

27020 - Partial Differential Equations

Información del Plan Docente

Academic Year	2017/18
Faculty / School	100 - Facultad de Ciencias
Degree	453 - Degree in Mathematics
ECTS	6.0
Year	3
Semester	Second semester
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. Individual study, complemented with tutorial sessions, are fundamental in the learning process.

5.2.Learning tasks

- Lectures

27020 - Partial Differential Equations

- Problem sessions in small groups
- Tutorial sessions
- Study and work of the student

5.3.Syllabus

1. Introduction to partial differential equations
2. First order partial differential equations
3. Sturm-Liouville problems and the method of separation of variables
4. Hyperbolic equations
5. Parabolic equations
6. Elliptic equations

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

- Asmar, N.H.. Partial Differential Equations. Pearson International Edition
- Evans, Gwynne. Analytic methods for partial differential equations / G. Evans, J. Blackledge and P. Yardley . - 2nd. printing
- Strauss, Walter A.. Partial differential equations : an introduction / Walter A. Strauss New York [etc] : John Wiley and Sons, cop.1992
- Logan, J. David. Applied Partial differential equations / J. David Logan . - 2nd ed. New York [etc.] : Springer, cop. 2004
- Tikhonov, Andrei Nikolaevich. Equations of mathematical physics / by A.N. Tikhonov and A.A. Samarskii ; translated by A.R.M. Robson and P. Basu ; translation edited by D.M. Brink New York : Dover Publications, 1990