

27020 - Partial Differential Equations

Syllabus Information

Academic Year: 2019/20

Subject: 27020 - Partial Differential Equations

Faculty / School: 100 -

Degree: 453 - Degree in Mathematics

ECTS: 6.0

Year: 3

Semester: Second semester

Subject Type: Compulsory

Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

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

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, problem-solving sessions and tutorials.

4.2.Learning tasks

This course is organized as follows:

- **Lectures**
- **Problem-solving sessions.** Small groups sessions in which concepts are trained.
- **Tutorials / Autonomous work and study.** Individual study, complemented with tutorials are fundamental in the learning process.

4.3.Syllabus

This course will address the following topics:

- **Topic 1.** Introduction to partial differential equations

- **Topic 2.** First order partial differential equations
- **Topic 3.** Sturm-Liouville problems and the method of separation of variables
- **Topic 4.** Hyperbolic equations
- **Topic 5.** Parabolic equations
- **Topic 6.** Elliptic equations
- **Topic 7.** Variational formulation.

4.4.Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Faculty of Sciences website and Moodle.

4.5.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

http://biblos.unizar.es/br/br_citas.php?codigo=27020&year=2019