10				16	26	26	2	614160
Unit 8.2 Materials 4							114	8	
CAD introduction				16		16	16	1	614170
Ceramics	30		12			42	42	3	614210
Semiconductor materials 2	8			12		20	20	1,5	614220
Organic Matrix Composite Materials	26		10			36	36	2,5	614250
Unit 8.3 Soft Skills							30	2	
Management	14					14	14		614420
Corporate strategy			16			16	16	2	614430
Unit 8.4 Languages							42	3	
English			22			22	22	2	614411
Second Language									
-> German			20			20	20	1	614413
-> Spanish			20			20	20	1	614414
-> French			20			20	20	1	614415
Remedial English (TOEIC test)			18			18	18	0	614451
Unit 8.5 Assistant Engineer placement : (starting in April – from 6 to 13 weeks)							116	10	
Assistant Engineer placement							116	10	614510
Total :							400	30	

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Study Programme 2015-2016

Materials Science

Semester 9

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 9.1 Scientific courses							128	10	
Choice & Reliability of Materials and Process	12		2		12	26	26	2	615110
Finite Elements	6			20	8	34	34	2	615120
Computer-aided Design and computer-aided Manufacturing				8	16	24	24	2	615150
Multimaterials	4					4	4		615220
Metals Fatigue	10					10	10	1	615230
Surface Treatments	4					4	4	1	615240
Non Destructive Controls of Materials	6			4		10	10	1	615262
Life Cycle Analysis & Recycling	4			4		8	8	1	615270
Lectures	8					8	8		615280
Unit 9.2 Soft Skills							56	3	
Corporate social responsibility	4					4	4		615250
Ergonomy	8					8	8	0,5	615261
Labour Law	12					12	12	0,75	615410
Preparing for a Job Interview	8					8	8		615420
Team Management and Change Management	24					24	24	1,75	615440
Unit 9.3 Final Year Project							114	11	
Final Year Project					114	114	114	11	615651
Unit 9.4 Languages							52	3	
English			20			20	20	1,75	615611
Second Language			Unit						
-> German			20			20	20	0,75	615613
-> Spanish			20			20	20	0,75	615614
-> French			20			20	20	0,75	615615
Remedial English			12			12	12	0,5	615620
Unit 9.5 Cross-Disciplinary modules - 2 courses to be chosen from the following list *:							50	3	
-> Life Cycle Assessment (LCA) and eco-design			24			24		1.5	925510
-> Intercultural Management	24					24	24	1.5	925511
-> Approaches of social and interdependent economy	12		12			24	24	1.5	925513
-> Entrepreneurship	24					24	24	1.5	925516
-> Co-Design in Polytech Lille's fablab			24				24	1.5	925517
-> High Tech innovation Management and Business Intelligence	24						24	1.5	925523
-> Discover the Internet of things	12			12		24	24	1.5	925530
-> Industrial Waste Management in France	24						24	1.5	925540
-> Renewable Energy	16			8		24	24	1.5	925571
-> Mobilizing the collective intelligence: a key resource in the team work	24					24	24	1.5	925580
-> User-centered design (basic concepts of ergonomics)	12			12		24	24	1.5	925590
-> Introduction to Digital Art Technologies	24					24	24	1.5	925592
-> Economy, Geopolitics and international Geostrategy	24					24	24	1.5	925595
-> Fundamentals of project engineering and commercial Negotiation	24					24	24	1.5	925598
-> Production Management	16			8		24	24	1.5	925599
Total :							350	30	

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* The list of cross-disciplinary modules may change from one academic year to the other.

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Materials Science

Semester 10

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 10.1 Final Year Project (part 2)							100	6	
Final Year Project (part 2)					85	85	70	7	616310
Enterprising Challenge					35	35	30	3	616320
Unit 10.2 Engineer Placement : (starting in February – from 5 to 6 months)							300	20	
Engineer Placement									616910
Total :							400	30	

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the personal work of the student for all the Units of the semester is between 10 and 20 hours every week.