Course guide
230372 - SATT - Seminar on Advanced Telecommunication Technologies

Last modified: 03/10/2019

Unit in charge:	Barcelona School of Telecommunications Engineering
Teaching unit:	744 - ENTEL - Department of Network Engineering.

Degree:	MASTER'S DEGREE IN ADVANCED TELECOMMUNICATION TECHNOLOGIES (Syllabus 2019). (Optional subject).

Academic year: 2019   **ECTS Credits:** 3.0   **Languages:** English

LECTURER

Coordinating lecturer: Marcos Postigo

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CE1. Ability to apply information theory methods, adaptive modulation and channel coding, as well as advanced techniques of digital signal processing to communication and audiovisual systems.
CE2. Ability to develop radio-communication systems: antennas design, equipment and subsystems, channel modeling, link dimensioning and planning.
CE3. Ability to implement wired/wireless systems, in both fix and mobile communication environments.
CE4. Ability to design and dimension transport, broadcast and distribution networks for multimedia signals
CE5. Ability to design radio-navigation and location systems, as well as radar systems.
CE6. Ability to model, design, implement, manage, operate, administrate and maintain networks, services and contents
CE7. Ability to plan networks and decision-making about services and applications taking into account: quality of service, operational and direct costs, implementation plan, supervision, security processes, scalability and maintenance. Ability to manage and assure the quality during the development process
CE8. Ability to understand and to know how to apply the functioning and organization of the Internet, new generation Internet technologies and protocols, component models, middleware and services
CE9. Ability to deal with the convergence, interoperability and design of heterogeneous networks with local, access and core networks, as well as with service integration (telephony, data, television and interactive services).
CE10. Ability to design and manufacture integrated circuits
CE11. Knowledge of hardware description languages for high-complex circuits.
CE12. Ability to use programmable logical devices, as well as to design analog and digital advanced electronics systems. Ability to design communication devices, such as routers, switches, hubs, transmitters and receivers in different bands.
CE13. Ability to apply advanced knowledge in photonics, optoelectronics and high-frequency electronic
CE14. Ability to develop electronic instrumentation, as well as transducers, actuators and sensors.
CE15. Ability to integrate Telecommunication Engineering technologies and systems, as a generalist, and in broader and multidisciplinary contexts, such as bioengineering, photovoltaic conversion, nanotechnology and telemedicine.
CE16. Ability to develop, direct, coordinate, and technical and financial management of projects in the field of: telecommunication systems, networks, infrastructures and services, including the supervision and coordination of other's subprojects; common telecommunications infrastructures in buildings or residential areas, including digital home projects; telecommunication infrastructures in transport and environment; with corresponding energy supply facilities and assessment of electromagnetic emissions and electromagnetic compatibility.

Transversal:

CT1a. ENTREPRENEURSHIP AND INNOVATION: Being aware of and understanding how companies are organised and the principles that govern their activity, and being able to understand employment regulations and the relationships between planning, industrial and commercial strategies, quality and profit.

CT2. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.

CT3. TEAMWORK: Being able to work in an interdisciplinary team, whether as a member or as a leader, with the aim of contributing to projects pragmatically and responsibly and making commitments in view of the resources that are available.

CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

CT5. FOREIGN LANGUAGE: Achieving a level of spoken and written proficiency in a foreign language, preferably English, that meets the needs of the profession and the labour market.

TEACHING METHODOLOGY

- Lectures
- Application classes
- Laboratory classes
- Laboratory practical work
- Group work (distance)
- Individual work (distance)
- Other activities
- Short answer test (Control)
- Short answer test (Test)
- Extended answer test (Final Exam)

LEARNING OBJECTIVES OF THE SUBJECT

Quite often, visiting professors, researchers, entrepreneurs or other relevant people offer conferences or short courses, also, from time to time, the ETSETB organize interesting activities. All of them very worth for our master students. This seminar is a way to collect this activities and make it count as a part of our students academic curriculum.
Therefore, each of these activities taken by master students, will be registered in the academic office, and when one student reaches 75 hours of activities, he or she can recognize them enrolling this seminar as an elective subject. This seminar can only be enrolled once.

The recognized time for activities is:
- Recognized time for conferences = conference duration.
- Recognized time for short courses without qualification system = 2 * short course duration * attendance percentage.
- Recognized time for short courses without qualification system = 3 * Short course duration * attendance percentage.
- Recognized time for other activities = depends on the activity and it is established by Head of Master Studies.

Learning results of the subject:
- Any related to telecommunications and electronics engineering, entrepreneurship innovation, sustainability and social commitment .

STUDY LOAD

Type	Hours	Percentage
Hours large group	24,0	32.00
Self study	51,0	68.00

Total learning time: 75 h

CONTENTS

1. Telecommunications and electronics engineering, entrepreneurship innovation, sustainability and social commitment activities.

Description:
- Conferences
- Short courses
- Activities organized by ETSETB

Full-or-part-time: 75h
Guided activities: 75h

GRADING SYSTEM

The final mark is established by averaging all marks of the different activities weighted according to their recognized time.
Activities without qualification system will be qualified with 10 over 10.
Activities with qualification system may use: tests, exercises, individual or group works assessments and laboratory assessments.