

## DEA-TEL-526 Communication Systems II

**SEMESTER:** Spring

**CREDITS:** 6 ECTS (4 hrs. per week: 3 Theory + 1 Lab, on average, in 2-hour sessions)

**LANGUAGE:** Spanish

**DEGREES:** MIT

### Course overview

This is an advanced course in telecommunications to provide students with knowledge of modern communication systems. The course focuses on PAN, LAN and WAN design, studying wireline and wireless systems. Besides, typical applications will be analyzed and experimented in the lab to illustrate solutions to real problems.

### Prerequisites

Fundamentals of communication theory and signals & systems. Fundamentals on programming and digital electronic systems.

### Course contents

#### Theory:

1. The OSI model. Introduction to Telecommunications Systems.
2. Communication system to information access.
3. Wireline and Wireless concepts and systems.
4. Mobile communications.
5. Communications systems focus on radio, navigation and broadcasting.

#### Laboratory:

Each concepts described previously has at least one associated lab practice (2-hour sessions).

- P1. Wireline communications. Protocols.
- P2. Baseband systems. Modbus
- P3. Networking protocols.
- P4. Advanced networking protocols.
- P5. Wireless systems. Introductions.
- P6. Wireless networking systems.

## Textbook

- S. Haykin. Sistemas de Comunicación. Nueva Editorial Interamericana, 1985
- B.P. Lathi. Sistemas de Comunicación. Nueva Editorial Interamericana, 1986
- J.M. Hernando Rábanos, C. Lluch Mesquina. Comunicaciones Móviles de Tercera Generación. Telefónica Móviles España, 2000
- W. Stallings, Comunicaciones y Redes de Computadores, Prentice Hall, 6º Ed. 2001.

## Grading

The following conditions must be accomplished to pass the course:

- A minimum overall grade, in the final and the lab, of at least 5 over 10

The overall grade is obtained as follows:

- Final exam accounts for 50% of the final grade.
- Quizzes, research paper and presentation account for 30% in total.
- Lab reports must be handed in two weeks and they are graded and returned the following week. They account for 20% of the grade.