

COURSE NAME			
Electromagnetic Fundamentals for RF Design			
CREDITS	6 ECTS	TYPE	Elective
SCHEDULING	2nd Term	CHARACTER	Theoretical-Practical

CONCISE COURSE CONTENTS

- Fundamentals of transmission lines.
- Analysis of distributed networks and impedance matching.
- RF and microwave circuits
- Electromagnetic compatibility and interference in integrated circuits.
- Antennas.

LEARNING OBJECTIVES

- Get to know the differences between distributed parameter circuits and lumped parameter circuits as well as the conditions for which the use of distributed models is indispensable.
- Get to know the methods for description of the response of distributed circuits.
- Get to know the specifics of the implementation of some circuit functionalities at high frequencies.
- Identify the effects associated with the distributed nature of the interconnections of high-speed digital circuits. Learn to model the interferences between metal tracks in such circuits.
- Get to know the function of the antennas as well as their design parameters as both circuit elements and radiating elements.
- Become familiar with practical implementations of transmission lines and printed antennas.
- Know how to model distributed and coupling effects in high-frequency circuits.
- Know how to choose the most suitable type of antenna for a wireless system according to prescribed specifications.

LEARNING ACTIVITIES

- Online theoretical-lectures classes.
- Practical classes and/or exercises: tutorials, resolution of selected problems and practical work.

EVALUATION SYSTEM

Delivery of exercises and development of works

Personally conducting exercises (problems and/or simulations) of some of the thematic blocks.

The evaluation will be based on the grades obtained in the assigned exercises.

Students will be given the possibility to do volunteer work in case they wish to improve their final grade.