

Academic Year: (2023 / 2024)

Review date: 30-03-2023

Department assigned to the subject: Telematic Engineering Department

Coordinating teacher: GARCIA MARTINEZ, ALBERTO

Type: Electives ECTS Credits : 6.0

Year : 4 Semester :

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Students need to know the concepts presented in the course 'Network and Communication Services'

OBJECTIVES

Understand the current structure and behavior of the Internet, as a system composed by a large number of interconnected networks, along with the technologies used to manage IP networks. With this course the student complements its knowledge on network layer technologies, acquired in the 'Network and Communication Services' course. We also focus on the business models related with the Internet, introducing a new dimension that complements the technical skills.

The knowledge the student is expected to acquire is

- Understand the organizative model of the Internet. Understand the business model of the Internet, and the impact this model has in the technical decisions made. Understand how the competence between agents provide a successful solution for the provision of the communication service, resulting from the interaction of a large number of agents.
- Understand the technology used for interdomain routing.
- Understand the model used for network management in the Internet. Understand the language used to define the managed objects, and the SNMP protocol.

Skills

- Understand the business model defined for serving internet traffic
- Learn the BGP protocol. Configure BGP routers in simple scenarios
- Define managed objects according to the Internet management model (SMI language)
- Develop agents and manager which exchange information using the SNMP protocol

DESCRIPTION OF CONTENTS: PROGRAMME

- Review of the Internet network layer: addressing and its historical evolution (class model, CIDR). Intradomain routing. Resource management policies in the Internet: role of the international organizations in the management of the Internet.
- Interdomain routing. Internet business model. BGP routing.
- Network management models. ASN.1 language. Management information model in the Internet (SMI language, MIBs).
- SNMP protocol for network management.

LEARNING ACTIVITIES AND METHODOLOGY

- Lectures
- Presentations made by the students of a topic related to the class
- Laboratory
- Problem solving classes
- Individual tutorship
- Exams
- Personal work by the student

ASSESSMENT SYSTEM

The assesment system include continuous evaluation (assingments, laboratory, tests on theoretical/practical knowledge), and a final evaluation based on a written exam.

% end-of-term-examination:	60
% of continuous assessment (assignments, laboratory, practicals...):	40