27202 - Mathematics

Información del Plan Docente

Academic Year	2017/18
Faculty / School	100 - Facultad de Ciencias
Degree	452 - Degree in Chemistry
ECTS	12.0
Year	1
Semester	Annual
Subject Type	Basic Education
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

The methodology followed in this course is oriented towards achievement of the learning objectives.

Students are expected to participate actively in the class. Magistral classes, problems classes and practical sessions will be provided. Further information regarding the course will be provided on the first day of class.

27202 - Mathematics

5.2.Learning tasks

The course includes 12 ECTS organized according to:

- Formative Activities 1 (7,5 ECTS): Magistral theoretical classes, with the development of practical cases.

- Formative Activities 2 (3 ECTS): Problems classes that help students to solve problems.

- Formative Activities 3 (1,5 ECTS): There will be several practical sessions using the computer to illustrate mathematical concepts and tools.

5.3.Syllabus

The course will address the following topics:

1) Differential Calculus in one variable

2) Linear systems of equations and Vector spaces

3) Diagonalization of matrices

4) Differential Calculus in several variables

5) Interpolation and nonlinear equations

6) Integral Calculus in one variable

7) Multiple Integral

8) Line and Surface Integral

9) Differential equations

5.4.Course planning and calendar

Theoretical classes: 3 hours per week in the first semester and 2 hours per week in the second semester.

Problems: 1 hour per week

Practical sessions: 1 hour per two weeks

Tutorized groups: at least one session

27202 - Mathematics

For further details concerning the timetable, classroom and further information regarding this course please refer to the "Facultad de Ciencias " website (ciencias.unizar.es)

5.5.Bibliography and recommended resources

BB	Marsden, Jerrold E.. Cálculo vectorial / Jerrold E. Marsden, Anthony J. Tromba ; Versión en español Javier Páez Cárdenas ; Colaboración técnica Purificación González Sancho . - 4a. ed México [etc.] : Addison-Wesley Longman, 1998
BB	Strang, Gilbert. Algebra lineal y sus aplicaciones / Gilbert Strang ; revisión técnica, Edmundo Palacios Pastrana . - 4ª ed. México D. F. : International Thomson, cop. 2007
BB	Zill, Dennis G.. Cálculo de varias variables / Dennis G. Zill, Warren S. Wright ; revisión técnica, Marlene Aguilar Ábalo ... [et al.] . - 4ª ed. México [etc.] : McGraw-Hill, cop. 2011
BC	Neuhauser, Claudia. Matemáticas para ciencias / Claudia Neuhauser ; traducción, Ana Torres Suárez . 2ª ed., reimp. Madrid [etc.] : Pearson Prentice Hall, D.L. 2009
BC	Pastor, Eduardo. Teoría y problemas de cálculo integral / Eduardo Pastor, Victor Varela . - [1a. ed.] Madrid : Crisser, D.L. 1974
BC	Zill, Dennis G.. Cálculo con geometría analítica / Dennis G. Zill ; traductor Eduardo Ojeda Peña ; revisores técnicos Bertha Dávila de Apodaca ... [et al.] México, D.F. : Iberoamérica, cop. 1987