30159 - Communication Networks and Services

Información del Plan Docente

Academic Year	2018/19
Subject	30159 - Communication Networks and Services
Faculty / School	179 - Centro Universitario de la Defensa - Zaragoza
Degree	457 - Bachelor's Degree in Industrial Organisational Engineering 563 - Bachelor's Degree in Industrial Organisational Engineering
ECTS	6.0
Year	4
Semester	First semester
Subject Type	Optional
Module	---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed for the teaching-learning process is mainly based on masterclasses exposing the main theoretical concepts of each topic. These theoretical concepts will be complemented by problem sessions that apply those concetps on realistic situations. Lab sessions and autonomous traffic capture exercices are also carried out so that students can configure real but simple networking equipment. In all the cases, active participation of the students will be promoted planning and solving topics proposed in class.

4.2.Learning tasks

Learning activities are mainly the study of the learing material given in the classes, the realization of practical exercices provided for each topic and the realization of several lab sessions to configure networking equipment and to capture real network traffic traces.

4.3.Syllabus

The program contains the following topics:

1. INTRODUCTION: Communications networks introductions and protocol arquitectures: OSI and TCP/IP model
2. PHYSICAL LAYER: Syncronous and asyncronous transmission. Transmission media. DTE/DCE interface
3. LINK LAYER: Link layer functions. Flow control. Error control. HDLC protocol
4. LAN NETWORKS: Medium access mechanisms. Ethernet. Ethernet devices. Virtual LANs
5. NETWORK LAYER: IPv4 protocol. Addressing. Auxiliar protocols: ICMP and ARP. Routing

4.4.Course planning and calendar

The schedule of the course will be defined by the centre in the academic calendar of the corresponding year. Dates for exams and other scheduled activities will be indicated by the teacher in class and in Moodle.

The activities of the course can be consulted in the Syllabus. Classes start at the end of September, the first term. The key dates of the course, related to the different activities that are developed throughout the course, as well as the orders or works that students must present will be indicated in the Digital Teaching Ring (ADD).

4.5.Bibliography and recommended resources