

Academic Programme 2016-2017

Materials Science

Semester 5

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
5.1 Mathematics - Computer Science							96	7	
Mathematics	22		26			48	48	3,5	611110
Computing	16		16		16	48	48	3,5	611120
5.2 Chemistry - Thermodynamics							96	7	
Materials Chemistry	8					8	8		611205
Macromolecular Chemistry	20		20	20		60	60	5	611210
Thermodynamics 1	18		10			28	28	2	611230
5.3 Structure and Properties of Matter							130	11	
Cristallography 1	10		10			20	20	2	611310
Matter Physics	20		12	20		52	52	3	611320
Solids physics	16		16			32	32		611330
Structure of Matter	14		12			26	26		611340
5.4 Soft Skills and Sport							32	2	
Career Planning			10			10	10	1,25	611430
Sport					22	22	22	0,75	611440
5.5 Languages (English a second language)							44	3	
Remedial English			14			14			611510
English			24			24	24	2	611511
Second Language									
-> German			20			20		1	611413
-> Spanish			20			20		1	611414
-> French			20			20		1	611415
Total :							398	30	

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Note :
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Materials Science

Semester 6

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
6.1 Thermodynamics and Phase Transformations							104	8	
Thermodynamics 2	20		14		8	42	42	3	612110
Crystal defects	20		20			40	40	3	612140
Electrochemical-Corrosion	12		10			22	22	2	612150
6.2 Structure and Properties of Matter 2							104	8	
Structure and Physical properties of polymers	20		20	16		56	56	4	612210
Crystallography 2	10		10		8	28	28	2	612220
Thermal, magnetic and optical properties of materials	10		10			20	20		612230
6.3 Semi-conductor materials							63	5	
Semiconductor Physics	8		14	21		43	43	3,25	612310
Semiconductor devices	12		8			20	20	1,5	612320
6.4 Soft Skills							88	6	
Scientific and technical information			16			16	16	1	612410
Reverse Engineering Project					20	20	20	2,75	612420
Public Speaking			10			10	10	0,75	612430
Corporate Communication			10			10	10	0,75	612440
Sport					22	22	22	0,75	612450
Conferences	10					10	10		612460
6.5 Languages (English a second language)							44	3	
English			24			24	24	2	612511
Second Language									
-> German			20			20		1	612513
-> Spanish			20			20		1	612514
-> French			20			20		1	612515
Remedial English			18			18			612610
Total :							403	30	

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Materials Science

Semester 7

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
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
7.2 Metallurgy							124	10	
Applied metallurgy 1	20		14			34	34	2,5	613210
Shaping metals 1	10		6	20		36	36	3,5	613220
Physical Metallurgy	12		6			18	18	1,5	613240
Semiconductor materials 1	18		18			36	36	2,5	613250
7.3 Materials							130	9	
Properties of Polymers (Solid State)	24		16			40	40	2,5	613310
Polymer Rheology	14		4		4	22	22	2	613320
Nanomaterials	16			4		20	20	1,5	613350
Elasticity and toughness of materials	14		14	20		48	48	3	613360
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
7.5 Languages (English + a second language)							42	3	
Remedial English			18			18			613510
English			22			22	22	2	613511
Second language									
-> German			20			20		1	613413
-> Spanish			20			20		1	613414
-> French			20			20		1	613415
Total :							400	30	

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Semester 8

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
8.1 Materials 3							100	7	
Applied metallurgy 2	8		4			12	12	1	614110
biomaterials	20				4	24	24	1,5	614120
Shaping Metals 2	8		4			12	12	0,5	614130
Finite Elements basics	2			12		14	14	1	614150
Characterisation techniques	10				28	38	38	3	614160
8.2 Materials 4							114	8	
CAD introduction				16		16	16	1,5	614200
Ceramics	30		12			42	42	2,5	614210
Semiconductor materials 2	8			12		20	20	1,5	614220
Organic Matrix Composite Materials	26		10			36	36	2,5	614250
8.3 Soft Skills							30	2	
Management	14					14	14		614310
Corporate strategy			16			16	16	2	614320
8.4 Languages (English a second language)							42	3	
English			22			22	22	2	614411
Second Language									
-> German			20			20		1	614413
-> Spanish			20			20		1	614414
-> French			20			20		1	614415
Remedial English			18			18			614451
8.5 Assistant Engineer placement : From 10 to 13 weeks from mid-April							116	10	
Assistant Engineer placement							116	10	614510
Total :							402	30	

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Materials Science
Semester 9

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
9.1 Scientific courses							129	10	
Non destructive tests	4			6		10	10	1	615112
Metals fatigue	10					10	10	1	615113
<i>Option 1 : Conception, control and durability of materials</i>							109	8	615290
-> Choice & Reliability of Materials and Process	12		2		12	26	26	2	615110
-> Conferences	9					9	9		615114
-> Finite Elements	6			20	8	34	34	2,5	615120
-> Computer-Aided Design and Computer-Aided Manufacturing				8	16	24	24	2,5	615150
-> Multimaterials	4					4	4		615220
-> Life Cycle Analysis & Recycling	4			4		8	8	0,5	615270
-> Surface treatments	4					4	4	0,5	615271
<i>Option 2 : Advanced metallurgy for welding</i>							109	8	615300
-> Metals and welding damage	23					23	23	2	615301
-> Ferrous alloys	12					12	12	1	615302
-> Non Ferrous alloys	9					9	9	0,5	615303
-> Welding processes and equipment	27					27	27	2	615304
-> Pratical works				38		38	38	2,5	615305
9.2 Soft Skills							60	3	
Labour Law	12					12	12	0,75	615210
Preparing for a job interview	12					12	12		615220
Team Management and Change Management	24					24	24	1,75	615240
Corporate social responsibility			4			4	4		615250
Ergonomy	8					8	8	0,5	615261
9.3 Final Year Project							114	11	
Final Year Project					114	114	114	11	615651
9.4 Languages (English + a second language)							52	3	
English			20			20	20	1,75	615611
Second Language									
-> German			20			20		0,75	615613
-> Spanish			20			20		0,75	615614
-> French			20			20		0,75	615615
Remedial English			12			12	12	0,5	615620
Unit 9.5 Transversal courses							48	3	
-> Life Cycle Assessment (LCA) and eco-design			24			24		1,5	925510
-> intercultural management	24					24		1,5	925511
-> co-design in Polytech Lille's fablab			24			24		1,5	925517
-> Marketing B to B	12		12			24		1,5	925518
-> High tech innovation management and Business intelligence	24					24		1,5	925523
-> Discover the internet of things	12			12		24		1,5	925530
-> Industrial waste management in France	24					24		1,5	925540
-> Renewable energy	16			8		24		1,5	925571
-> Mobilizing the collective intelligence: a key ressource In the team work	24					24		1,5	925580
-> Introduction to digital art technologies	24					24		1,5	925592
-> Economy, geopolitics and international geostrategy	24					24		1,5	925595
-> Fundamentals of project engineering and commercial Negotiation	24					24		1,5	925598
-> Production management	16			8		24		1,5	925599
-> Symbolic computation and introduction to scientific documents typesetting							24	1,5	925619
Total :							403	30	

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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)					70	70	70	4	616310
Enterprising Challenge					30	30	30	2	616320
10.1 Engineer Placement : 5 months starting in March							300	24	
Engineer Placement							300	24	616910
Total :							400	30	

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