

Academic Programme 2015-2016

Measurement Systems and Applied Business

Semester 5

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 5.1 Mathematics, Information Technology (IT) and Measurement issues							120	9	
Mathematics	22		26			48	48	3,5	411110
Information Technology	14		16			30	30	2	411120
Information Technology (Practical)				18		18	18	1,5	411130
Experimental data measurement basics	12		12			24	24	2	411140
Unit 5.2 Electronics and Systems							74	7	
Fundamentals of electronic circuits	4		6			10	10	0,75	411210
Electronics (Practical)				16		16	16	1,5	411220
Amplifiers, Linear circuits analysis and Closed loop systems	12		12			24	24	2,25	411230
Fundamentals of modulation and demodulation	12		12			24	24	2,5	411240
Unit 5.3 Physics and Chemistry							65	5	
Chemistry - Basics	4		6			10	10	0,75	411310
Chemistry ((Practical)				24		24	24	1,5	411320
Geometrical Optics	4		6			10	10	0,75	411330
Interaction of radiation with matter	11		10			21	21	2	411340
Unit 5.4 Business, Marketing and Human Sciences							96	6	
Sport			22			22	22	0,75	411410
Marketing	12					12	12	0,75	411420
Communication tools fundamentals			10			10	10	0,75	411430
Building your own career plans			10			10	10	0,75	411440
Bases in Management	10					10	10	0,75	411450
Efficient report writing			14			14	14	1	411460
Economical environment	12		6			18	18	1,25	411470
Unit 5. Languages							46	3	
English			26			26	26	2	411510
Second language									
-> German			20			20	20	1	411521
-> Spanish			20			20	20	1	411522
-> French			20			20	20	1	411523
Remedial English (TOEIC test)			14			14	14	0	411530
Total :							401	30	

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Note :
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the personal work of the student for all the Units of the semester
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Semester 6

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 6.1 Optics & Quantitative Sciences							118	9	
Fundamental Optics	12		12			24	24	2	412110
Optics (Practical)				20		20	20	1,25	412120
Bioanalysis	12		12			24	24	2	412130
Renewable energies using modern Chemistry	12		8			20	20	1,5	412140
Chromatography	8		6			14	14	1,25	412150
Practicals in Chemistry (Labs)				16		16	16	1	412160
Unit 6.2 Analog and Digital Electronics							116	9	
Digital electronics - Introduction		10	18			28	28	2	412210
Analog to Digital / Digital analog conversion			24			24	24	2	412220
Semi-conductor fundamental devices	14		14			28	28	2,25	412230
Signal Filtering - Fundamentals	12		12			24	24	2	412240
Practicals in Analog Electronics (Labs)				12		12	12	0,75	412250
Unit 6.3 Marketing and Business Issues							126	9	
Enhanced communication								2,25	
Sales techniques	24					24	24	2	412320
Sport			22			22	22	0,75	412330
Business Management	16		16			32	32	2	412340
B to B Marketing (Business to Business)	12		12			24	24	2	412350
Unit 6.4 Languages							42	3	
English			22			22	22	2	412420
Second language									
-> German			20			20	20	1	412431
-> Spanish			20			20	20	1	412432
-> French			20			20	20	1	412433
Remedial English (TOEIC test)			18			18	18		412440
Industrial placement (4 weeks during the summer)									
Total :							402	30	

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Semester 7

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 7.1 Languages							42	3	
English			22			22	22	2	413110
Second language									
-> German			20			20	20	1	413121
-> Spanish			20			20	20	1	413122
-> French			20			20	20	1	413123
Remedial English (TOEIC test)			18			18	18		413130
Unit 7.2 Steering Management , Negotiation							46	3	
Feedback on third year Placement			10			10	10	0,75	413210
Management and changes in organizations	12		12			24	24	1,5	413220
Project Management	12					12	12	0,75	413230
Unit 7.3 Business Engineering							106	8	
Writing an efficient data-sheet for Marketing	10					10	10	1	413310
Database fundamentals	4			8		12	12	1	413320
Knowing yourself and understanding your colleagues			14			14	14	1,25	413330
Intellectual Property and Patents						6	6	0,5	413340
How to do a business report?	20					20	20	1,5	413350
Specific and complex business issues	14					14	14	1,25	413360
Business in English			30			30	30	1,5	413370
Unit 7.4 Scientific project and Molecular Spectroscopy							116	9	
Spectroscopic devices and systems	24					24	12	2	413410
Spectroscopic devices and systems (Practical)				12		12		1	413420
Photonic-based spectroscopy	16		8			24	24	2	413430
Nuclear Magnetic Resonance Spectroscopy (NMRS)	16		8			24	24	2	413440
Introduction to scientific research	2		4		26	32	32	2	413450
Unit 7.5 Instrumentation and Digital Electronics							92	7	
Digital electronics using processors	14		14			28	28	2	413510
Practicals in Digital electronics and Measurements (Labs)				40		40	40	2,5	413520
Introduction to graphical programming software (Labview)				8		8	8	0,5	413530
From semi-conductor single devices to circuits	12		4			16	16	2	413540
Total :							402	30	

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Measurement Systems and Applied Business

Semester 8

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 8.1 Languages							42	3	
English			22			22	22	2	414110
Second language									
-> German			20			20	20	1	414121
-> Spanish			20			20	20	1	414122
-> French			20			20	20	1	414123
Remedial English (TOEIC test)			18			18	18	0	414130
Unit 8.2 Lasers, Photonics							66	6	
Instrumental Optics and Lasers	12		12			24	24	2	414210
Digital communications and Fiber-optic systems	20		6			26	26	2	414220
Practicals in Photonics and Lasers (Labs)				16		16	16	2	414230
Unit 8.3 Measurement, Data and Image signal Processing							78	6	
Measuring and analysing noisy signals	12		10			22	22	2	414310
Digital signals for data and image processing	14		6			20	20	2	414320
Practicals in Telecom, Spectroscopy and Advanced measurements (Labs)				36		36	36	2	414330
Unit 8.4 Placement							100	7	
Fourth-year placement (Assistant Engineer)			100			100	100	7	414410
Unit 8.5 Project and applied Marketing							116	8	
International Business issues	12					12	12	1	414510
Financial Management	10		10			20	20	1,5	414520
E-marketing - Web marketing	6				14	20	20	1,5	414530
Marketing project and technology watch					64	64	64	4	414540
Total :							402	30	

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Semester 9

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 9.1 Languages							52	3	
Second language									
-> German			20			20	20	0,75	415111
-> Spanish			20			20	20	0,75	415112
-> French			20			20	20	0,75	415113
English			20			20	20	1,75	415120
Professional Language			12			12	12	0,5	415130
Unit 9.2 Key professional Issues							106	8	
Fundamentals of strategic development	16					16	16	1	415210
Behavioural analysis	16					16	16	1	415220
Introduction: Labour Law	12					12	12	1	415230
Advanced financial issues	20					20	20	1,5	415240
Quality, Health and Safety	10					10	10	1	415250
Case study and Business plans			24			24	24	1,5	415260
Feedback on internship as Engineering-assistant					4	4	4	0,5	415270
Social and Environmental Responsibility	4					4	4	0,5	415280
Unit 9.3 International Business							76	6	
International Management	24					24	24	1,5	415310
Quantitative Marketing	12		12			24	24	1,5	415320
Cross-cultural differences			10			10	10	1	415330
Sales and international issues	10					10	10	1	415340
Succeed in your job interview	8					8	8	1	415350
Unit 9.4 Telecom and I.T. Networks, Imaging							120	10	
Telecom and I.T. networks conferences	4					4	4		415410
Wireless Communication - Electromagnetic compatibility	12					12	12	1	415420
Architecture of wired and IP networks	26					26	26	2	415430
Microwaves and High frequency measurements	24					24	24	2	415440
Surface Imaging	24					24	24	2,5	415450
Advanced Spectroscopy, Bioimaging	26					26	26	2,5	415460
Imaging Conferences	4					4	4		415470
Unit 9.5 Cross-Disciplinary Modules							48	3	
Cross-Disciplinary modules - 2 courses to be chosen from the following list : *			48			48	48	3	925500
-> Life Cycle Assessment (LCA) and Eco-Design	8			16		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
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* The list of cross-disciplinary modules may change from one academic year to the other.

Academic Programme 2015-2016

Business Engineering and Measurement systems

Semester 10

Course	Lec.	LwT	Tut.	Prac.	Project	Course Hours	Student Hours	ECTS Credits	Code
Unit 10.1 Final Project							150	10	
final year project (at school or in a company)					150	150	150	10	416110
Unit 10.2 Final Placement							250	20	
Engineer Placement					250	250	250	20	416210
Total :							400	30	

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