30300 - Mathematics I

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	438 - Bachelor's Degree in Telecomunications Technology and Services Engineering
ECTS	6.0
Course	1
Period	First semester
Subject Type	Basic Education
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

Mathematics I is an obligatory subject, which is in the first semester, having 6 ECTS credits, equivalent to total 150 hours of work, corresponding to 60 hours in the room (theory classes, problems, laboratory, ...) and 90 hours of home's work (solving exercises, study, ...).
In this course the basics of differential calculus of real and complex functions are presented. Also, numerical methods for solving approximately nonlinear equations are considered.

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

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5.2.Learning activities

5.3.Program

Theoretical and practical classes

- Real numbers and complex numbers
- Limits and continuity of functions of several variable
- Differential calculus of functions of several variables
- Complex functions: limits and continuity.
- Differentiability of complex functions.
- Real and complex series
- Power series. Taylor series.

Laboratory Practice

- Complex numbers.
- Functions of one variable.
- Functions of several variables.
- Numerical methods for solving nonlinear equations.
- Numerical methods for solving systems nonlinear equations.

5.4.Planning and scheduling

5.5.Bibliography and recomended resources