Universidad Zaragoza
1542

Year : 2018/19

30351 - Network Management

Syllabus Information

Academic Year:	2018/19
Subject:	30351 - Network Management
Faculty / School:	110 -
Degree:	438 - Bachelor's Degree in Telecomunications Technology and Services Engineering
ECTS:	6.0
Year:	
Semester:	Second semester
Subject Type:	
Module:	---

General information

Aims of the course

Context and importance of this course in the degree

Recommendations to take this course

Learning goals

Competences

Learning goals

Importance of learning goals

Assessment (1st and 2nd call)

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

Methodology, learning tasks, syllabus and resources

Methodological overview

The methodology to be used to achieve the proposed learning results are as follows:

Participative Lectures (22 hours). Presentation by the teacher of the main contents of the subject, combined with the active participation of students. This activity will take place in the classroom. This methodology, supported by the student

personal work (M14) is designed to provide them with the theoretical bases of the subject content.

Classroom practices (2 hours). Exercise solving and practical cases proposed by the teacher, with the possibility of exposing them by students individually or in groups authorized by the teacher. This activity will take place in the classroom, and may require preparatory work by students (M13).
Laboratory sessions (36 hours). The students will have practice sessions 2 hours each week. This activity will take place at the Laboratory Practices 2.03 (Telematics Laboratory,"Ada Byron" building). The work will be carried out in small groups.

Guided assignments (10 hours). This non-face-to-face activity will allow advancement in all learning outcomes proposed in the topic of network management. There will be follow-up sessions by the teacher in which each student will present the work done.
Tutoring. Time for personalized attention to students with the aim of reviewing and discussing the materials and topics presented in both theoretical and practical classes.
Evaluation (4 hours). Set of theoretical tests and/or reporting practices used for the evaluation of student progress. We can find more details in the section of evaluation activities

Learning tasks

As described in the methodological presentation, the activities are divided into Lectures (22 hours) to be taught in the classroom, classroom practices (2 hours) where scenarios will be resolved and laboratory practice (36 hours) in which students can handle (and program in Python) network management related software that resolves management scenarios by means of applying the knowledge acquired in lecture sessions. In addition, there are 10 hours of guided assignments to deepen in topics related to network management applications.

Syllabus

The program offered to the students to cope with the learning results encompasses the following activities

Theoretical sessions which main content is organized in the following units:

Block A. Introduction

A.1 Global vision and introduction

A.2 Standards and fundamental models

Block B. SNMP based Management

B.1 ASN.1 Language

B2. SNMPv1 architecture

B.3 SNMPv2 architecture

B.4 Remote Monitoring (RMON)

Block C. NETCONF based Management

C.1 Introduction to NETCONF

C.2 Introduction to XML

C3 NETCONF

C4 YANG Data Modelling Language

Laboratory sessions that aim to develop the techniques explained in the theoretical sessions. Laboratory classes are organized into 18 sessions of 2 hours per session. Students will prepare a pre-class study when necessary. At the end of the session the student will be questioned about the practice in order to demonstrate the acquired skills during the practical sessions.

Course planning and calendar

Schedule sessions and work presentations

The timing of the subject, will be defined by the center in the academic calendar of the corresponding course.

Bibliography and recommended resources

- Stallings, William. SNMP, SNMPv2, SNMPv3, and RMON 1 and 2 / William Stallings . - 3rd.ed. Boston [etc.] : Addison-Wesley, cop. 1999
- Barba Martí, Antoni. Gestión de red / Antoni Barba Martí . - 1a. ed. Barcelona : Edicions UPC, 1999
- Kurose, James F.. Computer networking : a top-down approach / James F. Kurose, Keith W. Ross ; international edition adapted by Bhojan Anand . - 4th ed. Boston : Pearson, cop. 2008
- Hegering, H.G. Integrated Management of Networked Systems / H. G. Hegering, S. Abeck and B. Neumair. Morgan Kaufmann, San Francisco (CA), 1999
- Subramanian, Mani. Network Management: Principles and Practices / Mani Subramanian. (2nd Edition). Pearson 2012