Course guide
230673 - EMC - Emc in Electronic Design

Last modified: 11/04/2025

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

Degree: MASTER'S DEGREE IN ADVANCED TELECOMMUNICATION TECHNOLOGIES (Syllabus 2019). (Optional subject).
MASTER'S DEGREE IN ELECTRONIC ENGINEERING (Syllabus 2022). (Optional subject).

Academic year: 2025 **ECTS Credits:** 5.0 **Languages:** English

LECTURER

Coordinating lecturer: MARC ARAGÓN HOMAR

Others: Primer quadrimestre:
MARC ARAGÓN HOMAR - 11
MARCO AURELIO AZPÚRUA AUYANET - 11

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

Type	Hours	Percentage
Self study	86,0	68.80
Hours large group	13,0	10.40
Hours small group	26,0	20.80

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 silmulation 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:
- Williams, T.. EMC for product designers [on line]. 4th ed. Oxford ; Boston: Newnes, 2007 [Consultation: 26/07/2013]. Available on: http://www.sciencedirect.com/science/book/9780750681704. ISBN 0750681705.

Complementary:
- Paul, C.R. Introduction to electromagnetic compatibility. 2nd ed. New York: John Wiley and Sons, 2006. ISBN 0471755001.
- Balcells, J. [et al.]. Interferencias electromagnéticas en sistemas electrónicos. Barcelona: Marcombo, 1991. ISBN 8426708412.