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>
</tr>
</thead>
<tbody>
<tr>
<td>Hours small group</td>
<td>26,0</td>
<td>20.80</td>
</tr>
<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: