

TELECOMMUNICATIONS SYSTEMS  
ENGINEERING B. Eng.

ELECTIVE COURSES TYPE  
INTERNSHIP AND MOBILITY

**Table of Contents**

Internship ..... 3  
Mobility ..... 5

**Year 2015/16**

<b>Course Name:</b>	Internship	<b>Course Code:</b>	595030375; 595030376; 595030377; 595030378 595030379
<b>Year:</b>	3 / 4	<b>Semester:</b>	6, 7, 8
<b>Credits (ECTS):</b>	3; 4,5; 6; 9; 12	<b>Credit Hours:</b>	2; 3; 4; 6; 8
<b>Area:</b>	Elective	<b>Type:</b>	Elective / Internship
<b>Term:</b>	Fall / Spring	<b>Language:</b>	Spanish / English
<b>Prerequisites / Co-requisites:</b>		120 ECTS passed	
<b>Coordinator:</b>		Vice Dean International Relationships	
<b>Bachelor Engineering Program:</b>		Telecommunication Systems Engineering Communications Electronics Engineering Sound and Image Engineering Telematics Engineering	

### ABET Student Outcomes

- (b) An ability to design and conduct experiments, as well as to analyze and interpret data
- (c) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- (d) An ability to function on multidisciplinary teams
- (e) An ability to identify, formulate, and solve engineering problems
- (f) An understanding of professional and ethical responsibility
- (g) An ability to communicate effectively
- (h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- (i) A recognition of the need for, and an ability to engage in life-long learning
- (j) A knowledge of contemporary issues
- (k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

### Study Outcomes (according to the Spanish program definition)

- CG 02 Ability to search and select information, develop critical thinking and produce and defend arguments within the area.
- CG 04 Ability to abstract, analyze, and synthesize, and to solve problems.
- CG 05 Ability for teamwork in multidisciplinary environments.
- CG 07 Ability to design, manage, and direct projects.
- CG 10 Ability to handle specifications, rules and regulations and to apply them in the practice of the profession.
- CB 05 Acceptable knowledge of the concept of company, institutional and juridical frame of the company. Organization and management of companies.

- CE TEL02 Ability to use communication and computer applications (office automation, databases, advanced calculus, project management, visualization...) to support the development and utilization of networks, services and telecommunication and electronics applicatiectronics.
- CE TEL06 Ability to design, deploy, organize and manage telecommunication networks, systems, services and infrastructures in residential (home, city and digital communities), business or institutional contexts, including setup, continuous improvement, and understantuous improvement, as well as knowing their economic and social impact.
- CE TEL08 Knowledge and use of the principles of programming in telecommunication networks, systems and services.
- CE TEL10 Ability to analyze and design combinational and sequential circuits, synchronous and asynchronous, and to use microprocessors and integrated circuits.
- CE CE Will be include specific competences that were developing during the internship period.

**Specific outcomes of instruction (according to the Spanish program definition)**

- 1.- Contribute to the students integral formation as complement to heir theoretical and practical learning
- 2.- Facilitate knowledge of the appropriate methodology to the professional reality in which students will have to operate, contrasting and applying the knowledge acquired
- 3.- Promote the development of technical, methodological, personal and participatory skills.
- 4.- Get a practical experience that facilitates the insertion in the labour market and improve their future employability..
- 5.- Promote the values of innovation, creativity and entrepreneurship.
- 6.- Contribute to the integral formation of the students as complement to their theoretical and practical learning.
- 7.- Facilitate knowledge of the appropriate methodology to the professional reality in which students will have to operate, contrasting and applying the knowledge acquired.
- 8.- Promote the development of technical, methodological, personal and participatory skills.
- 9.- Get a practical experience that facilitates the insertion in the labour market and improve their future employability.

**Year 2015/16**

<b>Course Name:</b>	Mobility	<b>Course Code:</b>	595030380; 595030381; 595030382; 595030383; 595030384; 595030385; 595030386
<b>Year:</b>	3 / 4	<b>Semester:</b>	6; 7; 8
<b>Credits (ECTS):</b>	3; 4,5; 6	<b>Credit Hours:</b>	2; 3; 4
<b>Area:</b>	Elective	<b>Type:</b>	Elective / Mobility
<b>Term:</b>	Fall / Spring	<b>Language:</b>	Spanish / English / Others
<b>Prerequisites / Co-requisites:</b>		120 ECTS passed	
<b>Coordinator:</b>		Vice Dean International Relationships	
<b>Bachelor Engineering Program:</b>		Telecommunication Systems Engineering Communications Electronics Engineering Sound and Image Engineering Telematics Engineering	

### ABET Student Outcomes

- (a) An ability to apply knowledge of mathematics, science, and engineering
- (b) An ability to design and conduct experiments, as well as to analyze and interpret data
- (d) An ability to function on multidisciplinary teams
- (f) An understanding of professional and ethical responsibility
- (g) An ability to communicate effectively
- (i) A recognition of the need for, and an ability to engage in life-long learning
- (k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

### Study Outcomes (according to the Spanish program definition)

- CG 02 Ability to search and select information, develop critical thinking and produce and defend arguments within the area.
- CG 03 Ability to express oneself in oral and written form, and to convey information through documents and public presentations.
- CG 04 Ability to abstract, analyze, and synthesize, and to solve problems.
- CG 05 Ability for teamwork in multidisciplinary environments.
- CG 12 Skills for interpersonal relations and work in a national and international context, with the ability to express in oral and written English.
- CG 13 Learning skills with a high degree of autonomy.

### **Specific outcomes of instruction (according to the Spanish program definition)**

- 1.- Handling of the instrumentation and procedures for a basic laboratory of communication systems, (generator/oscilloscope and Spectrum Analyzer RF modulator).
- 2.- Identify the rules and regulations of application to engineering projects in a determined field.
- 3.- Knowledge of the peculiarities of the telecommunication project.
- 4.- Work on shared projects.
- 5.- Representation of the frequency response.
- 6.- Ability to design, analyze and measure a wireline access network in residential environments.
- 7.- Ability to design, analyze and implement signal of TV (SMATV) distribution networks.
- 8.- Ability to design, management and the management of ICT projects.