

# School of Telecommunications Engineering of Barcelona (ETSETB)

## Degree in Telecommunications Engineering (first and second cycles)

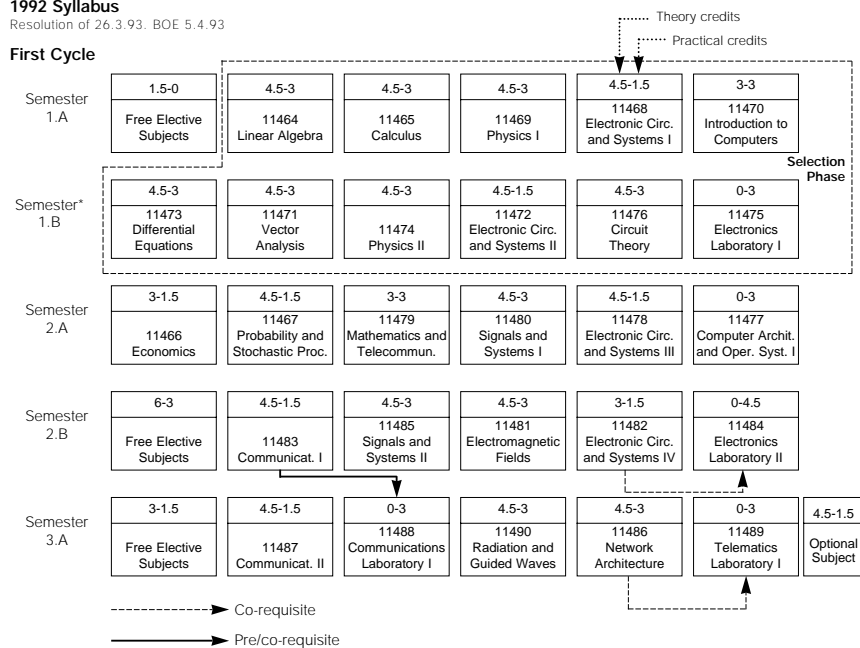
<b>Pre-enrolment code</b>	F302
<b>Qualification type</b>	Official, Resolution of 26/2/93, BOE of 5/4/93
<b>Optional subjects preferred from secondary education</b>	Line subjects: Mathematics; Physics; Electrotechnics Optional subjects: Further Mathematics; Electronics; Statistics; Computer Science
<b>Secondary school subject lines in which special training is required</b>	Mathematics and Physics
<b>Minimum entrance grade (2001-2002 academic year)</b>	PAAU: 7.12
<b>Number of entry places</b>	First cycle: 450 Second cycle: 60
<b>Average cost per semester</b>	414.38 €
<b>Duration and contact hours</b>	Five academic years, 375 credits. 1 credit is equivalent to 10 class hours
<b>Timetable</b>	There are both morning and afternoon timetables
<b>Teaching objectives</b>	To train engineers with a general knowledge of information technologies and specialists in leading-edge technologies (optional subjects). To provide a solid base in mathematics and science. To train young degreeholders with creativity, initiative, a critical spirit, good work habits, communication skills and a knowledge of engineering work methods.
<b>Course structure</b>	Semestral structure. There are a total of 375 credits divided in two cycles of five semesters of 187.5 credits each.
<b>Selection phase: Duration and subjects in which special training is required</b>	Selection phase: Before starting the selection phase, an introductory course is offered to reinforce the knowledge of students in physics and mathematics. Duration and subjects in which a high level of attainment is required: The course lasts for one academic year and consists of the following subjects: Calculus, Algebra, Differential Equations, Vectorial Analysis, Physics I and II, Electronic Circuits and Systems I and II, Introduction to Computers and Circuit Theory.
<b>Optional specialisation areas</b>	Majors in telematics and communications.
<b>Career options</b>	Research and development, design, production, operation and maintenance, commercialisation, management and teaching within the information and communication technologies field.
<b>Admission to UPC second cycle courses</b>	The first cycle of the Degree in Telecommunications Engineering provides direct admission to the Degree in Electronic Engineering and the Degree in Occupational Hazard Prevention. Admission, with bridging courses, to: Degree in Automatic Control and Industrial Electronics; Degree in Industrial Scheduling

## Degree in Telecommunications Engineering

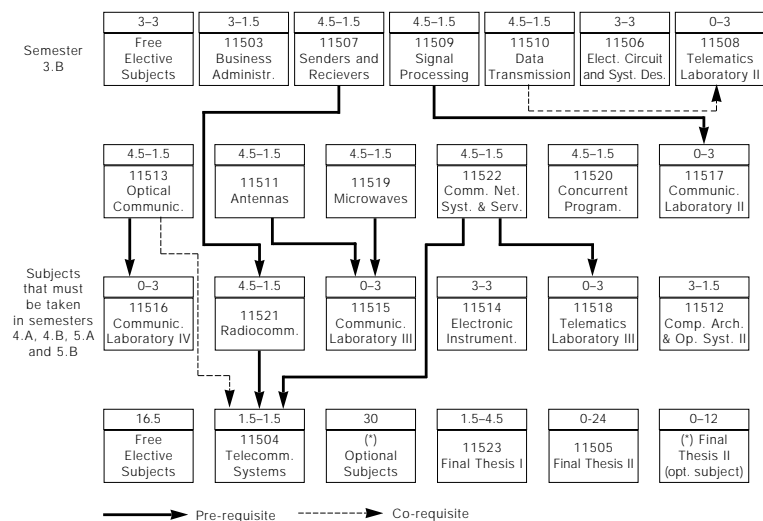
### 1992 Syllabus

Resolution of 26.3.93. BOE 5.4.93

#### First Cycle



#### Second Cycle



(\*) These optional subject credits may be taken in communications, telematics, or any other specialisation.

# School of Telecommunications Engineering of Barcelona (ETSETB)

## Degree in Electronic Engineering (second cycle)

<b>Qualification type</b>	Official, Resolution of 26/2/93, BOE of 5/4/93
<b>Admission requirements</b>	Degrees with direct admission: First cycle of Degree in Telecommunications Engineering, Diploma in Industrial Electronics, Diploma in Telecommunications Systems and Diploma in Electronics for Telecommunications Systems. Qualifications which require bridging courses: First cycle of Degree in Informatics Engineering; First cycle of Degree in Industrial Engineering; Diploma in Electrical Engineering; Diploma in Computer Systems; Diploma in Telematics; Diploma in Image and Sound for Telecommunications; First cycle of Degree in Physics.
<b>Number of entry places</b>	75
<b>Average cost per semester</b>	414.38 €
<b>Duration and contact hours</b>	Two academic years, 150 credits. 1 credit is equivalent to 10 class hours
<b>Timetable</b>	Afternoons
<b>Teaching objectives</b>	To train engineers with a general knowledge of information technologies and specialists in leading-edge technologies (optional subjects). To provide a solid base in mathematics and science. To train young degreeholders with creativity, initiative, a critical spirit, good work habits, communication skills and a knowledge of engineering work methods.
<b>Course structure</b>	Second cycle studies, with a semestral structure and a total of 150 credits divided into four semesters.
<b>Career options</b>	Basic electronic technology (optoelectronics, microelectronics, discrete components). Electronic circuits, equipment and systems. Digital and mixed design. Electronic instrumentation. Consumer electronics. Control systems (robotics, automation). Data acquisition systems (intelligent sensors). Electromagnetic compatibility. Freelance. Research and development. Education.

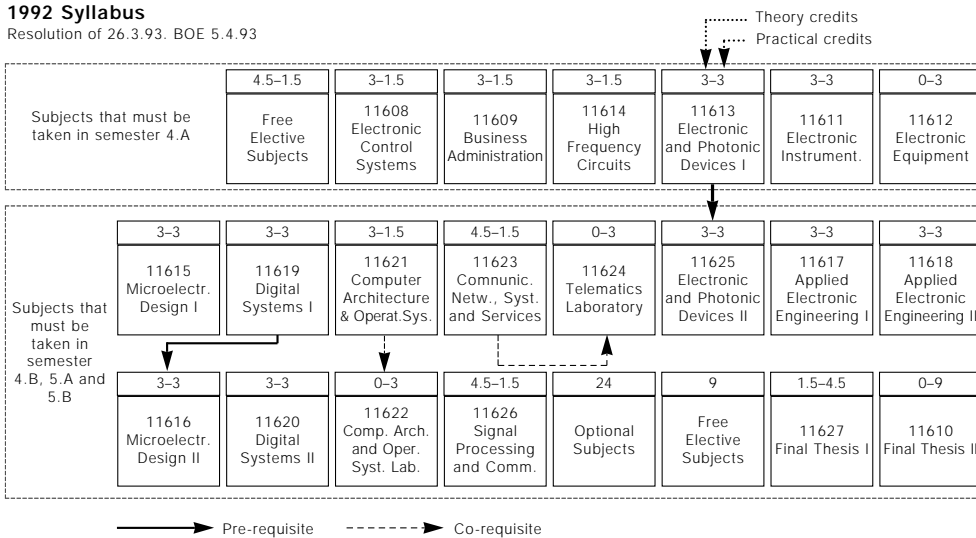
## Degree in Electronic Engineering (second cycle/semi-distance)

<b>Qualification type</b>	Official, Resolution of 26/2/93, BOE of 5/4/93
<b>Admission requirements</b>	Degrees with direct admission: First cycle of Degree in Telecommunications Engineering, Diploma in Industrial Electronics, Diploma in Telecommunications Systems and Diploma in Electronics for Telecommunications Systems. Qualifications which require bridging courses: First cycle of Degree in Informatics Engineering; First cycle of Degree in Industrial Engineering; Diploma in Electrical Engineering; Diploma in Computer Systems; Diploma in Telematics; Diploma in Image and Sound for Telecommunications; First cycle of Degree in Physics.
<b>Number of entry places</b>	25
<b>Average cost per semester</b>	414.38 €
<b>Duration and contact hours</b>	Three academic years, 150 credits. 1 credit is equivalent to 10 class hours
<b>Timetable</b>	Afternoon timetables for subjects with on-site teaching and afternoon laboratories for semi-distance subjects.
<b>Teaching objectives</b>	In addition to the objectives of the on-site teaching qualification, this qualification also includes the objective of facilitating the extension of continuing education to those professionals who, due to the nature of their work, are unable to undertake on-site studies.
<b>Course structure</b>	Second cycle studies, with a semestral structure and a total of 150 credits divided into four semesters. For semi-distance subjects, distance teaching is used for theoretical credits, teamwork is used for application credits, and on-site teaching is used in the case of laboratory credits.
<b>Career options</b>	Basic electronic technology (optoelectronics, microelectronics, discrete components). Electronic circuits, equipment and systems. Digital and mixed design. Electronic instrumentation. Consumer electronics. Control systems (robotics, automation). Data acquisition systems (intelligent sensors). Electromagnetic compatibility. Freelance. Research and development. Education.

### Degree in Electronic Engineering

#### 1992 Syllabus

Resolution of 26.3.93. BOE 5.4.93



# School of Telecommunications Engineering of Barcelona (ETSETB) Faculty of Mathematics and Statistics (FME)

## Double Degree in Telecommunications and Mathematics

<b>Pre-enrolment code</b>	G306 (Degree in Mathematics) / F302 (Degree in Telecommunications Engineering)
<b>Qualification type</b>	Degree in Mathematics. Official, Resolution of 22/4/93, BOE of 20/5/93 Degree in Telecommunications Engineering Official, Resolution of 26/2/93, BOE of 5/4/93
<b>Admission requirements</b>	Attain one of the qualifications cited and gain admission under the Special Curriculum by a selection committee.
<b>Optional subjects preferred from secondary education</b>	The same as recommended for the two qualifications.
<b>Secondary school subject lines in which special training is required</b>	Mathematics, Physics, Computer Science, Electronics
<b>Minimum entrance grade (2001-2002 academic year)</b>	Degree in Mathematics: PAAU: 7.38 Degree in Telecommunications Engineering PAAU: 7.12
<b>Number of entry places</b>	10
<b>Average cost per semester</b>	414.38 €
<b>Duration and contact hours</b>	Six academic years, 448.5 credits. 1 credit is equivalent to 10 class hours
<b>Timetable</b>	Mornings (FME) and afternoons (ETSETB)
<b>Teaching objectives</b>	To form a nucleus of graduates who possess both a solid technological base and a deep understanding of the underlying mathematical principles of the field, including the teaching objectives of both qualifications, facilitating a synergy between knowledge of information and communication technologies and advanced mathematical training.
<b>Course structure</b>	Selection phase: First academic year The first and second cycles correspond to those set for each qualification. Except for assimilated subjects, students must take all the core and compulsory subjects of the two qualifications as part of a six-year curriculum.
<b>Selection phase: Duration and subjects in which special training is required</b>	Selection phase: The first academic year. Duration and subjects in which special training is required: Linear Algebra, Calculus 1 and 2, Algebraic Computation, Physics 1 and 2, Introduction to Computers, Circuit Theory, Electronic Circuits and Systems 1 and 2, Electronics Laboratory 1
<b>Optional specialisation areas</b>	Included in the Special Curriculum for double degrees (compulsory subjects from one syllabus are recognised as optional subjects under a different syllabus).
<b>Career options</b>	All areas covered by the Degree in Mathematics and the Degree in Telecommunications Engineering, especially those which require professionals with more advanced levels of scientific and technological training.
<b>Admission to UPC second cycle courses</b>	Those included in each qualification.

## Syllabus

1A	Linear Algebra (7.5)	Calculus 1 (7.5)	Introduction to Computers (6)	Physics 1 (7.5)	Electronic Circuits and Systems 1 (6)			34.5 credits
1B	Algebraic Computation (7.5)	Calculus 2 (7.5)	Circuit Theory (7.5)	Physics 2 (7.5)	Electronic Circuits and Systems 2 (6)	Electronics Laboratory 1 (3)		39 credits
2A	Introduction to Mathematics for Engineering (7.5)	Calculus 3 (7.5)	Numerical Methods 1 (7.5)	Probability and Statistics (7.5)	Geometry (7.5)			37.5 credits
2B	Topology (7.5)	Real Analysis (7.5)	Computer Architecture and Operating Systems 1 (6)	Signals and Systems 1 (7.5)	Electronic Circuits and Systems 3 (4.5)	Economics (4.5)		37.5 credits
3A	Differential Equations 1 (7.5)	Numerical Methods 2 (7.5)	Communications 1 (6)	Signals and Systems 2 (7.5)	Electronic Circuits and Systems 4 (4.5)	Electromagnetic Fields (7.5)		40.5 credits
3B	Operations Research (7.5)	Statistical Inference (7.5)	Communications 2 (6)	Communications Laboratory 1 (3)	Network Architecture (7.5)	Electronics Laboratory 2 (4.5)	Telematics Laboratory 1 (3)	39 credits
4A	Complex Analysis (7.5)	Differential Geometry 1 (7.5)	Signal Processing (6)	Electronic Circuit and Systems Design (6)	Radiation and Guided Waves (7.5)	Data Transmission (6)		40.5 credits
4B	Differential Equations 2 (7.5)	Numerical Methods 3 (7.5)	Antennas (6)	Senders and Receivers (6)	Microwaves (6)	Communications Laboratory 2 (3)	Telematics Laboratory 2 (3)	39 credits
5A	Abstract Algebra (7.5)	Business Administration (4.5)	Optical Communications (6)	Radiocommu- nications (6)	Communication Networks, Systems and Services (6)	Electronic Instrumentation (6)	Communications Laboratory 3 (3)	39 credits
5B	Algebraic Topology (7.5)	Functional Analysis (7.5)	Differential Geometry 2 (7.5)	Communications Laboratory 4 (3)	Telematics Laboratory 3 (3)			28.5 credits
6A	FME Optional Subject 1 (7.5)	FME Optional Subject 2 (7.5)	Final Thesis 1 (6)	Concurrent Programming (6)	Telecommunication Systems (3)	Computer Architecture and Operating Systems 2 (4.5)		34.5 credits
6B	Final Thesis 2 (24)	ETSETB Optional Subject 1 (6)	ETSETB Optional Subject 2 (6)					36 credits