

27015 - Numerical Analysis II

Información del Plan Docente

Academic Year	2017/18
Faculty / School	100 - Facultad de Ciencias
Degree	453 - Degree in Mathematics
ECTS	9.0
Year	3
Semester	Annual
Subject Type	Compulsory
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

Lectures are complemented with problem sessions, where the concepts are trained with practical cases. The different computational methods and algorithms are performed in a scientific programming language, checking the different algorithms and methods with test problems.

Individual study, complemented with tutorial sessions, are fundamental in the learning process.

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5.2.Learning tasks

- Lectures
- Problems session in small groups
- Computer lab sessions in small groups
- Tutorial sessions
- Study and work of the student

5.3.Syllabus

1. Polynomial interpolation
2. Spline interpolation
3. Numerical differentiation
4. Numerical quadrature

5.4.Course planning and calendar

See the academic calendar of the Universidad de Zaragoza and the scheduling established by the Faculty of Sciences.

5.5.Bibliography and recommended resources

- Gasca, Mariano. Cálculo numérico : unidad didáctica 1 / preparada por Mariano Gasca González. - [6a. ed.] Madrid : Universidad Nacional de Educación a Distancia, 1991
- Burden, Richard L.. Análisis numérico / Richard L. Burden, J. Douglas Faires . - 6a ed.,rev. México [etc.] : International Thomson, cop. 1998
- Faires, J. Douglas. Métodos numéricos / J. Douglas Faires, Richard Burden; traducción y revisión técnica Pedro J. Paul Escolano . - 3a ed. Madrid [etc] : Thomson, D.L. 2004
- Kincaid, David. Análisis numérico : las matemáticas del cálculo científico / David Kincaid y Ward Cheney ; versión en español de Rafael Martínez Enríquez y Carlos Torres Alcaraz Wilmington, Delaware : Addison-Wesley Iberoamericana, cop. 1994