

Course guides

230156 - GI - Internet Management

Last modified: 29/04/2020

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 744 - ENTEL - Department of Network Engineering.

Degree: BACHELOR'S DEGREE IN NETWORK ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR'S DEGREE IN TELECOMMUNICATIONS SCIENCE AND TECHNOLOGY (Syllabus 2010). (Optional subject).
BACHELOR'S DEGREE IN AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN ELECTRONIC SYSTEMS ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN TELECOMMUNICATIONS SYSTEMS ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR'S DEGREE IN TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Optional subject).

Academic year: 2020 **ECTS Credits:** 6.0 **Languages:** Spanish

LECTURER

Coordinating lecturer: ANTONIO BARBA

Others: ANTONIO BARBA

PRIOR SKILLS

ETSETB Academic regulations.

TEACHING METHODOLOGY

- NO classes.
- Practices (local or remote).
 - Group work (distance learning).
 - Individual work (distance learning).
 - Exercises.
 - Testing short answer.
 - Testing llarga response.
 - Other activities.

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

Type	Hours	Percentage
Hours large group	52,0	34.67
Self study	98,0	65.33

Total learning time: 150 h



CONTENTS

Internet Management

Description:

Internet Monitoring Introduction
Management Information Base
Internet Management Protocols
Web based services, Policy based internet management, Configuration Management

Specific objectives:

- To distinguish between internet monitoring and internet management
 - To know different internet management databases
- To distinguish among the current internet management protocols
- To understand the new internet management systems

Related activities:

- Virtual laboratory practise
- Specific homeworking
- Debate forum

Full-or-part-time: 13h

Self study : 13h

2. Structure of Management Information (SMI)

Description:

Description, notation and definition of the management information

- Tree structure
- Object identifier, naming, registration

Full-or-part-time: 9h

Practical classes: 4h
Self study : 5h

3. MIB, Management Information Base

Description:

The management information is defined and implemented by means of MIBs

- MIB structure
- MIB examples
- Practical use

Full-or-part-time: 20h

Practical classes: 8h
Self study : 12h



4. SNMP versions 1 & 2 protocols

Description:

Primitives definition. Architecture aspects. Performance evaluation, compatibility, tools, management procedures

- SNMP evolution
- Primitive definitions
- Architectures
- Tools and practical cases

Full-or-part-time: 24h

Practical classes: 8h

Self study : 16h

5. SNMP version 3 protocol

Description:

Primitive description of the protocol. Comparative analysis with previous versions, performance, functionalities

- Primitives and administration
- Architecture
- Tools

Full-or-part-time: 15h

Practical classes: 4h

Self study : 11h

6. RMON Remote Monitoring

Description:

Structure description. Architecture, functionality and procedures

- Remote monitoring architecture
- RMONv1 and RMONv2
- Practical cases

Full-or-part-time: 10h

Practical classes: 4h

Self study : 6h

7. Monitoring applications

Description:

Applications architecture. Practical use of free software tools

- Functionalities and architecture of the applications
- Vendor tools
- Free software tools

Full-or-part-time: 17h

Practical classes: 4h

Self study : 13h



8. Policy based management. COPS protocol

Description:

A new management paradigm to apply to multimedia services and quality of service

- Definition and architecture
- COPS protocol

Full-or-part-time: 14h

Practical classes: 4h

Self study : 10h

9. Configuration management using NetConf and YANG

Description:

New configuration systems using files

- NetConf
- YANG

Full-or-part-time: 10h

Practical classes: 4h

Self study : 6h

10. Web services based on management

Description:

The use of web servers requires a new system management based on web services

- Java management, JMAPI, JMX
- WBM and XML/DTD/Schema representation

Full-or-part-time: 18h

Practical classes: 8h

Self study : 10h

ACTIVITIES

(ENG) PRÁCTICAS (AL MENOS UNA EN CADA TEMA)

(ENG) EJERCICIOS: (AL MENOS UNO EN CADA TEMA)

(ENG) CONTROLES DE RESPUESTA CORTA: 10

(ENG) EXAMEN DE RESPUESTAS LARGAS: A MITAD DEL CURSO Y AL FINAL



GRADING SYSTEM

Final mark of the course will be obtained: either from the continuous assessment score (proposed by the professor throughout the course work and laboratory practice) or final exam, according to the following criteria:

Final exam: 100%

Continuous Assessment: Two partial tests: 30% + 30%

- Exercises: 20%
- Practices: 20%

BIBLIOGRAPHY

Basic:

- Barba, A. Gestión de red [on line]. Barcelona: Edicions UPC, 1999 [Consultation: 04/03/2015]. Available on: <http://hdl.handle.net/2099.3/36179>. ISBN 84-8301-212-X.

Complementary:

- Farrel, A. [et al.]. Network management: know it all [on line]. Boston: Morgan Kaufmann, 2008 [Consultation: 01/04/2020]. Available on: <https://ebookcentral.proquest.com/lib/upcatalunya-ebooks/detail.action?docID=365625>. ISBN 9780080923420.