

## 230156 - GI - Internet Management

Coordinating unit:	230 - ETSETB - Barcelona School of Telecommunications Engineering		
Teaching unit:	744 - ENTEL - Department of Network Engineering		
Academic year:	2019		
Degree:	BACHELOR'S DEGREE IN NETWORK ENGINEERING (Syllabus 2010). (Teaching unit Optional) BACHELOR'S DEGREE IN TELECOMMUNICATIONS SCIENCE AND TECHNOLOGY (Syllabus 2010). (Teaching unit Optional) BACHELOR'S DEGREE IN AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN ELECTRONIC SYSTEMS ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN TELECOMMUNICATIONS SYSTEMS ENGINEERING (Syllabus 2010). (Teaching unit Optional) BACHELOR'S DEGREE IN TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Teaching unit Optional)		
ECTS credits:	6	Teaching languages:	Spanish

### Teaching staff

Coordinator:	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

Total learning time: 150h	Hours large group:	52h	34.67%
	Self study:	98h	65.33%

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### Content

<p>Internet Management</p>	<p>Learning time: 13h Self study : 13h</p>
<p>Description: Internet Monitoring Introduction Management Information Base Internet Management Protocols Web based services, Policy based internet management, Configuration Management</p> <p>Related activities: - Virtual laboratory practise - Specific homeworking - Debate forum</p> <p>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</p>	
<p>2. Structure of Management Information (SMI)</p>	<p>Learning time: 9h Practical classes: 4h Self study : 5h</p>
<p>Description: Description, notation and definition of the management information - Tree structure - Object identifier, naming, registration</p>	
<p>3. MIB, Management Information Base</p>	<p>Learning time: 20h Practical classes: 8h Self study : 12h</p>
<p>Description: The management information is defined and implemented by means of MIBs - MIB structure - MIB examples - Practical use</p>	

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<p>4. SNMP versions 1 &amp; 2 protocols</p>	<p>Learning time: 24h Practical classes: 8h Self study : 16h</p>
<p>Description: Primitives definition. Architecture aspects. Performance evaluation, compatibility, tools, management procedures</p> <ul style="list-style-type: none"> <li>- SNMP evolution</li> <li>- Primitive definitions</li> <li>- Architectures</li> <li>- Tools and practical cases</li> </ul>	
<p>5. SNMP version 3 protocol</p>	<p>Learning time: 15h Practical classes: 4h Self study : 11h</p>
<p>Description: Primitive description of the protocol. Comparative analysis with previous versions, performance, functionalities</p> <ul style="list-style-type: none"> <li>- Primitives and administration</li> <li>- Architecture</li> <li>- Tools</li> </ul>	
<p>6. RMON Remote Monitoring</p>	<p>Learning time: 10h Practical classes: 4h Self study : 6h</p>
<p>Description: Structure description. Architecture, functionality and procedures</p> <ul style="list-style-type: none"> <li>- Remote monitoring architecture</li> <li>- RMONv1 and RMONv2</li> <li>- Practical cases</li> </ul>	

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<p>7. Monitoring applications</p>	<p>Learning time: 17h Practical classes: 4h Self study : 13h</p>
<p>Description: Applications architecture. Practical use of free software tools</p> <ul style="list-style-type: none"> <li>- Functionalities and architecture of te applications</li> <li>- Vendor tools</li> <li>- Free software tools</li> </ul>	
<p>8. Policy based management. COPS protocol</p>	<p>Learning time: 14h Practical classes: 4h Self study : 10h</p>
<p>Description: A new management paradigm to apply to multimedia services and quality of service</p> <ul style="list-style-type: none"> <li>- Definition and architecture</li> <li>- COPS protocol</li> </ul>	
<p>9. Configuration management using NetConf and YANG</p>	<p>Learning time: 10h Practical classes: 4h Self study : 6h</p>
<p>Description: New configuration systems using files</p> <ul style="list-style-type: none"> <li>- NetConf</li> <li>- YANG</li> </ul>	
<p>10. Web services based on management</p>	<p>Learning time: 18h Practical classes: 8h Self study : 10h</p>
<p>Description: The use of web servers requires a new system management based on web services</p> <ul style="list-style-type: none"> <li>- Java manageent, JMAPI, JMX</li> <li>- WBM and XML/DTD/Schema representation</li> </ul>	

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### Planning of 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

### Qualification 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: 10/10/2014]. Available on: <<http://site.ebrary.com/lib/upcatalunya/docDetail.action?docID=10254643>>. ISBN 9780080923420.

Others resources: