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 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.

30159 - Communication Networks and Services

5.2.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.

5.3.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
6. TRANSPORT LAYER: Transport layer services and proccess 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 corresponing academic year. Exam and other activities dates will be published in Moodle.

5.5.Bibliography and recommended resources

BC	Kurose, James F. Redes de computadoras : un enfoque descendente / James F. Kurose, Keith W. Ross ; revisión técnica Carolina Mañoso Hierro, Ángel Pérez de Madrid y Pablo ; revisión técnica para Latinoamérica Luis Marrone ... [et. al.] . - 5ª ed. Madrid : Pearson Educación, D.L. 2010
BC	Stallings, William. Comunicaciones y redes de computadores / William Stallings ; traducción, Jesús Esteban Díaz Verdejo ... [et al.] ; revisión técnica, Raúl V. Ramírez Velarde, M. en C. Jaquelina López Barrientos . - 7ª ed. [reimp.] Madrid [etc.] : Pearson Educación, D.L. 2010