

# Master's degree in Telecommunications Engineering (MET)

The **master's degree in Telecommunications Engineering** is a training proposal that is adaptable to the needs of two types of students: those who wish to focus on a professional career and those who wish to pursue a doctoral degree in the area of telecommunications engineering.

This master's degree provides graduates with a broad profile that includes skills and expertise in communications systems, networks, electronics and audiovisual systems to ensure that they have the professional competencies that they need to practise as telecommunications engineers. After the first, compulsory subject area, students can choose from a wide variety of subjects to acquire a general profile, specialise in a field, or engage in research and pursue a doctoral degree.

The aim is for the graduates to enter modern industry as benchmark professionals in the new multidisciplinary work and production scenario. To increase their employability, students can take both the master's thesis and some of the ECTS credits for optional subjects in a company or laboratory.

MET has a strong international character. It is taught entirely in English as it is expected that a large number of students will be from other countries. There is also the possibility of obtaining a joint degree with another internationally renowned university.

## Specialisations

- [Antennas, Microwaves and Photonics for Communications and Earth Observation](#)
- [Electronics](#)
- [Fibre Optic Communications](#)
- [Internet Networks and Technologies](#)
- [Multimedia](#)
- [Wireless Communications](#)

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## GENERAL DETAILS

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### Duration and start date

Two academic years, 120 ECTS credits. Starting September and February

### Timetable and delivery

Mornings and afternoons. Face-to-face

### Fees and grants

Approximate fees for the master's degree, excluding degree certificate fee, €5,300 (€7,950 for non-EU residents).

#### Grants for the degree

- **Everis:** 3 scholarships with a grant of €3,000 each, and carrying out practices in Everis during a semester..
- **Fòrum TIC:** 1 scholarship of €3,000.
- **HP:** 1 scholarship with a grant of €2,773.35 and an additional employment contract linked to the duration of the scholarship .
- **Telecogresca:** 1 scholarship for the 1st.

[More information about own scholarships](#)

[More information about fees and payment options](#)

[More information about grants and loans](#)

### Language of instruction

English

### Location

## Official degree

[Recorded in the Ministry of Education's degree register](#)

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## ADMISSION

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### General requirements

[Academic requirements for admission to master's degrees](#)

### Specific requirements

- Bachelor's degree in Telecommunications Technologies and Services Engineering
- Bachelor's degree in Telecommunications Science and Technology
- Bachelor's degree in Audiovisual Systems Engineering
- Bachelor's degree in Electronic Systems Engineering
- Bachelor's degree in Telecommunications Systems Engineering
- Bachelor's degree in Network Engineering.
- Bachelor's degree in Electrical Engineering.
- Pre-EHEA five-year degree in Telecommunications Engineering: 60 ECTS credits may be recognised if the degree is homologated in Spain.
- Pre-EHEA five-year degree in Electronic Engineering: 45 ECTS credits may be recognised if the degree is homologated in Spain.
- Pre-EHEA diploma in Telecommunications Engineering: an additional 30 ECTS credits must be passed.
- Bachelor's degree in Engineering Physics: an additional 60 ECTS credits must be passed (30 of them can be taken as optional courses on the bachelor's degree in Engineering Physics).

Applicants who have other technology degrees in fields such as Computer Engineering, Software Engineering, Informatics Engineering, Industrial Electronics and Automatic Control Engineering, Science and Technology, etc. may need to pass some courses in addition to those of the master's degree. These bridging courses are part of the [bachelor's degree in Telecommunications Technologies and Services Engineering](#) and are taught in Catalan or Spanish. The maximum number of credits for bridging courses is 60 ECTS.

The exact number of additional ECTS credits depends on the degree held by the applicant and will be decided by the academic committee of the master's degree.

### Admission criteria

#### Language requirements:

CEFR English Level B2, which you can demonstrate in one of the following ways:

- Your mother tongue is English.
- You have studied in an English-speaking country (for at least one semester).
- You have taken an academic university programme taught in English (for at least one semester).
- You hold a European Higher Education Area degree that includes English Level B2.
- You hold one of the following English language certificates:
  - Cambridge: FCE
  - TOEFL PBT:  $\geq 567$ ; CBT:  $\geq 227$ ; IBT:  $\geq 87$
  - IELTS: 5.5
  - TOEIC: 750
  - Escuela Oficial de Idiomas: Certificado de nivel avanzado (Level 5)

- You obtain a B2 [English certificate at the UPC](#)

Knowledge of Catalan and Spanish may be helpful for daily life.

Find more information on the [Language services and resources at the UPC website](#).

### Places

60 in September; 30 in February

## Pre-enrolment

Pre-enrolment closed (consult the new pre-enrolment periods in the [academic calendar](#)).

[How to pre-enrol](#)

## Enrolment

[How to enrol](#)

## Legalisation of foreign documents

All documents issued in non-EU countries must be [legalised and bear the corresponding apostille](#).

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## DOUBLE-DEGREE AGREEMENTS

### Double-degree pathways with universities around the world

- Master's degree in Telecommunications Engineering (**MET**, ETSETB) + one of the following master's degrees from the KTH Royal Institute of Technology, School of Electrical Engineering, Stockholm, Sweden:
  - Master's programme in Electric Power Engineering
  - Master's programme in Electrophysics
  - Master's programme in Information and Network Engineering
  - Master's programme in Systems, Control and Robotics
- MET + *Ingénieur ISAE-SUPAERO* (École Nationale Supérieure de l'Aéronautique et de l'Espace, Toulouse, France)
- MET + one of the following master's degrees from the Illinois Institute of Technology:
  - Master of Science in Electrical Engineering
  - Master of Science in Computer Engineering
  - Master of Biomedical Imaging and Signals
  - Master of Network Engineering
  - Master of Telecommunications and Software Engineering
  - Master of Information Technology and Management
  - Master of Cyber Forensics and Security
  - Master of Information Technology and Management
- MET + *Laurea Magistrale in Ingegneria della Telecomunicazioni* (Politecnico di Milano, Italy)
- MET + *Maestría en Ingeniería de las Telecomunicaciones* (Pontificia Universidad Católica del Perú, Perú)
- MET + one of the following master's degrees from the École Nationale Supérieure des Télécommunications de Bretagne (Telecom Bretagne):
  - *Diplôme d'ingénieur*
  - *Diplôme national de master*
- MET + Master's degree in Electrical and Computer Engineering, specialisation in Telecommunications or Electronics (Instituto Superior Técnico, Lisbon)
- MET + *Mestría en Sistemas de Información* (Universidad Católica Andrés Bello, Caracas, Venezuela)

[More information](#)

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## PROFESSIONAL OPPORTUNITIES

### Professional opportunities

The areas in which graduates of this master's degree may find employment are similar to those for graduates of the five-year degree in Telecommunications Engineering, although their profiles are enhanced by an extra academic year. Their careers may lead them to practise as:

Telecommunications engineers in any of the following areas:

- Telecommunications operations.
- Telecommunications equipment industry.
- Electronic equipment industry.
- Semiconductor industry.
- IT consulting firms (network solution designers, network planners and designers, network project leaders, etc.).
- IT companies, from content producers and distributors to service providers.
- Regulatory bodies.
- Software editing firms.
- Other industries such as cars manufacturers and consumer and industrial electronics companies, and areas such as

health, energy, intelligent transport systems, logistics and mobility, agricultural and food, air and maritime transport, railway infrastructure, control systems and security of facilities and electronic services transactions, as well as rapidly expanding areas such as smart cities, smart homes, smart grids and smart health.

Freelance professionals acting as telecommunications engineering advisors and consultants.

Sales engineers.

Civil servants or employees of public administrations at EU, national, regional and local level in the field of telecommunications and ICT innovation.

Research, development and innovation specialists in public and private companies.

Researchers and academics at public or private universities.

In addition to professionally oriented topics, the master's degree offers highly specialised optional subjects intended for those students who are looking to pursue a **doctoral degree in Telecommunications Engineering**.

## Labour Market

Every three years, the Catalan University Quality Assurance Agency (AQU) publishes a [study](#) about the employability of Catalan university graduates.

The last of these studies, [Universities and Employment in Catalonia 2014](#) analyses the employability of students who graduated in the 2009-2010 academic year.

The [most significant labour market data](#) for telecommunication engineers are the following:

- The graduate employment rate is 92.6%.
- It takes 84% of graduates less than three months to find their first job.
- Of students who graduated in the 2009-2010 academic year, 78.5% earn over €2000 a month.
- Telecommunications engineering is in fourth place in the ranking of degree courses according to the Job Quality Index.

The Everis Foundation has issued a [ranking of universities](#) based on companies' views on the employability of new graduates. The UPC is the top Spanish university in the area of software and telecommunications engineering.

## Competencies

### Generic competencies

Generic competencies are the skills that graduates acquire regardless of the specific course or field of study. The generic competencies established by the UPC are capacity for innovation and entrepreneurship, sustainability and social commitment, knowledge of a foreign language (preferably English), teamwork and proper use of information resources.

### Specific competencies

On completion of the course, students will have achieved competence in the following areas:

- Communication systems: wired and wireless, optical fibre.
- Computer networks, internet, local area networks (Ethernet, Wi-Fi).
- Voice networks, video distribution and television streaming, P2P, mobile networks.
- Security in communication networks: encryption, user authentication, digital signatures.
- Radio navigation, global positioning systems (GPS).
- Radar.
- Information processing: encoding, compression, error correction, image recognition, video clip recognition, voice recognition, voice generation.
- Electronic components and circuits: microprocessor devices (routers, switches, etc.), sensors, actuators, transducers.
- Technology and electronics, analogue and digital electronic instrumentation, medical electronics, consumer electronics, control systems, robotics, automation.
- Micro- and nanotechnologies.

- Bioengineering applications, telemedicine, e-commerce platforms, smart cities, smart metering, sensor networks, smart homes, green computing, cloud computing.

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## ORGANISATION

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### Organizing teaching center

- [Technical School of Telecommunications Engineering of Barcelona \(ETSETB\)](#)

### Academic program manager

- [Marcos Postigo](#)

### Academic calendar

- [General academic calendar for degrees, masters and doctorates](#)
- [Current course \(class schedules, master's calendar, exams, teachers, ...\)](#)

### Academic regulations

- [Academic regulations of the masters of the UPC](#)
- [Specific academic regulations for the MET and MEE masters](#)

### Academic and administrative procedures

- [Pre-enrollment, registration, master's thesis, ...](#)
- [Mobility agreements to carry out the master's thesis at universities and foreign companies](#)
- [Business practices](#)

### List of courses and teaching guides

- [Bridge](#)
- [Core](#)
- [Intensification](#)
- [Specialization](#)
- [Elective](#)

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## CURRICULUM

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### MET Curriculum

Master MET offers 3 types of academic paths:

- **Academic path without specialization:** If you want maximum flexibility in the elective subjects, choose this option. There are 45 compulsory ECTS credits, 15 ECTS credits from one intensification and you will have 30 more ECTS to choose among the different elective options. The final thesis has 30 ECTS.
- **Academic path with specialization:** If you want to be a specialist in one of the multiple areas of the electrical engineering, choose this option. There are 45 compulsory ECTS credits, 30 ECTS credits from the intensification that you prefer, and you will still have 15 more ECTS to choose among the different elective options. The final thesis has 30 ECTS. The different specialisations are:
  - [Antennas, Microwaves and Photonics for Communications and Earth Observation](#)
  - [Electronics](#)
  - [Fibre Optic Communications](#)
  - [Internet Networks and Technologies](#)
  - [Multimedia](#)
  - [Wireless communications](#)
- **Academic path with double-degree (limited places):** If you prefer maximum internationalization and another master degree, choose this option. You will have to enrol 45 compulsory ECTS credits, 15 ECTS credits from one intensification and 60 or 90 ECTS credits (that include the 30 ECTS of the thesis) at the foreign university.

Subjects are structured in different blocks:

- **Bridge subjects:** To be taken by students whose academic profile is not a general bachelor of telecommunications engineering. The Academic Commission of Masters assigns these courses to new students. These subjects do not extend the master, they use elective credits.
- **Core subjects:** Compulsory subjects.
- **Intensification subjects (Academic path without specialization):** The student must choose one intensification (Communications, Electronics, Multimedia or Networks) and take 3 subjects from a choice of 9. These subjects can be enrolled in different semesters, but the student must have passed 3 of the same intensification before finishing the master.
- **Specialization subjects (Academic path with specialization):** The student will take 4 specialization compulsory subjects and 2 specialization elective subjects.
- **Elective credits:** These credits can be divided between:
  - Elective subjects.
  - Introduction to research subjects.
  - Seminars.
  - Internships in companies or laboratories (15 ECTS).
  - Recognized for professional experience (15 ECTS maximum).
- **Master's Thesis.**



**NO SPECIALIZATION - MAXIMUM FLEXIBILITY**  
 Choose 15 ECTS from one intensification and 30 elective ECTS  
 Double-Degree students must follow this path

**INTENSIFICATIONS**

- Communications  
15 ECTS
- Electronics  
15 ECTS
- Multimedia  
15 ECTS
- Networks  
15 ECTS

**ELECTIVE CREDITS  
30 ECTS**

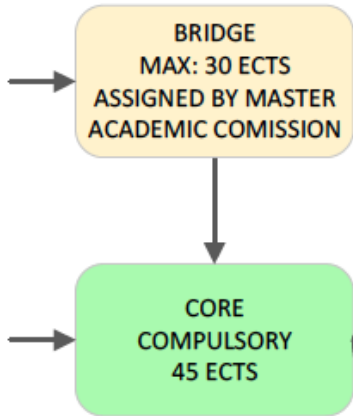
**THESIS  
30 ECTS**

**WITH SPECIALIZATION**  
 Each specialization has 30 ECTS:  
 4 compulsory subjects + 2 specialization elective subjects

**SPECIALIZATIONS**

- Antennas, microwaves and photonics for communications and Earth observation  
30 ECTS
- Electronics  
30 ECTS
- Fiber-Optic communications  
30 ECTS
- Multimedia  
30 ECTS
- Networks and Internet technologies  
30 ECTS
- Wireless communications  
30 ECTS

**ELECTIVE CREDITS  
15 ECTS**



## **Enrolment guide:**

**IMPORTANT NOTICE:** Students willing to take a **double degree or a mobility stay** should:

- Take the intensification path.
- Pass all core subjects + 3 intensification subjects during the first year.
- Should you have to enroll bridge courses during the first semester, set up a meeting with Vice-Dean Head of Master Studies (sotsdirmasters@etsetb.upc.edu) to plan the enrolment for first and second semesters.

### **First semester (30 ECTS).**

1. All bridge subjects that have been assigned to you.
2. Core subjects. Any of them except MTP.
3. None or one elective/intensification/specialization subject. Any except IT and having into account these restrictions:
  - AFOC requires to simultaneously enrol TSYS.
  - AMC requires to simultaneously enrol TSYS.
  - QSN requires to simultaneously enrol CN and OVNET.
  - WAN requires to simultaneously enrol CN.

**Second semester (30 ECTS):** The rest of core subjects except MTP + intensification subjects + elective subjects. Without restrictions.

**Third semester (30 ECTS):** MTP + intensification subjects + elective subjects. Without restrictions.

**Fourth semester (30 ECTS):** Master's thesis.

In case that bridge subjects are required, these will be enrolled in first and second semesters depending on the subject availability and the academic profile of each applicant.

Students can make [mobility stays](#) of half or full year to choose among a great number of foreign universities. Usually, the period is the third semester and/or the master's thesis during the fourth semester.

In case that the student is taking a double degree or a mobility stay in the second year, MTP and the 3 intensification subjects must be passed during first and second semesters.

## **Internships in companies:**

It is also possible to perform [internships in companies](#). In the master's framework, these internships can be curricular equivalent to 15 elective ECTS, curricular to do the master's thesis or extracurricular (do not recognize credits).

The ETSETB has a long collaboration tradition with companies. In this [link](#) you may see the companies that have offered internships during the last years.

Subjects	ECTS credits	Type
<b>COMPULSORY</b>		
Advanced Communications for Wireless Systems	5	Compulsory
Communication Networks	5	Compulsory
Electronic Instrumentation and Optoelectronics	5	Compulsory
Electronic System Design for Communications	5	Compulsory
Innovation Based Service Management	5	Compulsory
Management of Telecommunications Projects	5	Compulsory
Overlay Networks	5	Compulsory
Telecommunications Systems	5	Compulsory
Wireless Communication Links and Antennas	5	Compulsory

Subjects		ECTS credits	Type
<b>Specialisation in (Eng) Comunicacio Sense Fils 2</b>	5G Mobile Communications Systems	5	Compulsory
	Advanced Signal Processing: Tools and Applications	5	Compulsory
	Short Range Communications	5	Compulsory
	Wireless Laboratory	5	Compulsory
	Advanced Communications for Wireless Systems	5	Compulsory
	Communication Networks	5	Compulsory
	Electronic Instrumentation and Optoelectronics	5	Compulsory
	Electronic System Design for Communications	5	Compulsory
	Innovation Based Service Management	5	Compulsory
	Management of Telecommunications Projects	5	Compulsory
	Overlay Networks	5	Compulsory
<b>Specialisation in (Eng) Xarxes i Teconologies d'Internet 2</b>	Telecommunications Systems	5	Compulsory
	Wireless Communication Links and Antennas	5	Compulsory
	Network Science	5	Compulsory
	Network Security	5	Compulsory
	Quality of Service in Networks	5	Compulsory
	Web & Mobile App Development	5	Compulsory
	Advanced Communications for Wireless Systems	5	Compulsory
	Communication Networks	5	Compulsory
	Electronic Instrumentation and Optoelectronics	5	Compulsory
	Electronic System Design for Communications	5	Compulsory
	Innovation Based Service Management	5	Compulsory
<b>Specialisation in Antennas, Microwaves and Photonics for Communications and Earth Observation</b>	Management of Telecommunications Projects	5	Compulsory
	Overlay Networks	5	Compulsory
	Telecommunications Systems	5	Compulsory
	Wireless Communication Links and Antennas	5	Compulsory
	Laboratory of Antennas, Microwaves and Photonics for Communications Systems	5	Compulsory
	Microwaves and Photonics for Communications and Earth Observation	5	Compulsory
	Radar, Radionavigation and Location Systems	5	Compulsory
	Remote Sensing for Earth Observation	5	Compulsory
	Advanced Communications for Wireless Systems	5	Compulsory
	Communication Networks	5	Compulsory
	Electronic Instrumentation and Optoelectronics	5	Compulsory
<b>Specialisation in Electronics</b>	Electronic System Design for Communications	5	Compulsory
	Innovation Based Service Management	5	Compulsory
	Management of Telecommunications Projects	5	Compulsory
	Overlay Networks	5	Compulsory
	Telecommunications Systems	5	Compulsory
	Wireless Communication Links and Antennas	5	Compulsory
	Advanced Analog Circuit Techniques	5	Compulsory
	Electronics for Communications Systems	5	Compulsory
	Introduction to Microelectronic Technologies	5	Compulsory
	Sensors, Instruments and Measurement Systems	5	Compulsory
	Advanced Communications for Wireless Systems	5	Compulsory
<b>Specialisation in Fiber Optic Communications</b>	Communication Networks	5	Compulsory
	Electronic Instrumentation and Optoelectronics	5	Compulsory
	Electronic System Design for Communications	5	Compulsory
	Innovation Based Service Management	5	Compulsory
	Management of Telecommunications Projects	5	Compulsory
	Overlay Networks	5	Compulsory
	Telecommunications Systems	5	Compulsory
	Wireless Communication Links and Antennas	5	Compulsory
	Advanced Fiber Optical Communications	5	Compulsory
	Optical Fiber Telecommunications	5	Compulsory
	Optical Fiber Telecommunications Lab	5	Compulsory

Subjects	ECTS credits	Type
<b>Specialisation in Multimedia</b>	Biometrics	5 Compulsory
	Digital Image and Video Processing	5 Compulsory
	Digital Speech and Audio Processing	5 Compulsory
	Machine Learning From Data	5 Compulsory
	Advanced Communications for Wireless Systems	5 Compulsory
	Communication Networks	5 Compulsory
	Electronic Instrumentation and Optoelectronics	5 Compulsory
	Electronic System Design for Communications	5 Compulsory
	Innovation Based Service Management	5 Compulsory
	Management of Telecommunications Projects	5 Compulsory
	Overlay Networks	5 Compulsory
	Telecommunications Systems	5 Compulsory
Wireless Communication Links and Antennas	5 Compulsory	
<b>Specialisation in Networks and Internet Technologies</b>	Distributed Systems, Internet and Web Technologies	5 Compulsory
	Network Science	5 Compulsory
	Network Security	5 Compulsory
	Quality of Service in Networks	5 Compulsory
	Advanced Communications for Wireless Systems	5 Compulsory
	Communication Networks	5 Compulsory
	Electronic Instrumentation and Optoelectronics	5 Compulsory
	Electronic System Design for Communications	5 Compulsory
	Innovation Based Service Management	5 Compulsory
	Management of Telecommunications Projects	5 Compulsory
	Overlay Networks	5 Compulsory
	Telecommunications Systems	5 Compulsory
Wireless Communication Links and Antennas	5 Compulsory	
<b>Specialisation in Wireless Communications</b>	Advanced Mobile Communications	5 Compulsory
	Advanced Signal Processing: Tools and Applications	5 Compulsory
	Short Range Communications	5 Compulsory
	Wireless Laboratory	5 Compulsory
	Advanced Communications for Wireless Systems	5 Compulsory
	Communication Networks	5 Compulsory
	Electronic Instrumentation and Optoelectronics	5 Compulsory
	Electronic System Design for Communications	5 Compulsory
	Innovation Based Service Management	5 Compulsory
	Management of Telecommunications Projects	5 Compulsory
	Overlay Networks	5 Compulsory
	Telecommunications Systems	5 Compulsory
Wireless Communication Links and Antennas	5 Compulsory	
<b>OPTIONAL</b>		
Antennas and Microwaves	5	Optional
Automotive Embedded Systems	5	Optional
Basic Mathematics for Algebraic Coding Theory with Applications to Cryptography	2.5	Optional
Building Your Career. From Academia to Startups & Beyond	2.5	Optional
Coding of Audiovisual Contents	5	Optional
Cognitive Radio and Spectrum Sharing: a Key Technology of 5G Networks	2.5	Optional
Control Theory and Applications	5	Optional
Critical Thinking and Creativity	5	Optional
Data Transmission Protocols	5	Optional
Deep Learning for Computer Vision	2.5	Optional
Deep Learning for Speech and Language	2.5	Optional
Deep Learning for Vision	3	Optional
Digital Communications	5	Optional
Earth and Cosmos	5	Optional
Entrepreneurship for World Challenges	5	Optional
Fiber Optic Infrastructure for 5G Networks	2.5	Optional
Fibers and Telecommunications	3	Optional
Financial Engineering: Applications to Information Technology Projects	2.5	Optional
Future Trends in Mobile Communications	2.5	Optional
Graph Signal Processing	3	Optional
Graphene and Carbon Nanotubes Introduction and Fundamentals	2.5	Optional
Integrated Photonics	3	Optional
Interdisciplinary Innovation Project	5	Optional
Introduction to Research 1	5	Optional
Introduction to Research 2	5	Optional
Introduction to Research 3	5	Optional
Laser Applications in Remote Sensing: Lidar	3	Optional
Lidar Processing and Inversion: Applications to Remote Sensing of Physical Parameters	2.5	Optional
Lidar Remote Sensing	2.5	Optional
Marine Technology Instrumentation	5	Optional

Subjects	ECTS credits	Type
Matlab Programed Arduino for Control Applications	2.5	Optional
Microwave Photonics	2.5	Optional
Natural Language Processing with Deep Learning	3	Optional
Network Performance Analysis and Evaluation	5	Optional
Networking and Future Internet Opportunities	5	Optional
Optoelectronics and Photovoltaic Technology	3	Optional
Photonic Systems in Telecommunications: Lidar (Laser Radar)	3	Optional
Power Control and Processing	5	Optional
Power Electronic Circuits	5	Optional
Printed Circuit Board Design	2.5	Optional
Programmable Electronics	5	Optional
Quantum Information Theory	2.5	Optional
Seminar on Advanced Telecommunication Technologies	3	Optional
Seminar on Blockchain	3	Optional
Service Management with Fism	3	Optional
Signal Processing	5	Optional
Social Networks: Theory and Implementation	5	Optional
Software Architecture	5	Optional
Software-Based Digital Control Applications	2.5	Optional
Solar Cells for Dummies	2.5	Optional
Stochastic Processes	2.5	Optional
Systems Based on Microprocessors	5	Optional
Technology Asset Management	5	Optional
Telecommunication Markets	5	Optional
Telecommunication Systems Fundamentals	5	Optional
Telecommunications and Electronics Seminar	2.5	Optional
The Connected Vehicle	2.5	Optional
Transoceanic Communications	2.5	Optional
Waves and Systems	5	Optional

Subjects	ECTS credits	Type
<b>Specialisation in (Eng) Comunicacio Sense Fils 2</b>	Applied Convex Optimization	5 Optional
	Array Processing and Smart Antennas	5 Optional
	Artificial Intelligence-Enabled 5G Radio Networks	5 Optional
	Information Theory	5 Optional
	Resource Management in Wireless Communications	5 Optional
	Antennas and Microwaves	5 Optional
	Automotive Embedded Systems	5 Optional
	Basic Mathematics for Algebraic Coding Theory with Applications to Cryptography	2.5 Optional
	Building Your Career. From Academia to Startups & Beyond	2.5 Optional
	Coding of Audiovisual Contents	5 Optional
	Cognitive Radio and Spectrum Sharing: a Key Technology of 5G Networks	2.5 Optional
	Control Theory and Applications	5 Optional
	Critical Thinking and Creativity	5 Optional
	Data Transmission Protocols	5 Optional
	Deep Learning for Computer Vision	2.5 Optional
	Deep Learning for Speech and Language	2.5 Optional
	Deep Learning for Vision	3 Optional
	Digital Communications	5 Optional
	Earth and Cosmos	5 Optional
	Entrepreneurship for World Challenges	5 Optional
	Fiber Optic Infrastructure for 5G Networks	2.5 Optional
	Fibers and Telecommunications	3 Optional
	Financial Engineering: Applications to Information Technology Projects	2.5 Optional
	Future Trends in Mobile Communications	2.5 Optional
	Graph Signal Processing	3 Optional
	Graphene and Carbon Nanotubes Introduction and Fundamentals	2.5 Optional
	Integrated Photonics	3 Optional
	Interdisciplinary Innovation Project	5 Optional
	Introduction to Research 1	5 Optional
	Introduction to Research 2	5 Optional
	Introduction to Research 3	5 Optional
	Laser Applications in Remote Sensing: Lidar	3 Optional
	Lidar Processing and Inversion: Applications to Remote Sensing of Physical Parameters	2.5 Optional
	Lidar Remote Sensing	2.5 Optional
	Marine Technology Instrumentation	5 Optional
	Matlab Programed Arduino for Control Applications	2.5 Optional
	Microwave Photonics	2.5 Optional
	Natural Language Processing with Deep Learning	3 Optional
	Network Performance Analysis and Evaluation	5 Optional
	Networking and Future Internet Opportunities	5 Optional
	Optoelectronics and Photovoltaic Technology	3 Optional
	Photonic Systems in Telecommunications: Lidar (Laser Radar)	3 Optional
	Power Control and Processing	5 Optional
	Power Electronic Circuits	5 Optional
	Printed Circuit Board Design	2.5 Optional
	Programmable Electronics	5 Optional
	Quantum Information Theory	2.5 Optional
	Seminar on Advanced Telecommunication Technologies	3 Optional
	Seminar on Blockchain	3 Optional
	Service Management with Fism	3 Optional
	Signal Processing	5 Optional
	Social Networks: Theory and Implementation	5 Optional
	Software Architecture	5 Optional
	Software-Based Digital Control Applications	2.5 Optional
	Solar Cells for Dummies	2.5 Optional
	Stochastic Processes	2.5 Optional
	Systems Based on Microprocessors	5 Optional
	Technology Asset Management	5 Optional
	Telecommunication Markets	5 Optional
	Telecommunication Systems Fundamentals	5 Optional
Telecommunications and Electronics Seminar	2.5 Optional	
The Connected Vehicle	2.5 Optional	
Transoceanic Communications	2.5 Optional	
Waves and Systems	5 Optional	

Subjects	ECTS credits	Type
<b>Specialisation in (Eng) Xarxes i Teconologies d'Internet 2</b>	Cybersecurity Management	5 Optional
	Cybersecurity Usecases	5 Optional
	Data Protection	5 Optional
	Distributed Systems, Internet and Web Technologies	5 Optional
	Internet and Networked Economy	5 Optional
	Network Security - Authentication and Authorization	5 Optional
	Optimization and Artificial Intelligence Techniques in Network Management	5 Optional
	Short Range Communications	5 Optional
	Wireless Access Networks	5 Optional
	Antennas and Microwaves	5 Optional
	Automotive Embedded Systems	5 Optional
	Basic Mathematics for Algebraic Coding Theory with Applications to Cryptography	2.5 Optional
	Building Your Career. From Academia to Startups & Beyond	2.5 Optional
	Coding of Audiovisual Contents	5 Optional
	Cognitive Radio and Spectrum Sharing: a Key Technology of 5G Networks	2.5 Optional
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	Critical Thinking and Creativity	5 Optional
	Data Transmission Protocols	5 Optional
	Deep Learning for Computer Vision	2.5 Optional
	Deep Learning for Speech and Language	2.5 Optional
	Deep Learning for Vision	3 Optional
	Digital Communications	5 Optional
	Earth and Cosmos	5 Optional
	Entrepreneurship for World Challenges	5 Optional
	Fiber Optic Infrastructure for 5G Networks	2.5 Optional
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	Lidar Processing and Inversion: Applications to Remote Sensing of Physical Parameters	2.5 Optional
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	Matlab Programed Arduino for Control Applications	2.5 Optional
	Microwave Photonics	2.5 Optional
	Natural Language Processing with Deep Learning	3 Optional
	Network Performance Analysis and Evaluation	5 Optional
	Networking and Future Internet Opportunities	5 Optional
	Optoelectronics and Photovoltaic Technology	3 Optional
	Photonic Systems in Telecommunications: Lidar (Laser Radar)	3 Optional
	Power Control and Processing	5 Optional
	Power Electronic Circuits	5 Optional
	Printed Circuit Board Design	2.5 Optional
	Programmable Electronics	5 Optional
	Quantum Information Theory	2.5 Optional
	Seminar on Advanced Telecommunication Technologies	3 Optional
	Seminar on Blockchain	3 Optional
	Service Management with Fitsm	3 Optional
	Signal Processing	5 Optional
	Social Networks: Theory and Implementation	5 Optional
	Software Architecture	5 Optional
	Software-Based Digital Control Applications	2.5 Optional
	Solar Cells for Dummies	2.5 Optional
	Stochastic Processes	2.5 Optional
Systems Based on Microprocessors	5 Optional	
Technology Asset Management	5 Optional	
Telecommunication Markets	5 Optional	
Telecommunication Systems Fundamentals	5 Optional	
Telecommunications and Electronics Seminar	2.5 Optional	
The Connected Vehicle	2.5 Optional	
Transoceanic Communications	2.5 Optional	
Waves and Systems	5 Optional	

Subjects	ECTS credits	Type
<b>Specialisation in Antennas, Microwaves and Photonics for Communications and Earth Observation</b>	Advanced Mobile Communications	5 Optional
	Array Processing and Smart Antennas	5 Optional
	Beam Propagation and Fourier Optics	5 Optional
	Digital Image and Video Processing	5 Optional
	GPS and Galileo Data Processing: From Fundamentals to High Accuracy Navigation	5 Optional
	Introduction to Photonics. Optics and Lasers	5 Optional
	Laser, Terahertz and Microwave Research and Applications	5 Optional
	Machine Learning From Data	5 Optional
	Microwave Imaging for Remote Sensing	5 Optional
	Numerical Methods for Electromagnetic Engineering	5 Optional
	Optical Fiber Telecommunications	5 Optional
	Optical Remote Sensing: Lidar (Laser Radar)	5 Optional
	Antennas and Microwaves	5 Optional
	Automotive Embedded Systems	5 Optional
	Basic Mathematics for Algebraic Coding Theory with Applications to Cryptography	2.5 Optional
	Building Your Career. From Academia to Startups & Beyond	2.5 Optional
	Coding of Audiovisual Contents	5 Optional
	Cognitive Radio and Spectrum Sharing: a Key Technology of 5G Networks	2.5 Optional
	Control Theory and Applications	5 Optional
	Critical Thinking and Creativity	5 Optional
	Data Transmission Protocols	5 Optional
	Deep Learning for Computer Vision	2.5 Optional
	Deep Learning for Speech and Language	2.5 Optional
	Deep Learning for Vision	3 Optional
	Digital Communications	5 Optional
	Earth and Cosmos	5 Optional
	Entrepreneurship for World Challenges	5 Optional
	Fiber Optic Infrastructure for 5G Networks	2.5 Optional
	Fibers and Telecommunications	3 Optional
	Financial Engineering: Applications to Information Technology Projects	2.5 Optional
	Future Trends in Mobile Communications	2.5 Optional
	Graph Signal Processing	3 Optional
	Graphene and Carbon Nanotubes Introduction and Fundamentals	2.5 Optional
	Integrated Photonics	3 Optional
	Interdisciplinary Innovation Project	5 Optional
	Introduction to Research 1	5 Optional
	Introduction to Research 2	5 Optional
	Introduction to Research 3	5 Optional
	Laser Applications in Remote Sensing: Lidar	3 Optional
	Lidar Processing and Inversion: Applications to Remote Sensing of Physical Parameters	2.5 Optional
	Lidar Remote Sensing	2.5 Optional
	Marine Technology Instrumentation	5 Optional
	Matlab Programed Arduino for Control Applications	2.5 Optional
	Microwave Photonics	2.5 Optional
	Natural Language Processing with Deep Learning	3 Optional
	Network Performance Analysis and Evaluation	5 Optional
	Networking and Future Internet Opportunities	5 Optional
	Optoelectronics and Photovoltaic Technology	3 Optional
	Photonic Systems in Telecommunications: Lidar (Laser Radar)	3 Optional
	Power Control and Processing	5 Optional
	Power Electronic Circuits	5 Optional
	Printed Circuit Board Design	2.5 Optional
	Programmable Electronics	5 Optional
	Quantum Information Theory	2.5 Optional
	Seminar on Advanced Telecommunication Technologies	3 Optional
	Seminar on Blockchain	3 Optional
	Service Management with FitSM	3 Optional
	Signal Processing	5 Optional
	Social Networks: Theory and Implementation	5 Optional
	Software Architecture	5 Optional
Software-Based Digital Control Applications	2.5 Optional	
Solar Cells for Dummies	2.5 Optional	
Stochastic Processes	2.5 Optional	
Systems Based on Microprocessors	5 Optional	
Technology Asset Management	5 Optional	
Telecommunication Markets	5 Optional	
Telecommunication Systems Fundamentals	5 Optional	
Telecommunications and Electronics Seminar	2.5 Optional	
The Connected Vehicle	2.5 Optional	
Transoceanic Communications	2.5 Optional	
Waves and Systems	5 Optional	



Subjects	ECTS credits	Type
<b>Specialisation in Electronics</b>	Advanced Digital Systems	5 Optional
	Instrumentation and Sensors	5 Optional
	Micro and Nano Electronic Design	5 Optional
	Micro and Nanotechnologies	5 Optional
	Antennas and Microwaves	5 Optional
	Automotive Embedded Systems	5 Optional
	Basic Mathematics for Algebraic Coding Theory with Applications to Cryptography	2.5 Optional
	Building Your Career: From Academia to Startups & Beyond	2.5 Optional
	Coding of Audiovisual Contents	5 Optional
	Cognitive Radio and Spectrum Sharing: a Key Technology of 5G Networks	2.5 Optional
	Control Theory and Applications	5 Optional
	Critical Thinking and Creativity	5 Optional
	Data Transmission Protocols	5 Optional
	Deep Learning for Computer Vision	2.5 Optional
	Deep Learning for Speech and Language	2.5 Optional
	Deep Learning for Vision	3 Optional
	Digital Communications	5 Optional
	Earth and Cosmos	5 Optional
	Entrepreneurship for World Challenges	5 Optional
	Fiber Optic Infrastructure for 5G Networks	2.5 Optional
	Fibers and Telecommunications	3 Optional
	Financial Engineering: Applications to Information Technology Projects	2.5 Optional
	Future Trends in Mobile Communications	2.5 Optional
	Graph Signal Processing	3 Optional
	Graphene and Carbon Nanotubes Introduction and Fundamentals	2.5 Optional
	Integrated Photonics	3 Optional
	Interdisciplinary Innovation Project	5 Optional
	Introduction to Research 1	5 Optional
	Introduction to Research 2	5 Optional
	Introduction to Research 3	5 Optional
	Laser Applications in Remote Sensing: Lidar	3 Optional
	Lidar Processing and Inversion: Applications to Remote Sensing of Physical Parameters	2.5 Optional
	Lidar Remote Sensing	2.5 Optional
	Marine Technology Instrumentation	5 Optional
	Matlab Programed Arduino for Control Applications	2.5 Optional
	Microwave Photonics	2.5 Optional
	Natural Language Processing with Deep Learning	3 Optional
	Network Performance Analysis and Evaluation	5 Optional
	Networking and Future Internet Opportunities	5 Optional
	Optoelectronics and Photovoltaic Technology	3 Optional
	Photonic Systems in Telecommunications: Lidar (Laser Radar)	3 Optional
	Power Control and Processing	5 Optional
	Power Electronic Circuits	5 Optional
	Printed Circuit Board Design	2.5 Optional
	Programmable Electronics	5 Optional
	Quantum Information Theory	2.5 Optional
	Seminar on Advanced Telecommunication Technologies	3 Optional
	Seminar on Blockchain	3 Optional
	Service Management with Fism	3 Optional
	Signal Processing	5 Optional
	Social Networks: Theory and Implementation	5 Optional
	Software Architecture	5 Optional
	Software-Based Digital Control Applications	2.5 Optional
	Solar Cells for Dummies	2.5 Optional
Stochastic Processes	2.5 Optional	
Systems Based on Microprocessors	5 Optional	
Technology Asset Management	5 Optional	
Telecommunication Markets	5 Optional	
Telecommunication Systems Fundamentals	5 Optional	
Telecommunications and Electronics Seminar	2.5 Optional	
The Connected Vehicle	2.5 Optional	
Transoceanic Communications	2.5 Optional	
Waves and Systems	5 Optional	

Subjects	ECTS credits	Type
<b>Specialisation in Fiber Optic Communications</b> 5G Mobile Communications Systems	5	Optional
Advanced Signal Processing: Tools and Applications	5	Optional
Future (Inter)Net(Works)	5	Optional
Matlab: Fundamentals And/Or Applications	5	Optional
Microwaves and Photonics for Communications and Earth Observation	5	Optional
Optical Fiber Sensor Technologies	5	Optional
Photonic Integrated Devices for Telecom & Iot	5	Optional
Quality of Service in Networks	5	Optional
Antennas and Microwaves	5	Optional
Automotive Embedded Systems	5	Optional
Basic Mathematics for Algebraic Coding Theory with Applications to Cryptography	2.5	Optional
Building Your Career. From Academia to Startups & Beyond	2.5	Optional
Coding of Audiovisual Contents	5	Optional
Cognitive Radio and Spectrum Sharing: a Key Technology of 5G Networks	2.5	Optional
Control Theory and Applications	5	Optional
Critical Thinking and Creativity	5	Optional
Data Transmission Protocols	5	Optional
Deep Learning for Computer Vision	2.5	Optional
Deep Learning for Speech and Language	2.5	Optional
Deep Learning for Vision	3	Optional
Digital Communications	5	Optional
Earth and Cosmos	5	Optional
Entrepreneurship for World Challenges	5	Optional
Fiber Optic Infrastructure for 5G Networks	2.5	Optional
Fibers and Telecommunications	3	Optional
Financial Engineering: Applications to Information Technology Projects	2.5	Optional
Future Trends in Mobile Communications	2.5	Optional
Graph Signal Processing	3	Optional
Graphene and Carbon Nanotubes Introduction and Fundamentals	2.5	Optional
Integrated Photonics	3	Optional
Interdisciplinary Innovation Project	5	Optional
Introduction to Research 1	5	Optional
Introduction to Research 2	5	Optional
Introduction to Research 3	5	Optional
Laser Applications in Remote Sensing: Lidar	3	Optional
Lidar Processing and Inversion: Applications to Remote Sensing of Physical Parameters	2.5	Optional
Lidar Remote Sensing	2.5	Optional
Marine Technology Instrumentation	5	Optional
Matlab Programed Arduino for Control Applications	2.5	Optional
Microwave Photonics	2.5	Optional
Natural Language Processing with Deep Learning	3	Optional
Network Performance Analysis and Evaluation	5	Optional
Networking and Future Internet Opportunities	5	Optional
Optoelectronics and Photovoltaic Technology	3	Optional
Photonic Systems in Telecommunications: Lidar (Laser Radar)	3	Optional
Power Control and Processing	5	Optional
Power Electronic Circuits	5	Optional
Printed Circuit Board Design	2.5	Optional
Programmable Electronics	5	Optional
Quantum Information Theory	2.5	Optional
Seminar on Advanced Telecommunication Technologies	3	Optional
Seminar on Blockchain	3	Optional
Service Management with FitSM	3	Optional
Signal Processing	5	Optional
Social Networks: Theory and Implementation	5	Optional
Software Architecture	5	Optional
Software-Based Digital Control Applications	2.5	Optional
Solar Cells for Dummies	2.5	Optional
Stochastic Processes	2.5	Optional
Systems Based on Microprocessors	5	Optional
Technology Asset Management	5	Optional
Telecommunication Markets	5	Optional
Telecommunication Systems Fundamentals	5	Optional
Telecommunications and Electronics Seminar	2.5	Optional
The Connected Vehicle	2.5	Optional
Transoceanic Communications	2.5	Optional
Waves and Systems	5	Optional

Subjects	ECTS credits	Type
<b>Specialisation in Multimedia</b>	Advanced Human Language Technologies	5 Optional
	Computer Vision with Deep Learning	5 Optional
	Cybersecurity Management	5 Optional
	Deep Learning for Artificial Intelligence	5 Optional
	Quality of Service in Networks	5 Optional
	Speech and Language Processing with Deep Learning	5 Optional
	Web & Mobile App Development	5 Optional
	Antennas and Microwaves	5 Optional
	Automotive Embedded Systems	5 Optional
	Basic Mathematics for Algebraic Coding Theory with Applications to Cryptography	2.5 Optional
	Building Your Career. From Academia to Startups & Beyond	2.5 Optional
	Coding of Audiovisual Contents	5 Optional
	Cognitive Radio and Spectrum Sharing: a Key Technology of 5G Networks	2.5 Optional
	Control Theory and Applications	5 Optional
	Critical Thinking and Creativity	5 Optional
	Data Transmission Protocols	5 Optional
	Deep Learning for Computer Vision	2.5 Optional
	Deep Learning for Speech and Language	2.5 Optional
	Deep Learning for Vision	3 Optional
	Digital Communications	5 Optional
	Earth and Cosmos	5 Optional
	Entrepreneurship for World Challenges	5 Optional
	Fiber Optic Infrastructure for 5G Networks	2.5 Optional
	Fibers and Telecommunications	3 Optional
	Financial Engineering: Applications to Information Technology Projects	2.5 Optional
	Future Trends in Mobile Communications	2.5 Optional
	Graph Signal Processing	3 Optional
	Graphene and Carbon Nanotubes Introduction and Fundamentals	2.5 Optional
	Integrated Photonics	3 Optional
	Interdisciplinary Innovation Project	5 Optional
	Introduction to Research 1	5 Optional
	Introduction to Research 2	5 Optional
	Introduction to Research 3	5 Optional
	Laser Applications in Remote Sensing: Lidar	3 Optional
	Lidar Processing and Inversion: Applications to Remote Sensing of Physical Parameters	2.5 Optional
	Lidar Remote Sensing	2.5 Optional
	Marine Technology Instrumentation	5 Optional
	Matlab Programed Arduino for Control Applications	2.5 Optional
	Microwave Photonics	2.5 Optional
	Natural Language Processing with Deep Learning	3 Optional
	Network Performance Analysis and Evaluation	5 Optional
	Networking and Future Internet Opportunities	5 Optional
	Optoelectronics and Photovoltaic Technology	3 Optional
	Photonic Systems in Telecommunications: Lidar (Laser Radar)	3 Optional
	Power Control and Processing	5 Optional
	Power Electronic Circuits	5 Optional
	Printed Circuit Board Design	2.5 Optional
	Programmable Electronics	5 Optional
	Quantum Information Theory	2.5 Optional
	Seminar on Advanced Telecommunication Technologies	3 Optional
Seminar on Blockchain	3 Optional	
Service Management with Fism	3 Optional	
Signal Processing	5 Optional	
Social Networks: Theory and Implementation	5 Optional	
Software Architecture	5 Optional	
Software-Based Digital Control Applications	2.5 Optional	
Solar Cells for Dummies	2.5 Optional	
Stochastic Processes	2.5 Optional	
Systems Based on Microprocessors	5 Optional	
Technology Asset Management	5 Optional	
Telecommunication Markets	5 Optional	
Telecommunication Systems Fundamentals	5 Optional	
Telecommunications and Electronics Seminar	2.5 Optional	
The Connected Vehicle	2.5 Optional	
Transoceanic Communications	2.5 Optional	
Waves and Systems	5 Optional	

Subjects	ECTS credits	Type
<b>Specialisation in Networks and Internet Technologies</b>	Cybersecurity Management	5 Optional
	Cybersecurity Usecases	5 Optional
	Data Protection	5 Optional
	Internet and Networked Economy	5 Optional
	Network Security - Authentication and Authorization	5 Optional
	Short Range Communications	5 Optional
	Wireless Access Networks	5 Optional
	Antennas and Microwaves	5 Optional
	Automotive Embedded Systems	5 Optional
	Basic Mathematics for Algebraic Coding Theory with Applications to Cryptography	2.5 Optional
	Building Your Career. From Academia to Startups & Beyond	2.5 Optional
	Coding of Audiovisual Contents	5 Optional
	Cognitive Radio and Spectrum Sharing: a Key Technology of 5G Networks	2.5 Optional
	Control Theory and Applications	5 Optional
	Critical Thinking and Creativity	5 Optional
	Data Transmission Protocols	5 Optional
	Deep Learning for Computer Vision	2.5 Optional
	Deep Learning for Speech and Language	2.5 Optional
	Deep Learning for Vision	3 Optional
	Digital Communications	5 Optional
	Earth and Cosmos	5 Optional
	Entrepreneurship for World Challenges	5 Optional
	Fiber Optic Infrastructure for 5G Networks	2.5 Optional
	Fibers and Telecommunications	3 Optional
	Financial Engineering: Applications to Information Technology Projects	2.5 Optional
	Future Trends in Mobile Communications	2.5 Optional
	Graph Signal Processing	3 Optional
	Graphene and Carbon Nanotubes Introduction and Fundamentals	2.5 Optional
	Integrated Photonics	3 Optional
	Interdisciplinary Innovation Project	5 Optional
	Introduction to Research 1	5 Optional
	Introduction to Research 2	5 Optional
	Introduction to Research 3	5 Optional
	Laser Applications in Remote Sensing: Lidar	3 Optional
	Lidar Processing and Inversion: Applications to Remote Sensing of Physical Parameters	2.5 Optional
	Lidar Remote Sensing	2.5 Optional
	Marine Technology Instrumentation	5 Optional
	Matlab Programed Arduino for Control Applications	2.5 Optional
	Microwave Photonics	2.5 Optional
	Natural Language Processing with Deep Learning	3 Optional
	Network Performance Analysis and Evaluation	5 Optional
	Networking and Future Internet Opportunities	5 Optional
	Optoelectronics and Photovoltaic Technology	3 Optional
	Photonic Systems in Telecommunications: Lidar (Laser Radar)	3 Optional
	Power Control and Processing	5 Optional
	Power Electronic Circuits	5 Optional
	Printed Circuit Board Design	2.5 Optional
	Programmable Electronics	5 Optional
	Quantum Information Theory	2.5 Optional
	Seminar on Advanced Telecommunication Technologies	3 Optional
Seminar on Blockchain	3 Optional	
Service Management with Fitsm	3 Optional	
Signal Processing	5 Optional	
Social Networks: Theory and Implementation	5 Optional	
Software Architecture	5 Optional	
Software-Based Digital Control Applications	2.5 Optional	
Solar Cells for Dummies	2.5 Optional	
Stochastic Processes	2.5 Optional	
Systems Based on Microprocessors	5 Optional	
Technology Asset Management	5 Optional	
Telecommunication Markets	5 Optional	
Telecommunication Systems Fundamentals	5 Optional	
Telecommunications and Electronics Seminar	2.5 Optional	
The Connected Vehicle	2.5 Optional	
Transoceanic Communications	2.5 Optional	
Waves and Systems	5 Optional	

Subjects		ECTS credits	Type	
<b>Specialisation in Wireless Communications</b>	Applied Convex Optimization	5	Optional	
	Array Processing and Smart Antennas	5	Optional	
	Artificial Intelligence-Enabled 5G Radio Networks	5	Optional	
	Information Theory	5	Optional	
	Resource Management in Wireless Communications	5	Optional	
	Antennas and Microwaves	5	Optional	
	Automotive Embedded Systems	5	Optional	
	Basic Mathematics for Algebraic Coding Theory with Applications to Cryptography	2.5	Optional	
	Building Your Career. From Academia to Startups & Beyond	2.5	Optional	
	Coding of Audiovisual Contents	5	Optional	
	Cognitive Radio and Spectrum Sharing: a Key Technology of 5G Networks	2.5	Optional	
	Control Theory and Applications	5	Optional	
	Critical Thinking and Creativity	5	Optional	
	Data Transmission Protocols	5	Optional	
	Deep Learning for Computer Vision	2.5	Optional	
	Deep Learning for Speech and Language	2.5	Optional	
	Deep Learning for Vision	3	Optional	
	Digital Communications	5	Optional	
	Earth and Cosmos	5	Optional	
	Entrepreneurship for World Challenges	5	Optional	
	Fiber Optic Infrastructure for 5G Networks	2.5	Optional	
	Fibers and Telecommunications	3	Optional	
	Financial Engineering: Applications to Information Technology Projects	2.5	Optional	
	Future Trends in Mobile Communications	2.5	Optional	
	Graph Signal Processing	3	Optional	
	Graphene and Carbon Nanotubes Introduction and Fundamentals	2.5	Optional	
	Integrated Photonics	3	Optional	
	Interdisciplinary Innovation Project	5	Optional	
	Introduction to Research 1	5	Optional	
	Introduction to Research 2	5	Optional	
	Introduction to Research 3	5	Optional	
	Laser Applications in Remote Sensing: Lidar	3	Optional	
	Lidar Processing and Inversion: Applications to Remote Sensing of Physical Parameters	2.5	Optional	
	Lidar Remote Sensing	2.5	Optional	
	Marine Technology Instrumentation	5	Optional	
	Matlab Programed Arduino for Control Applications	2.5	Optional	
	Microwave Photonics	2.5	Optional	
	Natural Language Processing with Deep Learning	3	Optional	
	Network Performance Analysis and Evaluation	5	Optional	
	Networking and Future Internet Opportunities	5	Optional	
	Optoelectronics and Photovoltaic Technology	3	Optional	
	Photonic Systems in Telecommunications: Lidar (Laser Radar)	3	Optional	
	Power Control and Processing	5	Optional	
	Power Electronic Circuits	5	Optional	
	Printed Circuit Board Design	2.5	Optional	
	Programmable Electronics	5	Optional	
	Quantum Information Theory	2.5	Optional	
	Seminar on Advanced Telecommunication Technologies	3	Optional	
	Seminar on Blockchain	3	Optional	
	Service Management with Fism	3	Optional	
	Signal Processing	5	Optional	
	Social Networks: Theory and Implementation	5	Optional	
	Software Architecture	5	Optional	
	Software-Based Digital Control Applications	2.5	Optional	
	Solar Cells for Dummies	2.5	Optional	
	Stochastic Processes	2.5	Optional	
	Systems Based on Microprocessors	5	Optional	
	Technology Asset Management	5	Optional	
	Telecommunication Markets	5	Optional	
	Telecommunication Systems Fundamentals	5	Optional	
	Telecommunications and Electronics Seminar	2.5	Optional	
	The Connected Vehicle	2.5	Optional	
	Transoceanic Communications	2.5	Optional	
	Waves and Systems	5	Optional	
	<b>PROJECT</b>			
		Master's Thesis	30	Project
	<b>Specialisation in (Eng) Comunicacio Sense Fils 2</b>	Master's Thesis	30	Project

Subjects		ECTS credits	Type
<b>Specialisation in (Eng) Xarxes i Teconologies d'Internet 2</b>	Master's Thesis	30	Project
<b>Specialisation in Antennas, Microwaves and Photonics for Communications and Earth Observation</b>	Master's Thesis	30	Project
<b>Specialisation in Electronics</b>	Master's Thesis	30	Project
<b>Specialisation in Fiber Optic Communications</b>	Master's Thesis	30	Project
<b>Specialisation in Multimedia</b>	Master's Thesis	30	Project
<b>Specialisation in Networks and Internet Technologies</b>	Master's Thesis	30	Project
<b>Specialisation in Wireless Communications</b>	Master's Thesis	30	Project