

Academic Programme 2016-2017

Department of Electrical and Computer Engineering

Semester 5

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

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.

Academic Programme 2016-2017

Department of Electrical and Computer Engineering

Semester 6

| Course | Lec. | LwT | Tut. | Prac. | Project | Course Hours | Student Hours | ECTS Credits | Code |
|---|------|-----|------|-------|---------|--------------|---------------|--------------|--------|
| Unit 6.1 Mathematics and Computing 2 | | | | | | | 150 | 11 | |
| Analysis 2 and Probabilities | | 40 | | | | 40 | 40 | 3,25 | 312110 |
| Numerical Analysis | | 24 | | 18 | | 42 | 42 | 3,25 | 312120 |
| Advanced Programming | 22 | | 14 | 22 | 10 | 68 | 68 | 4,75 | 312130 |
| Unit 6.2 Embedded Systems 2 | | | | | | | 169 | 13 | |
| Microprocessor Design | | | | 9 | | 9 | 9 | 0,75 | 312210 |
| Microprocessor and its Application | 10 | | 10 | 16 | 12 | 48 | 48 | 3,5 | 312220 |
| Automatic Control | 12 | | 12 | 16 | 12 | 52 | 52 | 4 | 312230 |
| Power Electronics | 10 | | 8 | 9 | 9 | 36 | 36 | 3 | 312240 |
| Projects | | | | | 24 | 24 | 24 | 1,75 | 312250 |
| Unit 6.3 Soft Skills 2 | | | | | | | 42 | 3 | |
| Communication Skills and Team Management | | | 10 | | | 10 | 10 | 1 | 312310 |
| Corporate Communication | | | 10 | | | 10 | 10 | 1 | 312320 |
| Sport | | | 22 | | | 22 | 22 | 1 | 312330 |
| Unit 6.4 Languages | | | | | | | 42 | 3 | |
| English | | | 22 | | | 22 | 22 | 2 | 312410 |
| -> Spanish | | | 20 | | | 20 | | 1 | 312421 |
| -> German | | | 20 | | | 20 | | 1 | 312422 |
| -> French | | | 20 | | | 20 | | 1 | 312423 |
| Remedial English | | | 18 | | | 18 | | | 312430 |
| Total : | | | | | | | 403 | 30 | |

Lect. : Lecture

LwT : Lecture with Tutorial

Tut. : Tutorial

Prac. : Practical

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.

Academic Programme 2016-2017

Department of Electrical and Computer Engineering

Semester 7

| Course | Lec. | LwT | Tut. | Prac. | Project | Course Hours | Student Hours | ECTS Credits | Code |
|--|------|-----|------|-------|---------|--------------|---------------|--------------|--------|
| Unit 7-1 Scientific courses | | | | | | | 104 | 8 | |
| Signal Processing | | 20 | | 12 | 8 | 40 | 40 | 3 | 313110 |
| Programmable Digital Circuits | 10 | 10 | 2 | 12 | 16 | 50 | 50 | 3,75 | 313120 |
| Optimisation | | 14 | | | | 14 | 14 | 1,25 | 313130 |
| Unit 7-2 Embedded Systems 3 | | | | | | | 101 | 8 | |
| Communication Networks | 18 | | | 25 | | 43 | 43 | 3,5 | 313210 |
| System | 8 | 4 | | 16 | 8 | 36 | 36 | 2,5 | 313220 |
| Real Time | 10 | | | 12 | | 22 | 22 | 2 | 313230 |
| Unit 7-3 EEA Electronic-Electrical Engineering-Automatics | | | | | | | 103 | 7 | |
| Electronic | 18 | | 14 | 16 | | 48 | 48 | 3,5 | 313310 |
| Sensors and discrete event driven systems | 14 | | 6 | 8 | 2 | 30 | 30 | 2 | 313320 |
| Speed Variation | 8 | | 8 | 9 | | 25 | 25 | 1,5 | 313330 |
| Unit 7-4 Soft Skills 3 | | | | | | | 56 | 4 | |
| Work placement debriefing | | | | | 10 | 10 | 10 | 1 | 313410 |
| Project Management | 4 | | | | | 4 | 4 | | 313420 |
| Management | 2 | | 4 | | 24 | 30 | 30 | 2 | 313430 |
| Marketing | 12 | | | | | 12 | 12 | 1 | 313440 |
| Unit 7-5 Languages 3 | | | | | | | 42 | 3 | |
| English | | | 22 | | | 22 | 22 | 2 | 313510 |
| -> Spanish | | | 20 | | | 20 | | 1 | 313521 |
| -> German | | | 20 | | | 20 | | 1 | 313522 |
| -> French | | | 20 | | | 20 | | 1 | 313523 |
| Remedial English | | | 18 | | | 18 | | | 313530 |
| Total : | | | | | | | 406 | 30 | |

Lect. : Lecture
LwT : Lecture with Tutorial
Tut. : Tutorial
Prac. : Practical

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.



Academic Programme 2016-2017

Department of Electrical and Computer Engineering

Semester 8

| Course | Lec. | LwT | Tut. | Prac. | Project | Course Hours | Student Hours | ECTS Credits | Code |
|---|------|-----|------|-------|---------|--------------|---------------|--------------|--------|
| Unit 8-1 Project and Industrial Placement 1 | | | | | | | 50 | 4 | |
| Project for planned autonomy | | | | | 44 | 44 | 44 | 3,4 | 314110 |
| Initiation to research | | | | | 6 | 6 | 6 | 0,6 | 314120 |
| | | | | | | | | 7 | |
| Assistant Engineer Placement: starting in May (10-13 weeks) | | | | | | 70 | 70 | 7 | 314210 |
| Unit 8-2 Fundamental | | | | | | | 120 | 8 | |
| Smart Communication Systems (Option 1) | | | | | | | | | |
| -> Multimedia Transmission | 26 | | | 24 | | 50 | 50 | 3,25 | 314311 |
| -> Advanced Programmable Digital Circuits | 8 | | | 12 | 4 | 24 | 24 | 1,5 | 314312 |
| -> Transmission Support | 20 | | 10 | 16 | | 46 | 46 | 3,25 | 314313 |
| Autonomous Systems (Option 2) | | | | | | | | | |
| -> Automotive Embedded Systems and Energy Management | 16 | | 12 | 15 | | 43 | 43 | 3 | 314321 |
| -> Transfer and Storage of Energy for Autonomous Systems | 12 | | 12 | 8 | | 32 | 32 | 2 | 314322 |
| -> Automated Systems Engineering | 18 | | 12 | 18 | | 48 | 48 | 3 | 314323 |
| Unit 8-3 Specialized courses | | | | | | | 120 | 8 | |
| Smart Communication Systems (Option 1) | | | | | | | | | |
| -> Encoding | 14 | | 8 | 14 | | 36 | 36 | 2,25 | 314410 |
| -> Software Design | 14 | | | 10 | | 24 | 24 | 1,5 | 314411 |
| -> Computer Fundamentals | | 14 | | 8 | | 22 | 22 | 1,5 | 314413 |
| -> Systems and Networking | 16 | | | | 24 | 40 | 40 | 2,75 | 314414 |
| Autonomous Systems section (Option 2) | | | | | | | | | |
| -> Basics of Mechatronics | 10 | | 12 | | | 22 | 22 | 1,25 | 314421 |
| -> Tools for Design of Autonomous Systems | 22 | | | 22 | | 44 | 44 | 3 | 314422 |
| -> Robotics | 12 | | 6 | 32 | 4 | 54 | 54 | 3,75 | 314423 |
| Unit 8-4 Languages 4 | | | | | | | 42 | 3 | |
| English | | | 22 | | | 22 | 22 | 2 | 314510 |
| -> Spanish | | | 20 | | | 20 | | 1 | 314521 |
| -> German | | | 20 | | | 20 | | 1 | 314522 |
| -> French | | | 20 | | | 20 | | 1 | 314523 |
| Remedial English | | | 18 | | | 18 | | | 314530 |
| Total : | | | | | | | 332 | 30 | |

Lect. : Lecture
LwT : Lecture with Tutorial
Tut. : Tutorial
Prac. : Practical

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.

Academic Programme 2016-2017
Department of Electrical and Computer Engineering
Semester 9

| Course | Lec. | LWT | Tut. | Prac. | Project | Course Hours | Student Hours | ECTS Credits | Code |
|--|------|-----|------|-------|---------|--------------|---------------|--------------|--------|
| Unit 9-1 Final year project 1 | | | | | | | 70 | 6 | |
| Final year project | | | | | 70 | 70 | 70 | 6 | 315110 |
| Unit 9-2 Specialized courses | | | | | | | 176 | 14 | |
| <i>Smart Communication Systems</i> (Option 1) | | | | | | | 176 | 14 | 315210 |
| -> Design and Smart System Integration | 18 | | 10 | 16 | | 44 | 44 | 3,5 | 315211 |
| -> Systems Sizing and Radio Frequency Identification (RFID) | 18 | | 10 | 16 | | 44 | 44 | 3,5 | 315212 |
| -> Software Design | 12 | | | 10 | | 22 | 22 | 1,75 | 315213 |
| -> Advanced Networking Protocols | 4 | | | 18 | | 22 | 22 | 1,75 | 315214 |
| -> Human-Machine Interface and Gestural Interface | 10 | | | 12 | | 22 | 22 | 1,75 | 315215 |
| -> System and Network Administration | 22 | | | | | 22 | 22 | 1,75 | 315216 |
| <i>Autonomous Systems</i> (Option 2) | | | | | | | 176 | 14 | 315220 |
| -> Industrial applications | 48 | | | | | 48 | 48 | 3,75 | 315221 |
| -> Safe systems | 16 | | 16 | 16 | | 48 | 48 | 3,75 | 315222 |
| -> Basics of Mechatronics | 12 | | | | | 12 | 12 | 1 | 315223 |
| -> Design and Eco-Design of Electrical Systems | 12 | | 12 | | | 24 | 24 | 2 | 315224 |
| -> Grid Integration of Renewable Energy Sources | 8 | | 4 | 8 | | 20 | 20 | 1,5 | 315225 |
| -> Energy Management of Hybrid Electrical Vehicles | 12 | | 12 | | | 24 | 24 | 2 | 315226 |
| Unit 9-3 Soft Skills 4 | | | | | | | 116 | 7 | |
| Management | | | 24 | | | 24 | 24 | 1,5 | 315310 |
| Quality | 10 | | | | | 10 | 10 | 0,75 | 315320 |
| Labour Law | 12 | | | | | 12 | 12 | 0,75 | 315330 |
| Project Management and Corporate Social Responsibilities | 4 | | | | 10 | 14 | 14 | 1 | 315340 |
| Preparing for a job interview | | | | | 8 | 8 | 8 | | 315350 |
| Cross-Disciplinary modules : | | | | | | | 50 | 3 | 925500 |
| <i>2 courses to be chosen from the following list :</i> | | | | | | | | | |
| -> Life Cycle Assessment (LCA) and eco-design | | | 24 | | | 24 | 24 | 1,5 | 925510 |
| -> intercultural management | 24 | | | | | 24 | 24 | 1,5 | 925511 |
| -> Co-design in Polytech Lille's fablab | | | 24 | | | 24 | 24 | 1,5 | 925517 |
| -> Marketing B to B | 12 | | 12 | | | 24 | 24 | 1,5 | 925518 |
| -> high tech innovation management and business intelligence | 24 | | | | | 24 | 24 | 1,5 | 925523 |
| -> Discover the internet of things | 12 | | | 12 | | 24 | 24 | 1,5 | 925530 |
| -> Industrial waste management in France | 24 | | | | | 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 |
| -> 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 |
| -> Symbolic computation and introduction to scientific Documents typesetting | | | | | | | 24 | 1,5 | 925619 |
| Unit 9-4 Languages 5 | | | | | | | 52 | 3 | |
| English | | | 20 | | | 20 | 20 | 1,75 | 315410 |
| -> Spanish | | | 20 | | | 20 | | 0,75 | 315421 |
| -> German | | | 20 | | | 20 | | 0,75 | 315422 |
| -> French | | | 20 | | | 20 | | 0,75 | 315423 |
| Language project | | | 12 | | | 12 | 12 | 0,5 | 315430 |
| Total : | | | | | | | 414 | 30 | |

Lect. : Lecture
 LWT : Lecture with Tutorial
 Tut. : Tutorial
 Prac. : Practical

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.



Academic Programme 2016-2017

Department of Electrical and Computer Engineering

Semester 10

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

Lect. : Lecture

LwT : Lecture with Tutorial

Tut. : Tutorial

Prac. : Practical

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.