



**COURSE GUIDE** 2024/25

**Faculty** 215 - Faculty of Chemistry

**Cycle** .

**Degree** GQUIMI20 - Bachelor's Degree in Chemistry

**Year** Third year

**COURSE**

26133 - Mathematical Methods for Chemistry

**Credits, ECTS:** 6

**COURSE DESCRIPTION**

The aim of this subject is to provide the students with the mathematical tools needed to model, formulate and solve problems of interest in the field of the Chemistry.

This subject presents an expansion of the basic mathematical concepts studied in the previous subjects "Matemáticas I" and "Matemáticas II y Estadística".

**COMPETENCIES/LEARNING RESULTS FOR THE SUBJECT**

In addition to the Basic (CBB1-CB5) and General (G0001-G0005) Skills, the student should develop the following specific skills:

M01CM04 - Understand and know how to use basic mathematical tools and data analysis processes in a scientific environment.

(SS) M03CM16 - Employ advanced mathematical techniques to consider and resolve matters related to chemistry (data-processing, modelling, etc.).

**Theoretical and Practical Contents**

Integral calculus with functions of several variables. Line and surface integrals  
Vector calculus. Basic concepts and application. Differential operators.  
Differential equations. Solving methods and applications.

**TEACHING METHODS**

The student is encouraged to actively participate on both theoretical and practical lectures, by posing questions, problems and so on.

Theoretical lectures will be given with the help of powerpoints files (in spanish), which can be freely accessed by the student.

**TYPES OF TEACHING**

Types of teaching	M	S	GA	GL	GO	GCL	TA	TI	GCA
Hours of face-to-face teaching	45	15							
Horas de Actividad No Presencial del Alumno/a	67,5	22,5							

**Legend:** M: Lecture-based S: Seminar GA: Applied classroom-based groups  
GL: Applied laboratory-based groups GO: Applied computer-based groups GCL: Applied clinical-based groups  
TA: Workshop TI: Industrial workshop GCA: Applied fieldwork groups

**Evaluation methods**

- End-of-course evaluation

**Evaluation tools and percentages of final mark**

- Written test, open questions 100%

**ORDINARY EXAMINATION PERIOD: GUIDELINES AND OPTING OUT**

Final exam: 100%

**EXTRAORDINARY EXAMINATION PERIOD: GUIDELINES AND OPTING OUT**

Final exam: 100%

**MANDATORY MATERIALS**

No specific material is needed.



## BIBLIOGRAPHY

### Basic bibliography

Vector calculus, J.E. Marsden & A. J. Tromba  
Differential equations, Ross.S.L.

### Detailed bibliography

No further source is required.

### Journals

As above.

### Web sites of interest

In internet there are plenty of courses and pages about these topics.  
Students are encouraged to find futher approaches in the web.

## OBSERVATIONS

No one