

# UNIVERSITY OF ALCALÁ

## SUPERIOR POLYTECHNIC SCHOOL (EPS)

ERASMUS CODE: E ALCAL-H01

### MAIN INTERNATIONAL RELATIONS OFFICE

General Email: [internacional@uah.es](mailto:internacional@uah.es)

Socrates/Erasmus programme email: [erasmus.incoming@uah.es](mailto:erasmus.incoming@uah.es)

**Institutional:** Mr Miguel Angel SOTELO ([miguel.sotelo@uah.es](mailto:miguel.sotelo@uah.es)) Vicerrector

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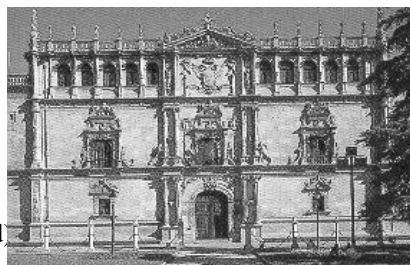
Phone: +34-91-8854169 / 4088 Fax: +34-91-8854130

**Postal Address:** Universidad de Alcalá

Vicerrectorado de Relaciones Internacionales

Plaza San Diego, s/n, E-28801 Alcalá de Henares (Madrid)

Main International Relations Office, named “Vicerrectorate of International Relations”, is located in the **Rectorate building**:



### COORDINATOR OF POLYTECHNIC SCHOOL

**Departmental:** Mr David Fernández LLORCA ([david.fernandezl@uah.es](mailto:david.fernandezl@uah.es))

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**Postal Address:** Edificio Politécnico. Campus Universitario. 28871-Alcalá de Henares. Madrid-Spain

**Auxiliary Staff:** Ms Alba VIÑALLONGA ([politecnico.ori@uah.es](mailto:politecnico.ori@uah.es)) Phone: +34-91-8854843 Fax: +34-91-8855103

**International Office in the Campus (Postal Address):** Facultad de Ciencias Ambientales. Oficina Erasmus.

Campus Universitario. 28871-Alcalá de Henares. Madrid-Spain

### STUDIES IN THE POLYTECHNIC SCHOOL

#### Engineering Section:

- [Degree in Telecommunication Technologies Engineering \(240 ECTS\)](#)
- [Degree in Electronics Communications Engineering \(240 ECTS\) EURACE](#)
- [Degree in Telematics Engineering \(240 ECTS\) EURACE](#)
- [Degree in Telecommunications Systems Engineering \(240 ECTS\) EURACE](#)
- [Degree in Industrial Electronics & Automation Engineering \(240 ECTS\) EURACE](#)
- [Master “Telecommunication Engineering” \(90-120 ECTS\)](#)
- [Master “Industrial Engineering” \(90-120 ECTS\)](#)
- [Master “Science and Technology from the Space” \(60 ECTS\)](#)

#### Computer Science Section:

- [Degree in Computer Science Engineering \(240 ECTS\)](#)
- [Degree in Information Systems \(240 ECTS\)](#)
- [Degree in Computer Engineering \(240 ECTS\)](#)
- [Master “Software Engineering for the Web” \(60 ECTS\)](#)
- [Master “Direction of Computing Projects” \(60 ECTS\)”](#)

#### International Programs:

- [International Program on Computer Engineering & Economics \(winter, 30 ECTS\)](#)
- [International Program on Computer Science Electronic Communications & Accounting \(winter, 30 ECTS\)](#)
- [International Program on Computer Science \(summer, 30 ECTS\)](#)
- <http://www.uah.es/export/sites/uah/es/internacional/.galleries/Galeria-de-desgargas-de-Internacional/InternationalProgram-Telecommunications-Economy-2C.pdf>

#### Polytechnic Building:



18.000 m<sup>2</sup>, 4 floors, 28 classrooms, 3 PC rooms, 50 laboratories, library, 256 teacher offices, book shop, self-service cafeteria-restaurant, assembly hall, conference room.

**4.500 students, 320 teachers.**

### RESEARCH AREAS FOR THESIS AND END OF DEGREE PROJECTS

- **Department of Automatic:** Free Software. Operative Systems. Real Time Systems. Embedded systems. Systems for satellites. Parallel systems. Domotics. Communication Networks. Task Planning. Security in Internet. Autonomous vehicles. Traffic Technologies.
- **Department of Electronics:** Autonomous wheel chairs for handicapped persons. Man/machine interfaces based in voice, eye movements, head movements or mouth blow. Mobile robotics: systems for navigation, location and mapping. Service robotics (assistance robots for old people, guide robots, assistants for surgery, etc). Design of sensor

systems based in ultrasounds, infrared, cameras and optical fiber. Systems of contactless measurements. Security systems for trains. Domotics and intelligent buildings. Systems for driving assistance: warnings for lane come-out, cruise control, pedestrians detection, traffic signals detection, driver sleepiness detection, automatic systems of driver recognition. Tele-medicine and tele-assistance systems (Wifi/Bluetooth/GSM). Power electronic systems. Classic and modern control systems. Design of restructurable electronic systems. Bioengineering, robotic surgery with minimum invasion and virtual reality. Architectures of parallel processing.

- **Department of Signal Theory and Communications:** Detection: Radar, fire watching, intruder watching. Coding (audio and image). Planning in mobile communications. Digital communications with ADSL. Card reading. Contamination detection (air and water). Design of antennas and microwave systems.
- **High Technology and Homologation Centre:** Electromagnetic compatibility trials (up to 4GHz): emission (radiated and guided), immunity (radiated and guided). Electronic calibration: DC and AC low frequency, AC high frequency. Time and frequency. Pressure.
- **Department of Computer Science:** E-learning. Accessibility. Semantic networks applied to industry. Software validation – Metrics. Joining operators – Fuzzy logic and control.
- **Department of Mathematics:** Geometric modelling and design aided by Computer: offsetting processes and blending processes in the design of geometric objects, treatment of approximate geometric data in modelling problems, problems of curve and surface intersection. Digital cartography from aerial and satellite images: extraction of cartographic entities of spacial images by semiautomatic methods, update of cartographic information systems, thematic cartography with multispectrum information. Computational geometry: geometric algorithms for geographic information systems, geometric algorithms in graphic informatics. Algorithms for algebraic equations: Numeric analysis, interpolation in several variables, linear numeric algebra. Symbolic calculus: resolution of algebraic equation systems. Mathematic and informatic models in Ecology and resource management: forest models. Fishing models.

### **INTERESTING WEBS**

Superior Polytechnic School: Engineering studies: [www.uah.es/politecnica](http://www.uah.es/politecnica) Computer Science: [www.etsii.uah.es](http://www.etsii.uah.es)  
Alcalá University: [www.uah.es](http://www.uah.es) Web “Internacional”: [https://portal.uah.es/portal/page/portal/portal\\_internacional/](https://portal.uah.es/portal/page/portal/portal_internacional/)  
Academic coordinators in each Faculty: <http://www.uah.es/internacionales/documentos/tabla13.pdf>  
Administrative staff of International Office: <http://www.uah.es/internacionales/directorio.shtm>  
Information for exchange students (in Spanish and English): [www.uah.es/internacionales/documentos/guia\\_ingles.pdf](http://www.uah.es/internacionales/documentos/guia_ingles.pdf)  
Exchange agreements with other universities: [www.uah.es/politecnica/estudiantes/erasmus/Lista-Universidades.pdf](http://www.uah.es/politecnica/estudiantes/erasmus/Lista-Universidades.pdf)  
Sports Centre: [www.uah.es/deportes/](http://www.uah.es/deportes/) Cultural Activities: [www.uah.es/cultura\\_deportes/](http://www.uah.es/cultura_deportes/)  
Maps of Alcalá city and Madrid: [www.ctm-madrid.es](http://www.ctm-madrid.es)

### **ACADEMIC COURSE: 2 Semesters, 14 weeks each**

**1<sup>st</sup> Semester:** From 2nd week September to December. **2<sup>nd</sup> Semester:** From 3rd week January to mid May.

Class Timetables: Web [www.uah.es/politecnica](http://www.uah.es/politecnica), menu “Estudiantes - Horarios”

Exams: 2 weeks in January, 2 weeks in May, 2 weeks in June (no classes in all these periods)

January for courses in 1<sup>st</sup> semester, second chance in June

May for courses in 2<sup>nd</sup> semester, second chance in June

Exams Calendar: Web [www.uah.es/politecnica](http://www.uah.es/politecnica), menu “Estudiantes - Fechas de Exámenes”

Holidays: 2 weeks in Christmas, 1 week in Easter, 1’5 months in summer (July-August).

### **DETAILED CONTENTS OF SUBJECTS (IN SPANISH LANGUAGE)**

Enter the web [www.uah.es/politecnica](http://www.uah.es/politecnica), click on menu “Estudiantes - Asignaturas”, select the desired degree and course, then click on "Información Académica".

If the information of the current academic year is not available, you may find it in the previous year, selecting the degree and then click in "Asignaturas Curso Anterior".

**The list of these courses taught in ENGLISH LANGUAGE is highlighted in RED COLOUR in our tables below.**

### **BEFORE GOING TO ALCALÁ**

The home University should communicate the list of selected candidates to the Vicerrectorate of International Relations in UAH before **April 30<sup>th</sup>** for whole year students or before **September 30<sup>th</sup>** for 2<sup>nd</sup> semester students. Then, this office will send to selected students all necessary information and application forms. However, information and forms are available in this web of Alcalá University:

[https://portal.uah.es/portal/page/portal/portal\\_internacional/internacionalizacion/programas\\_intercambio](https://portal.uah.es/portal/page/portal/portal_internacional/internacionalizacion/programas_intercambio)

**Deadlines to send the application documents: June 30<sup>th</sup> for whole year or 1<sup>st</sup> semester (winter semester), November**

## **15<sup>th</sup> for 2<sup>nd</sup> semester (spring semester)**

Then reserve accommodation in University Residences via internet (as soon as possible, limited places), or in rented flats or lodgings by telephone.

### **WHEN ARRIVING**

#### **1<sup>st</sup> : Registration**

Go to the Vicerrectorate of International Relations, open Monday to Friday from 9:00 to 14:00.

Dates for this registration:     **First days of September for whole year or 1<sup>st</sup> semester stay period**  
  **Mid January for 2<sup>nd</sup> semester stay period**

#### **2<sup>nd</sup> : Accommodation**

Go to University Residence or to rented flats, to finish rental contract. If no accommodation is reserved, ask for personal help in the Vicerrectorate office to find an accommodation, meanwhile you can stay few days in a Hostel (see list below).

#### **3<sup>rd</sup> : Academic Enrolment**

Contact with International/Erasmus Coordinator in the Polytechnic Faculty and present the Learning Agreement (courses to attend in Alcalá). Students will receive from the Coordinator information about courses, timetables, examination periods, etc. Then the student will go to the Erasmus Office in the campus and will present there the final list of courses to attend. The matriculation will be processed there.

### **BEFORE COMING BACK**

Go to the International Office of the Campus of UAH and:

- Ask for the Transcript of Records (certificate of results), which will be delivered to the student when all exam results are available in the web of Alcalá University. Only duly matriculated courses will be included in such Transcript.
- Ask for the final Attendance Certificate, which must be presented when returning back to home university.

### **ACCOMMODATION**

#### **Three University Residences:**

- **C.R.U.S.A.** ([infor@cru-sa.es](mailto:infor@cru-sa.es))   Web: [www.crusa.es](http://www.crusa.es)   Phone: +34-91-8809895 / 8809995   Fax: +34-91-8825964  
Postal Address: Ctra. Madrid-Barcelona, Km. 33'6, 28805 – Alcalá de Henares (Madrid)  
10 minutes walk from Polytechnic Faculty, reservation via internet, limited places.
- **R.E.S.A.** ([alcala@resa.es](mailto:alcala@resa.es)   [rralcala@resa.es](mailto:rralcala@resa.es))   Web: [www.resa.es/eng/residencias/giner\\_de\\_los\\_rios](http://www.resa.es/eng/residencias/giner_de_los_rios)  
Phone: +34 91 1818100   Address: Ctra. Madrid-Barcelona, Km. 33'6, 28805 – Alcalá de Henares (Madrid)  
10 minutes walk from Polytechnic Faculty, reservation via internet, limited places.
- **Cardenal Cisneros** ([residencia.universitaria@cardenalcisneros.com](mailto:residencia.universitaria@cardenalcisneros.com))   Web: [www.rucc.es](http://www.rucc.es)  
Phone: +34 91 8829826   Fax: +34 91 1413318  
Postal Address: Avda. Jesuitas, s/n, 28805 – Alcalá de Henares (Madrid)  
25 minutes walk from Polytechnic Faculty, reservation via internet, limited places.

**For short visits of academic staff:** Residencia San Ildefonso ([sanildefonso@crusa.es](mailto:sanildefonso@crusa.es))

Web: [www.crusa.es/ildefonso/eildefonso.htm](http://www.crusa.es/ildefonso/eildefonso.htm)   Phone: +34 91 8788146   Fax: +34 91 878 80 63

**Shared Apartments:** The University Information Centre gives a list of flats, bedsits or in-family accommodation, and gives personal help (ask for it in [ciu@uah.es](mailto:ciu@uah.es)). Prices from 150-250 Euros/month

**Hostals for provisional accommodation:** [www.eps.uah.es/Internacional/HostalsAlcala.pdf](http://www.eps.uah.es/Internacional/HostalsAlcala.pdf)

### **SPANISH LANGUAGE COURSE**

By UAH Language School "Alcalingua": [www.alcalingua.com](http://www.alcalingua.com)

Different prices. Intensive courses in different periods, including summer.

### **MEALS**

Cheap University restaurant service in the Polytechnic Building and other Faculty buildings. Average price 6 Euros with the student ID card. Free entrance. Only breakfast and dinner. Optional 10-Meal bonus for 5'5 Euros/meal

### **OTHER FACULTIES IN ALCALÁ UNIVERSITY**

Business and Economics Faculty, Philosophy and Letters Faculty, Biology Faculty, Environmental Sciences Faculty, Medicine Faculty, Pharmacy Faculty, Laws Faculty, Documentation Faculty, Chemistry Faculty.  
Tourism University School, Nursery and Physiotherapy School, Architecture and Geodesy School, Business Studies University School, Sports Sciences School, Pedagogy University School.

### **ADDITIONAL INFORMATION**

- The city of Alcalá de Henares is located 28 Km North-East from Madrid, 17 Km from Barajas airport.
- Vicerectorate of International Relations located in the city center (near Plaza Cervantes, the central square of the city).
- Polytechnic Building and University Residences located in the University Campus (3 Km away from the city center). Communications with city center by bus number 2 and 3.
- Most of the courses are taught in Spanish language. Final Project/Thesis can be offered to be developed using only English language to communicate with Tutor professors.
- **A group of subjects will be taught also in ENGLISH language. The list of these courses is highlighted in RED COLOUR in our tables below.**
- In the Polytechnic Faculty most exams are written, rarely oral ones. Dates and hours are fixed and published since the beginning of the academic year.
- Most courses are semestral, very few are annual.
- Optional Spanish "Tutor student", who will help during the first weeks in Alcalá.
- Grades are given on a scale from 0 to 10: 

	ECTS Grades
10 Matrícula de Honor (distinction, limited to 5%)	→ A+
9-10 Sobresaliente (outstanding)	→ A
7-8'5 Notable (good)	→ B, C
5-6'5 Aprobado (pass)	→ D, E
0-4'5 Suspenso (fail)	→ F
- There is a "welcome day" for exchange students in mid-October and mid-February, and a week of orientation activities in October and February.
- Approximate cost of matriculation fees: 1 Credit = 28 Euros. Matriculation is free for Erasmus students.
- Cost of living: 750 Euros/month →→→→→ 

250 Euros Accommodation
250 Euros Food
100 Euros Transport
150 Euros Others

# I. TELECOMMUNICATIONS AND ELECTRONICS STUDIES

## 1.- MASTER IN TELECOMMUNICATION ENGINEERING (Code M125)

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Subject	Lab	H	Ects	Subject	Lab	H	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>				<i>Year 1 – Semester 2 (2<sup>nd</sup>)</i>			
201842-ADVANCED DIGITAL ELECTRONIC SYSTEMS	X	3	5	201809-RADIOCOMMUNICATION AND RADIODETERMINATION SYSTEMS	X	4	6
201844-ELECTRONIC SUBSYSTEMS	X	3	5	201811-DIGITAL SIGNAL PROCESSING IN COMMUNICATIONS	X	2	3
201843-ELECTRONIC DESIGN	X	3	5	201814-PHOTONIC TECHNOLOGY	X	2	3
201841-CONMUTATION	X	3	5	201812-ELECTRONIC INSTRUMENTATION	X	4	6
201839-OPERATING SYSTEMS	X	3	5	201808-NETWORKS FOR CONTENTS DISTRIBUTION	X	3	4'5
201840-COMPUTERS ARCHITECTURE	X	3	5	201810-HIGH CAPACITY DIGITAL COMMUNICATIONS	X	3	4'5
201845-DIGITAL SIGNAL PROCESSING	X	3	5	201813-MICROELECTRONIC TECHNOLOGY	X	2	3
201847-DIGITAL COMMUNICATIONS	X	3	5				
201846-HIGH FREQUENCY TECHNOLOGIES	X	3	5				
<i>Year 2 - Semester 1 (3<sup>rd</sup>)</i>				<i>Year 2 – Semester 2 (4<sup>th</sup>)</i>			
201815-DESIGN OF NETWORKS AND SECURITY	X	3	4'5	<b>Optional Subjects, Speciality in TIC for Health and Accesibility:</b>			
201816-COMPUTATION INSIDE NETWORKS	X	3	4'5	201823-ACCESIBILITY AND DEPENDENCE	X	3	4'5
201817-WIRELESS NETWORKS	X	3	4'5	201824-BIOMEDICAL SIGNAL PROCESSING	X	3	4'5
201818-TELECOMMUNICATION SYSTEMS AND TECHNOLOGIES	X	3	4'5	201825-ASSISTANCE FOR INDEPENDENT LIFE TECHNOLOGIES	X	3	4'5
201819-DESIGN OF ELECTRONIC CIRCUITS FOR TELECOMMS.	X	4	6	201826-BIOMEDICAL ENGINEERING	X	3	4'5
201820-PROJECT MANAGEMENT	X	4	6	<b>Optional Subjects, Speciality in Aero-spatial and Defense Technologies:</b>			
				201827-SIGNAL PROCESSING TECHNIQUES IN INTELLIGENT ENVIRONMENTS	X	3	4'5
				201826-TELEDETECTION: TECHNOLOGIES AND APPLICATIONS	X	3	4'5
				201829-GUIDING OF NON-TRIPULATED VEHICLES	X	3	4'5
				201830-ENGINEERING IN AERO-SPATIAL SYSTEMS	X	3	4'5
				201831-SOFTWARE FOR AERO-SPATIAL APPLICATIONS	X	3	4'5
				201832-CIBER-SECURITY	X	3	4'5
				<b>Optional Subjects, Speciality in Intelligent Transport Systems:</b>			
				201833-GEOLOCALIZATION	X	3	4'5
				201834-ADVANCED SYSTEMS FOR DRIVING ASSISTANCE	X	3	4'5
				201835-INTELLIGENT SYSTEMS FOR TRAIN TRANSPORTS	X	3	4'5
				201836-TECHNOLOGIES FOR SECURITY IN STREETS	X	3	4'5
				201837-INTELLIGENT VEHICLES	X	3	4'5
				201838-END OF MASTER THESIS			12

**H** = Hours per week (including theory and laboratory)

**Ects** = European credits ECTS

## 2.- MASTER IN INDUSTRIAL ENGINEERING (Code M141)

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Subject	Lab	H	Ects	Subject	Lab	H	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>				<i>Year 1 – Semester 2 (2<sup>nd</sup>)</i>			
201994-ENTERPRISE ADMINISTRATION AND DIRECTION		3	4'5	201991-MACHINES DESIGN AND TEST		3	4'5
201986-FABRICATION AND PRODUCTION TECHNIQUES		3	4'5	201992-ENERGY ENGINEERING		3	4'5
201987-AUTOMATIZATION TECHNIQUES		3	4'5	201990-FLUID-THERMIC ENGINEERING		3	4'5
<b>Formation Complements:</b>				201997-INDUSTRIAL SYSTEMS I		3	4'5
201980-DIFFERENTIAL EQUATIONS AND NUMERICAL METHODS		3	4'5	201995-INDUSTRIAL ORGANIZATION		3	4'5
201984-MECHANICS OF STRUCTURES		3	4'5	201988-ELECTRONIC AND INSTRUMENTATION SYSTEMS		3	4'5
201983-FLUID MECHANICS IN INDUSTRIAL APPLICATIONS		3	4'5	201989-ELECTRIC TECHNOLOGY AND ENGINEERING		3	4'5
201979-INDUSTRIAL CHEMISTRY		3	4'5				
201982-ANALOG AND DIGITAL ELECTRONICS		3	4'5				
201981-ELECTROTECHNICS		3	4'5				
<i>Year 2 - Semester 1 (3<sup>rd</sup>)</i>				<i>Year 2 – Semester 2 (4<sup>th</sup>)</i>			
202000-INDUSTRIAL CONSTRUCTIONS AND URBAN PLANNING		3	4'5	<b>Optional Subjects, Speciality in Robotics and Perception:</b>		3	4'5
201996-DIRECTION OF INDUSTRIAL PROJECTS AND TECHNOLOGIC INNOVATION		4	6	202010-INTELLIGENR CONTROL IN TRANSPORT SYSTEMS		3	4'5
201999-TRANSPORT ENGINEERING		2	3	202009-ARTIFICIAL INTELLIGENCE IN AUTONOMOUS CONTROL SYSTEMS		3	4'5
201998-INDUSTRIAL SYSTEMS II		2	3	202004-MORPHOLOGY AND CINEMATICS OF ROBOTS		3	4'5
201993-BASIC OPERATIONS AND ENGINEERING OF CHEMICAL REACTIONS		3	4'5	202003-MOBILE ROBOTICS		3	4'5
202001-PRACTICES IN COMPANIES		4	6	202005-PERCEPTION SYSTEMS		3	4'5
				202006-DISTRIBUTED SYSTEMS		3	4'5
				202008-EMBEDDED SYSTEMS IN ROBOTICS		3	4'5
				202007-OPERATING SYSTEMS IN INDUSTRIAL APPLICATIONS		3	4'5
				<b>Optional Subjects, Speciality in Intelligent Energy Generation and Distribution:</b>			
				202011-ENERGY STORAGE		3	4'5
				202017-NUCLEAR ENERGY GENERATION		3	4'5
				202013-DISTRIBUTED GENERATION AND NETWORK QUALITY		3	4'5
				202016-INTRODUCTION TO INTELLIGENT ENERGY NETWORKS		3	4'5
				202015-MONITORING AND CONTROL OF ENERGY NETWORKS		3	4'5
				202014-COMMUNICATION SYSTEMS IN ELECTRICAL NETWORKS		3	4'5
				202012-POWER ELECTRIC SYSTEMS		3	4'5
				202018-END OF MASTER THESIS			12

**H** = Hours per week (including theory and laboratory)

**Ects** = European credits ECTS

### 3.- MASTER "SCIENCE AND TECHNOLOGY FROM THE SPACE" (Code M039)

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Web page: <http://pie.uah.es/>

Subject	Lab	H	Ects	Subject	Lab	H	Ects
<i>Year 1 – Semester 1 (1<sup>st</sup>)</i>				<i>Year 1 – Semester 2 (2<sup>nd</sup>)</i>			
201762-SPATIAL ASTROPHISICS		3	6	200007-REAL-TIME CONTROL SOFTWARE FOR SPATIAL SYSTEMS		3	6
200002-HIGH ENERGY ASTRO-PHISICS		3	6	200008-HARDWARE SUPPORT IN SPATIAL ENGINEERING		3	6
200003-SUN-EARTH INTERACTION: SPATIAL METEOROLOGY		3	6	200009-ARTIFICIAL INTELLIGENCE IN AUTONOMOUS CONTROL SYSTEMS		3	6
201763-EXPLORATION OF THE SOLAR SYSTEM		3	6	200010-ENGINEERING AND MANAGEMENT OF SPATIAL PROJECTS		3	6
<b>Annual Courses:</b>							
200897-EXTERNAL PRACTICES		--	2	200897-EXTERNAL PRACTICES		--	2
201149-END OF MASTER PROJECT		--	4	201149-END OF MASTER PROJECT		--	4

**H** = Hours per week (including theory and laboratory)

**Ects** = European credits ECTS

#### 4.- GRADUATE IN TELECOMMUNICATION TECHNOLOGIES (Code G35)

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Subject	Lab	H	Ects	Subject	Lab	H	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>				<i>Year 1 – Semester 2 (2<sup>nd</sup>)</i>			
350000-LINEAR ALGEBRA		4	6	350007-DIGITAL ELECTRONICS	X	4	6
350001-CALCULUS I		4	6	350006-CALCULUS II		4	6
350002-PHYSICS FUNDAMENTALS I	X	4	6	350008-PHYSICS FUNDAMENTALS II	X	4	6
350003-INFORMATIC SYSTEMS	X	4	6	350009-PROGRAMMING	X	4	6
350004-THEORY OF CIRCUITS	X	4	6	350005-ANALYSIS OF CIRCUITS	X	4	6
<i>Year 2 - Semester 1 (3<sup>rd</sup>)</i>				<i>Year 2 – Semester 2 (4<sup>th</sup>)</i>			
350010-NETWORK ARCHITECTURE I	X	4	6	350015-NETWORK ARCHITECTURE II	X	4	6
350011-BASIC ELECTRONICS	X	4	6	350016-ENTERPRISE ECONOMY		4	6
350012-STATISTICS		4	6	350017-DIFFERENTIAL EQUATIONS AND NUMERICAL METHODS		4	6
350013-SIGNALS AND SYSTEMS		4	6	350018-CIRCUIT ELECTRONICS	X	4	6
350014-DIGITAL ELECTRONIC SYSTEMS	X	4	6	350019-COMMUNICATION THEORY		4	6
<i>Year 3 - Semester 1 (5<sup>th</sup>)</i>				<i>Year 3 – Semester 2 (6<sup>th</sup>)</i>			
350020-COMPUTER ARCHITECTURE	X	4	6	350025-DIGITAL COMMUNICATIONS	X	4	6
350021-ELECTRONIC DESIGN	X	4	6	350026-OPERATING SYSTEMS	X	4	6
350022-WAVES PROPAGATION	X	4	6	350027-ELECTRONIC SUBSYSTEMS	X	4	6
350023-COMMUNICATION NETWORKS	X	4	6	350028-HIGH FREQUENCY TECHNOLOGIES	X	4	6
350024-DIGITAL SIGNAL PROCESSING	X	4	6	100085-CC: PRACTICE OF PROFESSIONAL WORK OF THE TELECOMM. ENGINEER		4	6
				100079-CC: TECHNOLOGIES FOR THE DIGITAL SOCIETY	X	4	6
<i>Year 4 - Semester 1 (7<sup>th</sup>)</i>				<i>Year 4 – Semester 2 (8<sup>th</sup>)</i>			
350031-ADVANCED DIGITAL ELECTRONIC SYSTEMS	X	4	6	350032-END OF DEGREE PROJECT			12
350030-COMMUNICATION ELECTRONICS	X	4	6	<b>Generic Optional Subject:</b>			
350029-CONMUTATION	X	4	6	350047-OPT: PRACTICES IN COMPANY			18
<b>Optional Subjects, Speciality in Telecommunication Systems:</b>				<b>Optional Subjects, Speciality in Telecommunication Systems:</b>			
350033-OPT: OPTICAL COMMUNICATIONS	X	4	6	350037-OPT: RADIATION AND RADIOCOMMUNICATION	X	4	6
350034-OPT: COMMUNICATION CIRCUITS	X	4	6	350036-OPT: TELECOMMUNICATION SYSTEMS	X	4	6
				350035-OPT: MOBILE COMMUNICATIONS	X	4	6
<b>Optional Subjects, Speciality in Telematics:</b>				<b>Optional Subjects, Speciality in Telematics:</b>			
350038-OPT: TELEMATIC SERVICES	X	4	6	350041-OPT: ADVANCED PROGRAMMING	X	4	6
350039-OPT: SECURITY	X	4	6	350040-OPT: TRAFFIC ENGINEERING	X	4	6
				350042-OPT: LAB. NETWORKS, SYSTEMS AND SERVICES	X	4	6
<b>Optional Subjects, Speciality in Electronic Systems:</b>				<b>Optional Subjects, Speciality in Electronic Systems:</b>			
350043-OPT: ELECTRONIC INSTRUMENTATION	X	4	6	350045-OPT: ELECTRONIC CONTROL	X	4	6
350044-OPT: POWER ELECTRONICS	X	4	6	350046-OPT: ELECTRONIC TECHNOLOGY	X	4	6

**H** = Hours per week (including theory and laboratory)

**Ects** = European credits ECTS

**OPT** = Optional Subject

**CC** = Cross-Curricular Subject



## 5.- GRADUATE IN COMMUNICATION ELECTRONICS (Code G37)

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Subject	Lab	H	Ects	Subject	Lab	H	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>				<i>Year 1 – Semester 2 (2<sup>nd</sup>)</i>			
350000-LINEAR ALGEBRA		4	6	350007-DIGITAL ELECTRONICS	X	4	6
350001-CALCULUS I		4	6	350006-CALCULUS II		4	6
350002-PHYSICS FUNDAMENTALS I	X	4	6	350008-PHYSICS FUNDAMENTALS II	X	4	6
350003-INFORMATIC SYSTEMS	X	4	6	350009-PROGRAMMING	X	4	6
350004-THEORY OF CIRCUITS	X	4	6	350005-ANALYSIS OF CIRCUITS	X	4	6
<i>Year 2 - Semester 1 (3<sup>rd</sup>)</i>				<i>Year 2 – Semester 2 (4<sup>th</sup>)</i>			
350010-NETWORK ARCHITECTURE I	X	4	6	350015-NETWORK ARCHITECTURE II	X	4	6
350011-BASIC ELECTRONICS	X	4	6	350016-ENTERPRISE ECONOMY		4	6
350012-STATISTICS		4	6	350022-WAVES PROPAGACIÓN	X	4	6
350013-SIGNALS AND SYSTEMS		4	6	350018-ELECTRONICS OF CIRCUITS	X	4	6
350014-DIGITAL ELECTRONIC SYSTEMS	X	4	6	350019-COMMUNICATION THEORY		4	6
<i>Year 3 - Semester 1 (5<sup>rd</sup>)</i>				<i>Year 3 – Semester 2 (6<sup>th</sup>)</i>			
350021-ELECTRONIC DESIGN	X	4	6	370002-ELECTRONIC CONTROL	X	4	6
370000-POWER ELECTRONICS	X	4	6	350031-ADVANCED DIGITAL ELECTRONIC SYSTEMS	X	4	6
370001-ELECTRONIC INSTRUMENTATION	X	4	6	370003-ELECTRONIC TECHNOLOGY	X	4	6
350023-COMMUNICATION NETWORKS	X	4	6	100086-CC: SUPPORT TECHNOLOGIES FOR DISABLED PEOPLE	X	4	6
350027-ELECTRONIC SUBSYSTEMS	X	4	6	100083-CC: BIOENGINEERING FUNDAMENTALS	X	4	6
<i>Year 4 - Semester 1 (7<sup>rd</sup>)</i>				<i>Year 4 – Semester 2 (8<sup>th</sup>)</i>			
370004-ELECTRONIC SYSTEMS FOR COMMUNICATIONS	X	4	6	370005-END OF DEGREE PROJECT			12
<b>Specialized Optional Subjects:</b>				<b>Generic Optional Subjects:</b>			
370013-OPT: BIOMEDICAL ELECTRONICS	X	4	6	370019-OPT: PRACTICES IN COMPANY			18
370009-OPT: ARTIFICIAL VISION	X	4	6	370016-OPT: DIGITAL COMMUNICATIONS	X	4	6
370014-OPT: ELECTRONICS FOR RENEWABLE ENERGIES	X	4	6	380012-OPT: VISUAL PROGRAMMING	X	4	6
370007-OPT: PHOTONIC TECHNOLOGIES	X	4	6	370017-OPT: COMPUTERS ARCHITECTURE	X	4	6
370015-OPT: NOISE AND INTERFERENCES IN ELECTRONIC SYSTEMS	X	4	6	370018-OPT: BIOMEDICAL SIGNAL PROCESSING	X	4	6

**H** = Hours per week (including theory and laboratory)

**Ects** = European credits ECTS

**OPT** = Optional Subject

**CC** = Cross-Curricular Subject

## 6.- GRADUATE IN TELEMATICS (Code G38)

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Subject	Lab	H	Ects	Subject	Lab	H	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>				<i>Year 1 – Semester 2 (2<sup>nd</sup>)</i>			
350000-LINEAR ALGEBRA		4	6	350007-DIGITAL ELECTRONICS	X	4	6
350001-CALCULUS I		4	6	350006-CALCULUS II		4	6
350002-PHYSICS FUNDAMENTALS I	X	4	6	350008-PHYSICS FUNDAMENTALS II	X	4	6
350003-INFORMATIC SYSTEMS	X	4	6	350009-PROGRAMMING	X	4	6
350004-THEORY OF CIRCUITS	X	4	6	350005-ANALYSIS OF CIRCUITS	X	4	6
<i>Year 2 - Semester 1 (3<sup>rd</sup>)</i>				<i>Year 2 – Semester 2 (4<sup>th</sup>)</i>			
350010-NETWORK ARCHITECTURE I	X	4	6	350015-NETWORK ARCHITECTURE II	X	4	6
350011-BASIC ELECTRONICS	X	4	6	350016-ENTERPRISE ECONOMY		4	6
350012-STATISTICS		4	6	350022-WAVES PROPAGACIÓN	X	4	6
350013-SIGNALS AND SYSTEMS		4	6	350018-ELECTRONICS OF CIRCUITS	X	4	6
350014-DIGITAL ELECTRONIC SYSTEMS	X	4	6	350019-COMMUNICATION THEORY		4	6
<i>Year 3 - Semester 1 (5<sup>rd</sup>)</i>				<i>Year 3 – Semester 2 (6<sup>th</sup>)</i>			
380000-COMPUTER ARCHITECTURE	X	4	6	380004-CONMUTATION	X	4	6
380001-ADVANCED PROGRAMMING	X	4	6	380005-LABORATORY OF NETWORKS, SYSTEMS AND SERVICES	X	4	6
350023-COMMUNICATION NETWORKS	X	4	6	380006-OPERATING SYSTEMS	X	4	6
380002-SECURITY	X	4	6	100041-CC: DESIGN AND DEVELOPMENT OF MULTIMEDIA MATERIALS	X	4	6
380003-TELEMATIC SERVICES	X	4	6	100084-CC: VIDEOGAMES TECHNOLOGY	X	4	6
<i>Year 4 - Semester 1 (7<sup>rd</sup>)</i>				<i>Year 4 – Semester 2 (8<sup>th</sup>)</i>			
380007-TRAFFIC ENGINEERING	X	4	6	380008-END OF DEGREE PROJECT			12
<b>Specialized Optional Subjects:</b>				<b>Generic Optional Subjects:</b>			
380010-OPT: NETWORKS MANAGEMENT AND ADMINISTRATION	X	4	6	380017-OPT: PRACTICES IN COMPANY			18
380009-OPT: EMERGING TECHNOLOGIES FOR NETWORKS	X	4	6	380016-OPT: ADVANCED DIGITAL ELECTRONIC SYSTEMS	X	4	6
380015-OPT: OPERATING SYSTEMS AMPLIFICATION	X	4	6	370016-OPT: DIGITAL COMMUNICATIONS	X	4	6
380012-OPT: VISUAL PROGRAMMING	X	4	6	370007-OPT: PHOTONIC TECHNOLOGIES	X	4	6
380018-OPT: NETWORKS AND SERVICES ENGINEERING	X	4	6	350035-OPT: MOBILE COMMUNICATIONS	X	4	6

**H** = Hours per week (including theory and laboratory)

**Ects** = European credits ECTS

**OPT** = Optional Subject

**CC** = Cross-Curricular Subject

## 7.- GRADUATE IN TELECOMMUNICATION SYSTEMS (Code G39)

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Subject	Lab	H	Ects	Subject	Lab	H	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>				<i>Year 1 – Semester 2 (2<sup>nd</sup>)</i>			
350000-LINEAR ALGEBRA		4	6	350007-DIGITAL ELECTRONICS	X	4	6
350001-CALCULUS I		4	6	350006-CALCULUS II		4	6
350002-PHYSICS FUNDAMENTALS I	X	4	6	350008-PHYSICS FUNDAMENTALS II	X	4	6
350003-INFORMATIC SYSTEMS	X	4	6	350009-PROGRAMMING	X	4	6
350004-THEORY OF CIRCUITS	X	4	6	350005-ANALYSIS OF CIRCUITS	X	4	6
<i>Year 2 - Semester 1 (3<sup>rd</sup>)</i>				<i>Year 2 – Semester 2 (4<sup>th</sup>)</i>			
350010-NETWORK ARCHITECTURE I	X	4	6	350015-NETWORK ARCHITECTURE II	X	4	6
350011-BASIC ELECTRONICS	X	4	6	350016-ENTERPRISE ECONOMY		4	6
350012-STATISTICS		4	6	350022-WAVES PROPAGACIÓN	X	4	6
350013-SIGNALS AND SYSTEMS		4	6	350018-CIRCUIT ELECTRONICS	X	4	6
350014-DIGITAL ELECTRONIC SYSTEMS	X	4	6	350019-COMMUNICATION THEORY		4	6
<i>Year 3 - Semester 1 (5<sup>rd</sup>)</i>				<i>Year 3 – Semester 2 (6<sup>th</sup>)</i>			
390000-COMMUNICATION CIRCUITS	X	4	6	390001-MOBILE COMMUNICATIONS	X	4	6
350025-DIGITAL COMMUNICATIONS	X	4	6	390002-RADIATION AND RADIOCOMMUNICATION	X	4	6
350023-COMMUNICATION NETWORKS	X	4	6	390003-TELECOMMUNICATION SYSTEMS	X	4	6
350028-HIGH FREQUENCY TECHNOLOGIES	X	4	6	CC: ACCESSIBILITY	X	4	6
350024-DIGITAL SIGNAL PROCESSING	X	4	6	CC: MUSIC TECHNOLOGY	X	4	6
<i>Year 4 - Semester 1 (7<sup>rd</sup>)</i>				<i>Year 4 – Semester 2 (8<sup>th</sup>)</i>			
390004-OPTICAL COMMUNICATIONS	X	4	6	390005-END OF DEGREE PROJECT			12
<b>Specialized Optional Subjects:</b>				<b>Generic Optional Subjects:</b>			
390007-OPT: VOICE AND AUDIO DIGITAL SIGNAL PROCESSING	X	4	6	390014-OPT: PRACTICES IN COMPANY			18
390010-OPT: SATELLITE COMMUNICATIONS	X	4	6	380016-OPT: ADVANCED DIGITAL ELECTRONIC SYSTEMS	X	4	6
390006-OPT: RADIODETERMINATION AND RADAR	X	4	6	390013-OPT: MOBILE NETWORKS AND SERVICES ENGINEERING	X	4	6
390009-OPT: WIRELESS TECHNOLOGIES	X	4	6	380012-OPT: VISUAL PROGRAMMING	X	4	6
390012-OPT: IMAGE PROCESSING AND COMPUTATIONAL VISION	X	4	6	370017-OPT: COMPUTERS ARCHITECTURE	X	4	6
				370007-OPT: PHOTONIC TECHNOLOGIES	X	4	6

**H** = Hours per week (including theory and laboratory)

**Ects** = European credits ECTS

**OPT** = Optional Subject

**CC** = Cross-Curricular Subject

## 8.- GRADUATE IN INDUSTRIAL ELECTRONICS AND AUTOMATICS (Code G60)

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Subject	Lab	H	Ects	Subject	Lab	H	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>				<i>Year 1 – Semester 2 (2<sup>nd</sup>)</i>			
600000-LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS		4	6	600006-MECHANICAL SYSTEMS	X	4	6
600025-CALCULUS I		4	6	600027-CALCULUS II		4	6
600001-GRAPHIC EXPRESSION	X	4	6	<b>600005-INFORMATICS</b>	<b>X</b>	<b>4</b>	<b>6</b>
600002-PHYSICS II	X	4	6	600004-PHYSICS II	X	4	6
600003-CHEMISTRY	X	4	6	600026-ANALYSIS OF CIRCUITS	X	4	6
<i>Year 2 - Semester 1 (3<sup>rd</sup>)</i>				<i>Year 2 – Semester 2 (4<sup>th</sup>)</i>			
600007-SCIENCE OF MATERIALS		4	6	<b>600010-CONTROL ENGINEERING I</b>	<b>X</b>	<b>4</b>	<b>6</b>
<b>600008-ANALOG ELECTRONICS</b>	<b>X</b>	<b>4</b>	<b>6</b>	600031-ENTERPRISE ECONOMY		4	6
<b>600028-DIGITAL ELECTRONICS</b>	<b>X</b>	<b>4</b>	<b>6</b>	<b>600011-INDUSTRIAL INFORMATICS</b>	<b>X</b>	<b>4</b>	<b>6</b>
600029-STATISTICS		4	6	600015-FLUIDS MECHANICS	X	4	6
600009-THERMIC ENGINEERING	X	4	6	<b>600012-ELECTRONIC TECHNOLOGY</b>	<b>X</b>	<b>4</b>	<b>6</b>
<i>Year 3 - Semester 1 (5<sup>rd</sup>)</i>				<i>Year 3 – Semester 2 (6<sup>th</sup>)</i>			
600013-AUTOMATIZACIÓN	X	4	6	<b>600017-POWER ELECTRONICS</b>	<b>X</b>	<b>6</b>	<b>9</b>
600014-ELECTRICAL MACHINES	X	4	6	600018-ELECTRONIC INSTRUMENTATION	X	6	9
<b>600030-DIGITAL ELECTRONIC SYSTEMS</b>	<b>X</b>	<b>4</b>	<b>6</b>	600019-MATERIALS RESISTANCE		4	6
600016-CONTROL ENGINEERING II	X	4	6	600020-ELECTRONIC CONTROL ENGINEERING	X	4	6
<i>Year 4 - Semester 1 (7<sup>rd</sup>)</i>				<i>Year 4 – Semester 2 (8<sup>th</sup>)</i>			
600021-PROJECTS	X	4	6	600024-END OF DEGREE PROJECT			12
600023-ROBOTIC SYSTEMS	X	4	6	<b>Generic Optional Subjects:</b>			
600022-INDUSTRIAL PRODUCTION SYSTEMS	X	4	6	600043-OPT: PRACTICES IN COMPANY			18
<b>Specialized Optional Subjects:</b>				600042-OPT: ELECTRICAL GENERATION WITH RENEWABLE ENERGIES	X	4	6
600033-OPT: ELECTRONIC DESIGN	X	4	6	600040-OPT: MACHINES REGULATION	X	4	6
600034-OPT: ARTIFICIAL VISION	X	4	6	600032-OPT: ADVANCED DIGITAL ELECTRONIC SYSTEMS	X	4	6
<b>Generic Optional Subjects:</b>				600037-OPT: POWER CONVERTERS CONTROL	X	4	6
600036-OPT: ELECTRICAL POWER CENTRES	X	4	6				
600038-OPT : INTELLIGENT CONTROL	X	4	6				
600039-OPT : REAL TIME SYSTEMS	X	4	6				
600041-OPT : INDUSTRIAL ELECTRICAL INSTALATIONS	X	4	6				

**H** = Hours per week (including theory and laboratory)

**Ects** = European credits ECTS

**OPT** = Optional Subject

## II. COMPUTER SCIENCE STUDIES

### 9.- GRADUATE IN COMPUTER SCIENCES (Code G780)

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Subject	Lab	H	Ects	Subject	Lab	H	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>				<i>Year 1 - Semester 2 (2<sup>nd</sup>)</i>			
780000-PHISICS	X	4	6	780005-PROGRAMMING	X	4	9
780001-MATHEMATICAL BASES	X	4	6	780006-ENTERPRISE BASES	X	4	9
780003-PROGRAMMING BASES	X	4	6	780007-OPERATING SYSTEMS	X	4	6
780002-COMPUTERS TECHNOLOGY BASES	X	4	6	780008-DISCREET STRUCTURES	X	4	6
780004-STATISTICS	X	4	6				
<i>Year 2 - Semester 1 (3<sup>rd</sup>)</i>				<i>Year 2 - Semester 2 (4<sup>th</sup>)</i>			
780009-DATA STRUCTURE	X	4	6	780014-ADVANCED PROGRAMMING	X	4	6
780010-COMPUTER STRUCTURE AND ORGANIZATION	X	4	6	780015-SOFTWARE ENGINEERING	X	4	6
780011-NETWORKS ARCHITECTURES	X	4	6	780016-DATABASES	X	4	6
780012-ADVANCED OPERATING SYSTEMS	X	4	6	780017-COMPUTERS NETWORKS	X	4	6
780013-ADVANCED MATHEMATICS	X	4	6				
<i>Year 3 - Semester 1 (5<sup>th</sup>)</i>				<i>Year 3 - Semester 2 (6<sup>th</sup>)</i>			
780018-LANGUAGE PROCESSORS	X	4	6	780022-PROJECT MANAGEMENT	X	4	6
780019-ADVANCED SOFTWARE ENGINEERING	X	4	6	780023-ENTERPRISE SYSTEMS		4	6
780020-ADVANCED DATABASES	X	4	6	780024-ARTIFICIAL INTELLIGENCE	X	4	6
780021-ALGORITHMICS AND COMPLEXITY		4	6	780025-AUTOMATIZED KNOWLEDGE AND REASONING		4	6
				780026-ADVANCED PROGRAMMING AMPLIFICATION	X	4	6
<i>Year 4 - Semester 1 (7<sup>th</sup>)</i>				<i>Year 4 - Semester 2 (8<sup>th</sup>)</i>			
				780028-END OF DEGREE PROJECT			15
<b>Generic Optional Subjects:</b>				<b>Generic Optional Subjects:</b>			
780035-OPT: EFFECTIVE PRESENTATIONS AND NEGOZIACIÓN		4	6	780027-OPT: PRACTICES IN COMPANY			15
780029-OPT: ARTIFICIAL VISION SYSTEMS	X	4	6	780030-OPT: BIOENGINEERING		4	6
780033-OPT: AUDIOVISUAL SYSTEMS AND MULTIMEDIA APPLICATIONS	X	4	6	780031-OPT: APPLICATIONS OF CONTROL SYSTEMS	X	4	6
780034-OPT: APPLICATIONS OF SOFT-COMPUTING IN ENERGY, VOICE AND IMAGE	X	4	6	780032-OPT: DESIGN TECHNIQUES APPLIED TO SUPERVISION SYSTEMS FOR REMOTE TRAINING	X	4	6
<b>Speciality Optional Subjects: Knowledge Engineering</b>				<b>Speciality Optional Subjects: Knowledge Engineering</b>			
780040-OPT: MAPS (MULTIAGENT PLANNING SYSTEMS)	X	4	6	780037-OPT: KNOWLEDGE ENGINEERING		4	6
780039-OPT: AUTOMATIC EXTRACTION OF KNOWLEDGE	X	4	6	780038-OPT: FLEXIBLE COMPUTATION	X	4	6
<b>Speciality Optional Subjects: Software Engineering</b>				<b>Speciality Optional Subjects: Software Engineering</b>			
780041-OPT: ARCHITECTURE AND DESIGN OF WEB AND CLIENT/SERVER SYSTEMS	X	4	6	780043-OPT: QUALITY, TESTS AND MAINTENANCE OF SOFTWARE	X	4	6
780042-OPT: SOFTWARE PATTERNS	X	4	6	780047-OPT: ADVANCED MODELS OF DATABASES	X	4	6
<b>Speciality Optional Subjects: Advanced Networks</b>				<b>Speciality Optional Subjects: Advanced Networks</b>			
780036-OPT: SECURITY	X	4	6	780044-OPT: NETWORKS MANAGEMENT	X	4	6
780045-OPT: NETWORK TECHNOLOGIES AND SERVICES	X	4	6	780046-OPT: ADMINISTRATION AND MAINTENANCE OF OPERATING SYSTEMS	X	4	6

## 10.- GRADUATE IN INFORMATION SYSTEMS (Code G58)

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Subject	Lab	H	Ects	Subject	Lab	H	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>				<i>Year 1 - Semester 2 (2<sup>nd</sup>)</i>			
780001-MATHEMATICAL BASES	X	4	6	780005-PROGRAMMING	X	6	9
780003-PROGRAMMING BASES	X	4	6	780006-ENTERPRISE BASES	X	6	9
<b>780002-COMPUTERS TECHNOLOGY BASES</b>	<b>X</b>	<b>4</b>	<b>6</b>	<b>780007-OPERATING SYSTEMS</b>	<b>X</b>	<b>4</b>	<b>6</b>
780004-STATISTICS	X	4	6				
580001-PERSONAL AND EQUIPMENTS MANAGEMENT	X	4	6				
<i>Year 2 - Semester 1 (3<sup>rd</sup>)</i>				<i>Year 2 - Semester 2 (4<sup>th</sup>)</i>			
580002-INFORMATION SYSTEMS BASES	X	6	9	<b>780015-SOFTWARE ENGINEERING I</b>	<b>X</b>	<b>4</b>	<b>6</b>
<b>780009-DATA STRUCTURE</b>	<b>X</b>	<b>4</b>	<b>6</b>	<b>780016-DATABASES I</b>	<b>X</b>	<b>4</b>	<b>6</b>
580004-ACCOUNTANT INFORMATION SYSTEMS		6	9	580005-INVESTMEN PROJECTS: ANALYSIS AND ASSESMENT		4	6
580006-TIC MARKETING		4	6	580003-NETWORKS	X	4	6
				580007-ENTERPRISE AND TICS	X	4	6
<i>Year 3 - Semester 1 (5<sup>th</sup>)</i>				<i>Year 3 - Semester 2 (6<sup>th</sup>)</i>			
780019-ADVANCED SOFTWARE ENGINEERING	X	4	6	580009-INFORMATION ORGANIZATION AND PROJECTS		4	6
780020-ADVANCED DATABASES	X	4	6	580010-ENTERPRISE SYSTEMS		6	9
780021-PROJECT MANAGEMENT		4	6	580011-DEVELOPMENT WITH EMERGING TECHNOLOGIES	X	4	6
580012-INFORMATION SYSTEMS TO SUPPORT PROCESSES AND DECISION MAKING		6	9	580008-MODELS AND TECHNOLOGIES FOR INFORMATION SYSTEMS		4	6
<i>Year 4 - Semester 1 (7<sup>th</sup>)</i>				<i>Year 4 - Semester 2 (8<sup>th</sup>)</i>			
				580014-END OF DEGREE PROJECT			15
<b>Generic Optatives:</b>				<b>Generic Optional Subjects:</b>			
780035-OPT: EFFECTIVE PRESENTATIONS AND NEGOZIATION		4	6	580013-OPT: PRACTICES IN COMPANY			15
780029-OPT: ARTIFICIAL VISION SYSTEMS	X	4	6	780030-OPT: BIOENGINEERING		4	6
780033-OPT: AUDIOVISUAL SYSTEMS AND MULTIMEDIA APPLICATIONS	X	4	6	<b>780031-OPT: APPLICATIONS OF CONTROL SYSTEMS</b>	<b>X</b>	<b>4</b>	<b>6</b>
780034-OPT: APPLICATIONS OF SOFT-COMPUTING IN ENERGY, VOICE AND IMAGE	X	4	6	780032-OPT: DESIGN TECHNIQUES APPLIED TO SUPERVISION SYSTEMS FOR REMOTE TRAINING	X	4	6
<b>Speciality Optional Subjects: Entrepreneurship and enterprises based on technology</b>				<b>Speciality Optional Subjects: Entrepreneurship and enterprises based on technology</b>			
580019-INFORMATION SYSTEMS FOR EXPENSE MANAGEMENT		4	6	580017-FOUNDAMENTS OF E-COMMERCE		4	6
580020-LESSONS AND ACTIONS OF ENTREPRENEURSHIP		4	6	580018-THE LEADER-COACH: KEYS FOR DEVELOPMENT OF LEADERSHIP SKILLS		4	6
<b>Speciality Optional Subjects: E-Commerce and web-based systems</b>				<b>Speciality Optional Subjects: E-Commerce and web-based systems</b>			
780041-ARCHITECTURE AND DESIGN OF WEB AND CLIENT/SERVER SYSTEMS	X	4	6	580017-FOUNDAMENTS OF E-COMMERCE		4	6
580016-UBICUOUS COMPUTATION	X	4	6	580015-SECURITY IN DISTRIBUTED SYSTEMS	X	4	6

## 11.- GRADUATE IN COMPUTER ENGINEERING (Code G59)

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Subject	Lab	H	Ects	Subject	Lab	H	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>				<i>Year 1 - Semester 2 (2<sup>nd</sup>)</i>			
780000-PHISICS	X	4	6	590000-SOFTWARE DEVELOPMENT	X	4	9
780001-MATHEMATICAL BASES		4	6	590001-ENTERPRISE MANAGEMENT		4	9
780003-PROGRAMMING BASES	X	4	6	<b>780007-OPERATING SYSTEMS</b>	<b>X</b>	<b>4</b>	<b>6</b>
<b>780002-COMPUTERS TECHNOLOGY BASES</b>	<b>X</b>	<b>4</b>	<b>6</b>	780008-DISCREET STRUCTURES	X	4	6
780004-STATISTICS		4	6				
<i>Year 2 - Semester 1 (3<sup>rd</sup>)</i>				<i>Year 2 - Semester 2 (4<sup>th</sup>)</i>			
<b>780009-DATA STRUCTURE</b>	<b>X</b>	<b>4</b>	<b>6</b>	<b>780014-ADVANCED PROGRAMMING</b>	<b>X</b>	<b>4</b>	<b>6</b>
<b>780010-COMPUTERS STRUCTURE AND ORGANIZATION</b>	<b>X</b>	<b>4</b>	<b>6</b>	<b>780015-SOFTWARE ENGINEERING</b>	<b>X</b>	<b>4</b>	<b>6</b>
<b>780011-NETWORKS ARCHITECTURES</b>	<b>X</b>	<b>4</b>	<b>6</b>	<b>780016-DATABASES</b>	<b>X</b>	<b>4</b>	<b>6</b>
<b>780012-ADVANCED OPERATING SYSTEMS</b>	<b>X</b>	<b>4</b>	<b>6</b>	<b>780017-COMPUTERS NETWORKS</b>	<b>X</b>	<b>4</b>	<b>6</b>
590002-ADVANCED MATHEMATICS		4	6	<b>590003-CIRCUITS ANALYSIS</b>		4	6
<i>Year 3 - Semester 1 (5<sup>th</sup>)</i>				<i>Year 3 - Semester 2 (6<sup>th</sup>)</i>			
780018-LANGUAGE PROCESSORS	X	4	6	590007-PERCEPTION AND CONTROL		4	6
<b>590004-SIGNALS AND SYSTEMS</b>		<b>4</b>	<b>6</b>	780022-PROJECT MANAGEMENT	X	4	6
590005-ARCHITECTURE AND ENGINEERING OF COMPUTERS	X	4	6	590008-REAL TIME SYSTEMS	X	4	6
590006-ELECTRONICS	X	4	6	590009-MODELING AND SYNTHESIS OF DIGITAL ELECTRONIC SYSTEMS	X	4	6
				590010-EMBEDDED SYSTEMS	X	4	6
<i>Year 4 - Semester 1 (7<sup>th</sup>)</i>				<i>Year 4 - Semester 2 (8<sup>th</sup>)</i>			
				590014-TRABAJO FIN DE GRADO			15
<b>Generic Optional Subjects:</b>				<b>Generic Optional Subjects:</b>			
780035-OPT: EFFECTIVE PRESENTATIONS AND NEGOCIATION		4	6	590013-OPT: PRACTICES IN COMPANY			15
780029-OPT: ARTIFICIAL VISION SYSTEMS	X	4	6	780030-OPT: BIOENGINEERING		4	6
780033-OPT: AUDIOVISUAL SYSTEMS AND MULTIMEDIA APPLICATIONS	X	4	6	<b>780031-OPT: APPLICATIONS OF CONTROL SYSTEMS</b>	<b>X</b>	<b>4</b>	<b>6</b>
780034-OPT: APPLICATIONS OF SOFT-COMPUTING IN ENERGY, VOICE AND IMAGE	X	4	6	780032-OPT: DESIGN TECHNIQUES APPLIED TO SUPERVISION SYSTEMS FOR REMOTE TRAINING	X	4	6

## **12.- MASTER "SOFTWARE ENGINEERING FOR THE WEB" (Code M134)**

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Course	Ects	Course	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>		<i>Year 1 – Semester 2 (2<sup>nd</sup>)</i>	
201855-WEB TECHNOLOGY	6	201859-WEB USABILITY AND ACCESIBILITY	6
201856-TOOLS FOR WEB DEVELOPMENT	12	201860-WEB CLIENT TECHNOLOGIES	6
201857-METHODOLOGIES OF SOFTWARE ENGINEERING FOR THE WEB	6	201861-MOBILE APPLICATIONS	6
201858-FREE SOFTWARE FOR THE WEB	6	201862-WEB SECURITY	6
		201052-END OF MASTER PROJECT	6

**Ects** = European Credits ECTS

## **13.- MASTER "DIRECTION OF COMPUTING PROJECTS" (Code M133)"**

(Click [HERE](#) to see the contents of the subjects in Spanish language, via Internet)

Course	Ects	Course	Ects
<i>Year 1 - Semester 1 (1<sup>st</sup>)</i>		<i>Year 1 – Semester 2 (2<sup>nd</sup>)</i>	
201848-COMPUTING PLANIFICATION AND MANAGEMENT	6	201851-LAW FOR THE INFORMATION TECHNOLOGIES AND COMMUNICATIONS	6
201074-COMPUTING AUDIT	6	201852-DIRECTION AND MANAGEMENT OF TEAMS BY OBJECTIVES	6
201849-COMPUTING SECURITY	9	201853-NEGOCIACIÓN AND MOTIVATION OF PERSONS	6
201850-COMPUTING QUALITY	9	201854-COMMUNICATION MANAGEMENT	6
		201089-END OF MASTER PROJECT	6

**Ects** = European Credits ECTS