

Academic Year: (2024 / 2025)

Review date: 24-04-2024

Department assigned to the subject: Signal and Communications Theory Department

Coordinating teacher: RAMIREZ GARCIA, DAVID

Type: Compulsory ECTS Credits : 6.0

Year : 4 Semester : 1

OBJECTIVES

- Ability to analyze and specify the fundamental parameters of a communications system.
 - Ability to evaluate the advantages and disadvantages of different technological alternatives for deployment or implementation of communications systems in the field of security, from the point of view of signal space, disturbances and noise and the analogue modulation and digital.
 - Ability to understand the design, deployment, organization and management of systems, networks and telecommunications infrastructure in the context of security, responsible for continuous improvement.
 - Ability to understand the design, deployment, organization and management of information systems and communications security of areas, and environmental enclosures.
 - Ability to analyze, encode, process and transmit multimedia information using techniques analog and digital signal processing.
 - Ability to understand the specification, implementation and maintenance of systems, equipment, heads and facilities of television, audio and video security systems.
 - Ability to extract and merge information from audiovisual signals and otherwise.
- Understanding and mastery of basic concepts of linear systems and related functions and transforms.
 - Understanding and mastering the techniques of transmission and the basic parameters of a communications system.
 - Understanding and mastering the mechanisms of propagation and transmission of electromagnetic waves and their corresponding sending and receiving devices.
 - Understanding and mastery of information systems and communications security of areas, and environmental enclosures.

DESCRIPTION OF CONTENTS: PROGRAMME

- Fundamentals of communication systems.
- Transmission techniques and systems.
- Communication theory.
- Information theory.
- Radiocommunication. Radiation, propagation and signal processing in different media.
- Tactical communication networks (cellular networks, tetra, tetrapod, GSM, UMTS) and strategical communication networks (fixed and mobile, terrain and satellite)

ASSESSMENT SYSTEM

% end-of-term-examination:	60
% of continuous assessment (assignments, laboratory, practicals...):	40

The final exam will determine 60% of the total course grade (6 points).

The rest of the grading 40% (4 points) is obtained along the academic year as follows:

1. Laboratory exercises.
2. Solving proposed exercises.

The detailed rules and weights for the grading of each part will be provided at the beginning of the course.

BASIC BIBLIOGRAPHY

- Antonio Artés, Fernando Pérez González, Jesús Cid, Roberto López Valcarce, Carlos Mosquera y Fernando Pérez Cruz Comunicaciones Digitales, Pearson, 2007