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).
MASTER'S DEGREE IN ELECTRONIC ENGINEERING (Syllabus 2022). (Optional subject).

Academic year: 2022 ECTS Credits: 5.0 Languages: English

LECTURER

Coordinating lecturer: Consultar aquí / See here: https://telecos.upc.edu/ca/estudis/curs-actual/professorat-responsables-coordinadors/responsables-assignatura
Others: Consultar aquí / See here: https://telecos.upc.edu/ca/estudis/curs-actual/professorat-responsables-coordinadors/professorat-assignat-idioma

PRIOR SKILLS

- Basic electronic laboratory instrumentation
- Electromagnetic fields and radiation (antennas)
- Basic electronic design

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>
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<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>
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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: