



Academic Programme 2018-2019
Electrical and Computer Engineering

Semester 5

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Unit 5-1 Mathematics Computing 1						122	10	
Analysis 1		50				50	4	311110
Structured Programming	12		14	16	6	48	4	311130
Database Systems	12			6	6	24	2	311140
Unit 5.2 Embedded Systems 1						180	13	
Components and Electric Circuits	20		20	24		64	4,5	311210
Digital Logic and Microprocessor Design	20		20	12		52	4	311220
Automatics : Continuous Linear System Analysis	12		8	8		28	2	311230
Electrical Engineering	10		8	9	9	36	2,5	311240
Unit 5.3 Soft Skills 1						60	4	
Career Planning			10			10	0,75	311310
Communication and Project Management	10					10	0,75	311320
Economics	12		6			18	1,5	311330
Sport			22			22	1	311340
Unit 5.4 Languages						46	3	
English			26			26	2	311410
<i>Second language</i>								
-> Spanish			20			20	1	311421
-> German			20			20	1	311422
-> French			20			20	1	311423
Remedial English			14			14		311430
Total :						408	30	

Lect. : Lecture

LwT : Lecture with Tutorial

Tut. : Tutorial

Prac. : Practical

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.



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Semester 6

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Unit 6.1 Mathematics and Computing 2						150	11	
Analysis 2 and Probabilities		40				40	3,25	312110
Numerical Analysis		24		18		42	3,25	312120
Advanced Programming	22		14	22	10	68	4,75	312130
Unit 6.2 Embedded Systems 2						169	13	
Microprocessor and its Application	10		10	16	12	48	3,5	312220
Automatic Control	12		12	16	12	52	4	312230
Power Electronics	10		8	9	9	36	3	312240
Project					24	24	1,75	312250
Electronics 2		9				9	0,75	312260
Unit 6.3 Soft Skills 2						42	3	
Communication Skills and Team Management			10			10	1	312310
Corporate Communication			10			10	1	312320
Sport			22			22	1	312330
Unit 6.4 Languages						42	3	
English			22			22	2	312410
Second language								
-> Spanish			20			20	1	312421
-> German			20			20	1	312422
-> French			20			20	1	312423
Remedial English			18			18		312430
Placement (minimum one month) during the summer							0	
Total :						403	30	

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Semester 7

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Unit 7-1 Scientific courses						98	8	
Signal Processing		20		12	8	40	3	313110
Programmable Digital Circuits		16		12	16	44	3,75	313120
Optimisation		14				14	1,25	313130
Unit 7-2 Embedded Systems 3						101	8	
Communication Networks	18			25		43	3,5	313210
System	8	4		16	8	36	2,5	313220
Real Time	10			12		22	2	313230
Unit 7-3 Electronics-Electrical Engineering-Automatics						103	7	
Electronics	18		14	16		48	3,5	313310
Sensors and discrete event driven systems	14		6	8	2	30	2	313320
Speed Variation	8		8	9		25	1,5	313330
Unit 7-4 Soft Skills 3						52	4	
Work placement debriefing					10	10	1	313410
Management	2		4		24	30	2	313430
Marketing	12					12	1	313440
Unit 7-5 Languages						42	3	
English			22			22	2	313510
Second language								
-> Spanish			20			20	1	313521
-> German			20			20	1	313522
-> French			20			20	1	313523
Remedial English			18			18		313530
Total :						396	30	

Lect. : Lecture

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 This course can be offered in English

Academic Programme 2018-2019
Electrical and Computer Engineering

Semester 8

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Unit 8-1 Project						50	4	
Initiation to research					6	6	4	314120
Unit 8-2 Assistant Engineer Placement						70	7	
Assistant Engineer Placement: starting in May (6-13 weeks)					70	70	7	314210
Unit 8-3 Fundamentals						120	8	
<i>Track 1: Smart Communication Systems</i>						120	8	314310
-> Transmission Support	20		10	16		46	3,5	314313
-> Computer Theory		14		8		22	1,5	314314
-> Systems and Networking	16				24	40	3	314315
<i>Track 2: Autonomous Systems</i>						123	8	314320
-> Automotive Embedded Systems and Energy Management	16		12	15		43	3	314321
-> Transfer and Storage of Energy for Autonomous Systems	12		12	8		32	2	314322
-> Automated Systems Engineering	18			18		48	3	314323
Unit 8-4 Specialized courses						120	8	
<i>Track 1 : Smart Communication Systems</i>						122	8	314410
-> Software Design	14			10		24	1,5	314412
-> Multimedia Transmission	36		4	32		72	3,75	314413
-> Advanced Programmable Digital Circuits	14			24		38	2,75	314414
<i>Track 2 : Autonomous Systems</i>						120	8	314420
-> Basics of Mechatronics				22		22	1,25	314421
-> Tools for Design of Autonomous Systems	18			16		34	3	314422
-> Robotics	12		6	32	4	54	3,75	314423
Unit 8-5 Languages						42	3	
English			22			22	2	314510
Second language								
-> Spanish			20			20	1	314521
-> German			20			20	1	314522
-> French			20			20	1	314523
Remedial English			18			18		314530
Total :						402	30	

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Academic Programme 2018-2019

Electrical and Computer Engineering

Semester 8 common courses with mechanical engineering

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Unit 8-2 Placement						70	7	
Assistant Engineer Placement: starting in May (6-13 weeks)					70	70	7	314210
Unit 8-5 Languages						42	3	
English			22			22	2	314510
Second language								
-> Spanish			20				1	314521
-> German			20				1	314522
-> French			20				1	314523
Remedial English			18					314530
Unit M8-1 Mechatronics 1						100	7	
Mecatronic Project					100	100	7	314710
Unit M8.3/4 Mechatronics 2						176	13	
Mechatronic Systems Engineering			20			20	1,5	314810
Technology State-of-the-art			50			50	3,5	314820
Power Transmission	18		10			28	2	314830
Modeling and Simulation of Multiphysics System	20		14	12		46	3,5	314840
Sensors and Actuators: technology, dimensioning and conditioning	10		10	12		32	2,5	314850
Total :						388	30	

The Mechatronics track is not offered to non degree seeking exchange students.

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Academic Programme 2018-2019
Electrical and Computer Engineering

Semester 9

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Unit 9-1 Final year Project 1						70	6	
Final-year project					70	70	6	315110
Unit 9-2 Specialized courses						176	14	
<i>Track 1 : Smart Communication Systems</i>						176	14	315210
-> Embedded Systems Design and Smart Systems Integration	18		10	16		44	3,5	315211
-> Systems Sizing and Radio Frequency Identification (RFID)	18		10	16		44	3,5	315212
-> Software Design	12			10		22	1,75	315213
-> Advanced Networking Protocols	4			18		22	1,75	315214
Human-Machine Interface and Gestural Interface	10			12		22	1,75	315215
<i>Track 2 : Autonomous Systems</i>	22					22	1,75	315216
Autonomous Embedded Systems						176	14	315220
-> Industrial applications	40					40	3,75	315221
-> Safe systems	16		16	16		48	3,75	315222
-> Design and Eco-Design of Electrical Systems	12		12			24	2	315224
-> Grid Integration of Renewable Energy Sources	8		4	8		20	1,5	315225
-> Energy Management of Hybrid Electrical Vehicles	12		12			24	2	315226
-> Image processing	10			10		20	1	315227
Unit 9-3 Soft Skills 4						116	7	
Team and Change Management			24			24	1,5	315310
Quality, Health, Safety and Environment	10					10	0,75	315320
Labour Law	12					12	0,75	315330
Project Management and Corporate Social Responsibility	4				10	14	1	315340
How to succeed in a job interview					8	8	0	315350
Cross-Disciplinary modules								
2 courses to be chosen from the following list :*								
-> Eco-Design			24			24	1,5	925510
-> Intercultural Management			24			24	1,5	925511
-> International Corporate Strategy Simulation			24			24	1,5	925518
-> High Tech Innovation Management and Business Intelligence			24			24	1,5	925523
-> Internet of Things			24			24	1,5	925530
-> Management of Industrial Waste			24			24	1,5	925540
-> Renewable Energy			24			24	1,5	925571
-> Collective Intelligence			24			24	1,5	925580
Economics, Geopolitics and International Geostrategy			24			24	1,5	925595
-> The Basics of Business Engineering and Trade Negotiation			24			24	1,5	925598
-> Production Management			24			24	1,5	925599

-> Symbolic Computation and Introduction to Scientific Documents with Latex			24			24	1,5	925619
-> Art & Science			24			24	1,5	925639
-> Agent-based Modelling and Simulation			24			24	1,5	925649
-> Stress Management			24			24	1,5	925669
-> Marketing Business to Business			24			24	1,5	925679
-> The Engineer and Design			24			24	1,5	925689
-> Improve your relational efficiency through drama			24			24	1,5	925699
Unit 9-4 Languages 5						52	3	
English			20			20	1,75	315410
Second language								
-> Spanish			20			20	0,75	315421
-> German			20			20	0,75	315422
-> French			20			210	0,75	315423
Cross-Cultural Communication			12			12	0,5	315430
Total :						414	30	

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* The list of cross-disciplinary courses available

 This course can be offered in English




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Academic Programme 2018-2019

Electrical and Computer Engineering

Semester 10

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Final-Year Project 2						100	6	
Final-year project					100	100	6	316110
Engineer Placement : 5 or 6 months starting in February						300	24	
Engineering Placement					300	300	24	316210
Total :						400	30	

 The project can be supervised in English

The project can also be carried out during a full semester for a workload of 30 ECTS credits