**Course guide**

230673 - EMC - Emc in Electronic Design

**Unit in charge:** Barcelona School of Telecommunications Engineering  
**Teaching unit:** 710 - EEL - Department of Electronic Engineering.

**Degree:**  
MASTER’S DEGREE IN ELECTRONIC ENGINEERING (Syllabus 2013). (Optional subject).  
MASTER’S DEGREE IN ADVANCED TELECOMMUNICATION TECHNOLOGIES (Syllabus 2019). (Optional subject).

**Academic year:** 2021  
**ECTS Credits:** 5.0  
**Languages:** English

**LECTURER**

**Coordinating lecturer:** Ferran Silva  
**Others:** Marc Aragón  
Ferran Silva

**DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES**

**Transversal:**
1. **EFFECTIVE USE OF INFORMATION RESOURCES:** Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

2. **FOREIGN LANGUAGE:** Achieving a level of spoken and written proficiency in a foreign language, preferably English, that meets the needs of the profession and the labour market.

**TEACHING METHODOLOGY**

- Laboratory practical work  
- Lectures exercises  
- Short answer test (Control)  
- Short answer test (Final Exam)  
- Extended answer test (Final Exam)

**LEARNING OBJECTIVES OF THE SUBJECT**

Learning objectives of the subject:  
The aim of this course is to train students to include the electromagnetic compatibility in the design of electronic products.

Learning results of the subject:  
- Ability to perform radiated and conducted tests, including ESD, to evaluate electronic designs emissions and immunity.  
- Ability to design electronic circuits and products taken into account their electromagnetic emission and immunity.  
- Ability to understand and apply international Electromagnetic Compatibility standards.
STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours small group</td>
<td>26,0</td>
<td>20.80</td>
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<tr>
<td>Self study</td>
<td>86,0</td>
<td>68.80</td>
</tr>
<tr>
<td>Hours large group</td>
<td>13,0</td>
<td>10.40</td>
</tr>
</tbody>
</table>

Total learning time: 125 h

CONTENTS

**EMC lectures**

Description:
- Introduction to EMC
- Conducted interference
- Radiated Interference
- Transient perturbations
- EMC Regulations

**Full-or-part-time:** 13h

Theory classes: 13h

**Experimental EMC**

Description:
- Laboratory practices
- Virtual numerical simulation exercises

**Full-or-part-time:** 26h

Laboratory classes: 26h

GRADING SYSTEM

Lectures exercises=20%
Hands-on & virtual lab=50%
Final Exam test=10%
Final Exam problem=20%

BIBLIOGRAPHY

**Basic:**

**Complementary:**