230152 - CSI - Information Security and Coding

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 TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Teaching unit Optional)
ECTS credits: 6
Teaching languages: Spanish

Teaching staff
Coordinator: 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>Total learning time: 150h</th>
<th>Hours large group: 52h</th>
<th>34.67%</th>
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<tbody>
<tr>
<td></td>
<td>Self study: 98h</td>
<td>65.33%</td>
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## Content

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<tr>
<th>Section</th>
<th>Learning time</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>1. Theory of channel coding</strong></td>
<td>35h</td>
<td>Lineal codes; Cyclic codes; Practical codes: BCH, Reed-Solomon</td>
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<tr>
<td><strong>2. Convolutional codes and coded modulation</strong></td>
<td>30h</td>
<td>Coding and decoding convolutional codes; Coded Modulation; Turbocodes.</td>
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<tr>
<td><strong>(ENG) 3. Concatenation of Codes. Analysis.</strong></td>
<td>10h</td>
<td>Channel modes; Inner and outer coding and interleaving; User probability of error.</td>
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<tr>
<td><strong>4. Network security fundamentals</strong></td>
<td>10h</td>
<td>Security services and mechanisms. Symmetric cryptography and public-key cryptography; digital signature; Perimeter security.</td>
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### Planning of activities

<table>
<thead>
<tr>
<th>(ENG) PRESENTACIONES ORALES</th>
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<tr>
<td>(ENG) EXAMEN DE RESPUESTAS LARGAS</td>
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### Qualification 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:


Others resources: