230713 - DPROT - Data Protection

Coordinating unit: 230 - ETSETB - Barcelona School of Telecommunications Engineering
Teaching unit: 749 - MAT - Department of Mathematics
Academic year: 2018
Degree: MASTER'S DEGREE IN TELECOMMUNICATIONS ENGINEERING (Syllabus 2013). (Teaching unit Optional)
ECTS credits: 5
Teaching languages: English

Teaching staff
Coordinator: Jorge Villar
Others: Jorge Villar

Prior skills
Basic linear algebra and probability.
It is recommended a basic knowledge of cryptography, at an introductory level.

Teaching methodology
- Lectures
- Individual work (distance)
- Oral presentations
- Final Exam

Learning objectives of the subject
Understanding the necessary cryptographic techniques used to protect data during storage and transmission, in order to guarantee its confidentiality, integrity and authentication.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 125h</th>
<th>Hours small group:</th>
<th>39h</th>
<th>31.20%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self study:</td>
<td>86h</td>
<td>68.80%</td>
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</table>
## Content

| Introduction | **Learning time:** 9h 36m  
| Laboratoy classes: 3h  
| Self study : 6h 36m |

**Description:**  
Introduction to cryptography under the point of view of data protection.

| Symmetric key | **Learning time:** 19h 12m  
| Laboratoy classes: 6h  
| Self study : 13h 12m |

**Description:**  

| Public key | **Learning time:** 29h  
| Laboratoy classes: 9h  
| Self study : 20h |

**Description:**  

| Security models | **Learning time:** 19h 12m  
| Laboratoy classes: 6h  
| Self study : 13h 12m |

**Description:**  
### Zero-knowledge

**Description:**

**Learning time:** 9h 36m  
Laboratory classes: 3h  
Self study: 6h 36m

### Distributed cryptography

**Description:**

**Learning time:** 19h 12m  
Laboratory classes: 6h  
Self study: 13h 12m

### Case study

**Description:**
Study of real cryptographic protocols used in some practical scenarios.

**Learning time:** 19h 12m  
Laboratory classes: 6h  
Self study: 13h 12m

### Qualification system

- Final exam: 40%
- Oral presentation: 20%
- Assignments: 20%
- Final report: 20%

### Bibliography