32040 - MAX - Advanced Mechanisms on Networks Security

Coordinating unit: 230 - ETSETB - Barcelona School of Telecommunications Engineering
Teaching unit: 744 - ENTEL - Department of Network Engineering
Academic year: 2015
Degree: MASTER’S DEGREE IN NETWORK ENGINEERING (Syllabus 2006). (Teaching unit Optional)
ERASMUS MUNDUS MASTER’S DEGREE IN PHOTONICS ENGINEERING, NANOPHOTONICS AND BIOPHOTONICS (Syllabus 2010). (Teaching unit Optional)
MASTER’S DEGREE IN NETWORK ENGINEERING (Syllabus 2009). (Teaching unit Optional)
DOCTORAL DEGREE IN NETWORK ENGINEERING (Syllabus 2007). (Teaching unit Optional)
ECTS credits: 5  Teaching languages: English

Teaching staff
Coordinator: MIGUEL SORIANO IBAÑEZ
Others: Jordi Forné Muñoz
Oscar Esparza Martín
José Luis Muñoz Tapia
Josep Pegueroles Vallés

Prior skills
Knowledge of communication networks (functioning, related protocols, etc.). Elemental knowledge of Number Theory and basic cryptography.

Teaching methodology
The teaching methodology includes:
- Theoretical lectures. The teacher will present the main concepts, as a summary, so that the student can acquire the general context of the subject with the adequate detail level. These sessions will foster interactivity and discussion of the different proposed problems, in order to interconnect the presented concepts.
- Development of a research/application project.
- Work in groups
- Public presentation and defense of the projects.

Learning objectives of the subject
Identify mechanisms and solutions necessary to provide security in different scenarios (networks and services) with different requirements, availability and capacity.
<table>
<thead>
<tr>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
</tr>
<tr>
<td>Degree competences to which the content contributes:</td>
</tr>
<tr>
<td>Review</td>
</tr>
<tr>
<td>Degree competences to which the content contributes:</td>
</tr>
<tr>
<td>Fair non repudiation</td>
</tr>
<tr>
<td>Degree competences to which the content contributes:</td>
</tr>
<tr>
<td>Security Aspects in Ubiquitous Computing</td>
</tr>
<tr>
<td>Degree competences to which the content contributes:</td>
</tr>
<tr>
<td>P2P Security</td>
</tr>
<tr>
<td>Degree competences to which the content contributes:</td>
</tr>
<tr>
<td>Group Communications Security</td>
</tr>
<tr>
<td>Degree competences to which the content contributes:</td>
</tr>
<tr>
<td>Key Management in MANETs</td>
</tr>
<tr>
<td>Degree competences to which the content contributes:</td>
</tr>
<tr>
<td>Privacy</td>
</tr>
<tr>
<td>Degree competences to which the content contributes:</td>
</tr>
<tr>
<td>Security in electronic voting</td>
</tr>
<tr>
<td>Degree competences to which the content contributes:</td>
</tr>
</tbody>
</table>
32040 - MAX - Advanced Mechanisms on Networks Security

Qualification system

- Research/application project (40 %)
- Final Exam (60%)

Bibliography