

Label	EUR-ACE®
Higher Education Institution	Universidad Politécnica de Madrid, Escuela Técnica Superior de Ingenieros de Telecomunicación
Country	Spain
State/Province	Madrid
Name of the Programme	Telecommunication Technologies and Services Engineering
Degree Awarded	Bachelor
Qualification Level	First Cycle Degree
Programme Objectives; Profile	<p><i>This degree will enable the graduate to exercise the regulated profession of Ingeniero Técnico de Telecomunicación (as established in Order CIN / 352/2009), in a specialty function of the itinerary followed by the student. There are four itineraries that are taken in the fourth year: Telecommunication Systems, Telematics, Electronic Systems and Sound and Image. All graduates of this degree will meet the requirements to access the studies of Máster Universitario en Ingeniería de Telecomunicación established in section 4.2.1 of Order CIN / 355/2009 which establishes the requirements for the verification of the university degrees that qualify for the exercise as Ingeniero de Telecomunicación.</i></p> <ul style="list-style-type: none"> • <i>Objective 1: Ability to write, develop and sign projects in the field of telecommunications engineering, according to the knowledge acquired as provided in paragraph 5 of the order mentioned, the design and development or operation of networks, services and applications for telecommunications and electronics.</i> • <i>Objective 2: Knowledge, comprehension and ability to apply the necessary legislation in the development of the profession of Ingeniero Técnico de Telecomunicación and to apply the specifications, regulations and mandatory standards.</i> • <i>Objective 3: Knowledge of foundations and technologies that will enable you to learn new methods and technologies as providing versatility to adapt to new situations.</i> • <i>Objective 4: Ability to solve problems with initiative, decision making, creativity, and to</i>

	<p><i>communicate and transmit knowledge, abilities and skills, understanding the ethical and professional responsibility of the activity of a Ingeniero Técnico de Telecomunicación.</i></p> <ul style="list-style-type: none"> • <i>Objective 5: Knowledge to perform measurements, calculations, assessments, appraisals, surveys, studies, reports, scheduling and similar work in their specific field of telecommunication.</i> • <i>Objective 6: Ability to use specifications, regulations and mandatory standards.</i> • <i>Objective 7: Ability to analyze and assess the social and environmental impact of technical solutions.</i> • <i>Objective 8: to Know and apply basic principles of economics and human resource management, organization and project planning, as well as legislation, regulation and standardization in telecommunications.</i> • <i>Objective 9: Ability to work in a multidisciplinary group and in a multilingual environment and communicate, both in writing and orally: knowledge, procedures, results and ideas related to telecommunications and electronics.</i>
Programme Duration	8 semesters
Total Number of ECTS Credits Awarded	240 ECTS
Brief Description of the Programme	<p><i>M1 – Mathematics 28.5 ECTS</i> <i>M2 – Physics 24 ECTS</i> <i>M3 – Business 4.5 ECTS</i> <i>M4 – Informatics 6 ECTS</i> <i>M5 – Electronics 15 ECTS</i> <i>M6 – Signals and Communication 18 ECTS</i> <i>M7 –Transmission Systems 16.5 ECTS</i> <i>M8 – Networks and Services 15 ECTS</i> <i>M9 – Specific Technology on Telecommunication Systems (specialization) 51 ECTS</i> <i>M10 – Specific Technology on Telematics (specialization) 51 ECTS</i> <i>M11 – Specific Technology on Electronic Systems (specialization) 48 ECTS</i> <i>M12 – Specific Technology on Sound and Image (specialization) 48 ECTS</i> <i>M13 – Complements on Telecommunication 7.5 ECTS</i></p>

	<p>M14 – English Language 6 ECTS</p> <p>M15 – Elective 15 ECTS</p> <p>M16 – Bachelor's Thesis 12 ECTS</p>
Examples of Very Good Practice	<ul style="list-style-type: none"> • ETSIT-UPM has been the first School of Telecommunication Engineering in Spain to be accredited by ABET (Accreditation Board for Engineering and Technology) in Master and Degree levels. This accreditation equates the graduates of our Degree with the graduates of the main universities in the United States of America. • The faculty has an extensive teaching experience (with an average of over three 5-year periods of teaching merit) and researcher (36 research groups recognized by the UPM, which have participated in more than 100 projects with international funding and 1000 national). Teachers annually publish no less than 500 articles in international journals. The professors of the degree develop a great activity in projects of educational innovation (there are 11 groups of innovation recognized by UPM) that improve the teaching methodologies and favor the acquisition of the competences of our students. • Employers appreciate the skills acquired by our graduates as outstanding, and each year 30% of our students take paid internships or jobs before completing their undergraduate studies. • The international mobility offer includes more than 100 bilateral agreements with universities in more than 30 countries, offering up to 300 mobility vacancies each year. • The available material resources are exceptional: a library that opens seven days a week, more than 600 places in laboratories, and so on.
Accredited without / with Adjustment Requirements	Accredited with Adjustment Requirements
Adjustment Requirements	<p>Requirement 1: Fully implement the Internal Quality Assurance System in such a way that:</p> <ul style="list-style-type: none"> - The IQAS improvement recommendations contained in the monitoring reports are met. - Specific reports on the degree must be obtained, allowing the analysis of results that facilitate the process of monitoring, modifying and accrediting the degree, guaranteeing its continuous improvement. - Establish a procedure to obtain, based on all the results obtained from the Internal Quality Assurance System, a critical and differentiated

	<p><i>analysis of the results by courses, as well as to define proposals for improvement on the teaching-learning process, if needed.</i></p> <p><i>Requirement 2: It is necessary to improve, from the formal point of view, the coherence between the objectives of the training program in tables G1 and G2 and the contents of the learning guides.</i></p> <p><i>Requirement 3: The teaching methods and the form of evaluation of the subjects must be analyzed and adapted so that the learning outcomes envisaged by ENAEE, especially those related to transversal competences, are verified and their acquisition guaranteed for all students.</i></p>
<p>Accredited by</p>	<p>ANECA-IIE</p>
<p>Accredited</p>	<p><i>From 13 march 2017 to 13 march 2019</i></p>