30159 - Communication Networks and Services

Información del Plan Docente

Academic Year 2017/18
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. Introduction
1.2. Recommendations to take this course
1.3. Context and importance of this course in the degree
1.4. Activities and key dates

2. Learning goals
2.1. Learning goals

2.2. Importance of learning goals

3. Aims of the course and competences
3.1. Aims of the course
3.2. Competences

4. Assessment (1st and 2nd call)
4.1. Assessment tasks (description of tasks, marking system and assessment criteria)

5. Methodology, learning tasks, syllabus and resources
5.1. 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 concepts on realistic situations. Lab sessions and autonomous traffic capture exercises 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.
5.2. Learning tasks

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

5.3. Syllabus

The program contains the following topics:

1. INTRODUCTION: Communications networks introductions and protocol architectures: OSI and TCP/IP model
2. PHYSICAL LAYER: Synchronous and asynchronous 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
6. TRANSPORT LAYER: Transport layer services and process multiplexing with ports. UDP and TCP protocols

5.4. Course planning and calendar

Planning and scheduling will be defined by the Center in the calendar of the corresponding academic year. Exam and other activities dates will be published in Moodle.

5.5. Bibliography and recommended resources
