Universidad Zaragoza

Academic Year/course: 2023/24

30211 - Computer Networks

Syllabus Information

Academic year: 2023/24
Subject: 30211 - Computer Networks
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
326 - Escuela Universitaria Politécnica de Teruel
Degree: 330 - Complementos de formación Máster/Doctorado
439 - Bachelor's Degree in Informatics Engineering
443 - Bachelor's Degree in Informatics Engineering
ECTS: 6.0
Year: 2
Semester: First semester
Subject type: Compulsory
Module:

1. General information

Context

The subject is taught in the first four-month period of the second year and is included in a common subject, together with the subjects "Operating Systems" and "System Administration".

Requirements

It is highly recommended to have an intermediate level of programming and to have passed or be taking the subject "Operating Systems".

Objectives

- Know the layers of the network architecture and how they interact with each other.
- To know the operation of the most common protocols of each layer.
- Be able to describe and design computer networks.
- Be able to implement client-server applications over TCP/IP.

These goals are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (https://www.un.org/sustainabledevelopment/es/):

- Goal 9: Industry, innovation and infrastructure.

2. Learning results

- Know and apply the characteristics, functionalities and structure of computer networks and the Internet.
- Know how to design and implement applications that use basic network communications.

3. Syllabus

- Introduction and network architecture
- Basic physical fundamentals underpinning networks
- Media access control and point-to-point communication
- Network interconnection and IP protocol
- End-to-end communication and data transport layer protocols

- Orthogonal aspects such as congestion and quality of service
- Conceptual layers above the data transport layer

4. Academic activities

At the School of Engineering and Architecture of the Rio Ebro Campus:

Type 1 activity (lectures): 30 hours

-Deliver the syllabus

Type 2 activity (problem classes): 15 hours

-Solve problems related to the content of the lectures.

Type 3 activity (practical classes): 15 hours

-6 sessions of networking practices in the laboratory with their respective preparation and delivery.

Type 6 activities (teaching assignments): 12 hours

-The student will perform a practical work based on the programming of network applications.

Optionally, the realization of extraordinary voluntary activities that may be proposed.

At the Polytechnic University School of the Teruel Campus:

Type 1 activity (lectures): 30 hours

-Deliver the syllabus

Type 2 activity (problem classes): 18 hours

-Solve problems related to the content of the lectures.

Type 3 activity (practical classes): 12 hours

-6 sessions of laboratory networking practices

Type 6 activities (teaching assignments): 10 hours

-The student will carry out a practical work indicated by the teacher.

Optionally, the realization of extraordinary voluntary activities that may be proposed.

5. Assessment system

For all the tests, the correct development of the answers will be assessed, with a level of demand equal to that required during the classes.

At the School of Engineering and Architecture of the Ebro River Campus:

- Written exam (open questions and/or exercises): 75 %
- Practical written exam (short answer questions), and optionally, questionnaires and delivery of practices submitted in due time and form throughout the four-month period of the course: 10 %
- Work: 15 %

At the Polytechnic University School of the Teruel Campus:

- Written exam (open questions and/or exercises): 75 %
- Written exam of practices (exercises on the practices), and optionally questionnaires and deliveries of practices presented in due time and form throughout the four-month period: 20 %
- Work: 5 %