Course guides
230156 - GI - Internet Management

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

Degree:
- 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 NETWORK ENGINEERING (Syllabus 2010). (Optional subject).
- BACHELOR’S DEGREE IN TELECOMMUNICATIONS SCIENCE AND TECHNOLOGY (Syllabus 2010). (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).
- BACHELOR’S DEGREE IN ELECTRONIC ENGINEERING AND TELECOMMUNICATION (Syllabus 2018). (Optional subject).

Academic year: 2021  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

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Self study</td>
<td>98,0</td>
<td>65.33</td>
</tr>
<tr>
<td>Hours large group</td>
<td>52,0</td>
<td>34.67</td>
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</tbody>
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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 te 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 manageent, 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:**

**Complementary:**