Standards and Protocols for Communications

Academic Year: (2021 / 2022)   **Review date: 08-09-2021**

Department assigned to the subject: Telematic Engineering Department

Coordinating teacher: OSUNA GARCIA, PABLO

Type: Electives ECTS Credits : 3.0

Year : 1 Semester : 1

OBJECTIVES

BASIC SKILLS
CB7 Students learn how to apply the knowledge acquired and increase their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of ¿¿study
CB8 Students learn how to integrate knowledge and how to face the complexity of formulating judgments based on information that, being incomplete or limited, includes considerations on social and ethical responsibilities linked to the application of their knowledge
CB10 Acquire the learning skills that allow the students to continue studying in a way that will be largely autonomous.

GENERAL COMPETENCES
CG8 Capacity for continuous, self-directed and autonomous learning.

SPECIFIC COMPETENCES
CE1 Ability to develop digital systems, understanding the components and programming as integral elements of a product.

LEARNING RESULTS

The learning outcomes that students should have are:
- Know the TCP / IP networks.
- Ability to design and deploy simple TCP / IP networks.
- Know the communication systems.
- Ability to design link systems and antennas.

DESCRIPTION OF CONTENTS: PROGRAMME

2. Communication standards and protocols:
a. Link protocols. Wi-Fi technology
b. Network and transport protocols.
c. Application protocols: Rest and http technologies
d. Basic concepts of security in communications, encryption.
e. Introduction to linear systems: signals, Fourier transform, Laplace
F. Introduction to electromagnetism and antennas. Formula of Friis.
g. Communication systems: modulations

LEARNING ACTIVITIES AND METHODOLOGY

TRAINING ACTIVITIES OF THE STUDY PLAN
AF1 Theoretical class
AF6 Work in groups
AF7 Individual student work
AF8 Partial and final exams

TEACHING TRAINING METHODOLOGIES
MD1 Presentations in class with support of computer and audiovisual media, in which the main concepts of the subject are developed and the bibliography is provided to complement the students' learning.
MD3 Resolution of practical cases, problems, etc. proposed by the teacher individually or in groups.
MD4 Presentations and discussion in class, under the teacher's moderation of topics related to the

content of the subject, as well as case studies

% end-of-term-examination: 0

% of continuous assessment (assigments, laboratory, practicals…): 100