Course guides
230152 - CSI - Information Security and Coding

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 TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Optional subject).
Academic year: 2020  ECTS Credits: 6.0  Languages: Spanish

LEADING
Coordinating lecturer: Rico Novella, Francisco Jose
Others: Forne Muñoz, Jorge

TEACHING METHODOLOGY
- Lectures
- Application lectures
- Teamwork
- Individual work
- Presentations
- Written exams

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Hours large group</td>
<td>52,0</td>
<td>34.67</td>
</tr>
<tr>
<td>Self study</td>
<td>98,0</td>
<td>65.33</td>
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</tbody>
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Total learning time: 150 h

CONTENTS

1. Theory of channel coding

Description:
Lineal codes; Cyclic codes; Practical codes: BCH, Reed-Solomon

Full-or-part-time: 35h
Theory classes: 9h
Practical classes: 3h
Self study : 23h
## 2. Convolutional codes and coded modulation

**Description:**
Coding and decoding convolutional codes; Coded Modulation; Turbo-codes.

**Full-or-part-time:** 30h
- Theory classes: 8h
- Practical classes: 2h
- Self study: 20h

## (ENG) 3. Concatenation of Codes. Analysis.

**Description:**
Channel modes; Inner and outer coding and interleaving; User probability of error.

**Full-or-part-time:** 10h
- Theory classes: 3h
- Practical classes: 1h
- Self study: 6h

## 4. Network security fundamentals

**Description:**
Security services and mechanisms. Symmetric crytography and public-key cryptography; digital signature; Perimeter security.

**Full-or-part-time:** 10h
- Theory classes: 4h
- Self study: 6h

## 5. Authentication and Key Management.

**Description:**
Authentication protocols and mechanisms; Key management protocols; Public Key infrastructures (PKI); Trust models.

**Full-or-part-time:** 25h
- Theory classes: 6h
- Practical classes: 2h
- Self study: 17h

## 6. Internet Security Protocols

**Description:**
IP Security and Virtual Private Networks; Email security; Web security

**Full-or-part-time:** 25h
- Theory classes: 6h
- Practical classes: 2h
- Self study: 17h
7. Privacy

Description:
Anonymous communication systems; statistical disclosure control (SDC)

Full-or-part-time: 15h
Theory classes: 4h
Practical classes: 2h
Self study : 9h

ACTIVITIES

(ENG) PRESENTACIONES ORALES

(ENG) EXAMEN DE RESPUESTAS LARGAS

GRADING SYSTEM

The final grade will be obtained from the continuous assessment (active participation in class and delivery of work) and the final exam, according to:

Final exam: 60%
Presentations and teamwork: 30%
Active participation in class: 10%

BIBLIOGRAPHY

Basic:

Complementary: