SUBJECT TEACHING GUIDE

G449 - MATHEMATICS II

Degree in Nautical Engineering and Maritime Transport
First Degree in Nautical Engineering and Maritime Transport

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Nautical Engineering and Maritime Transport First Degree in Nautical Engineering and Maritime Transport			Type and Year	Core. Year 1 Core. Year 1
Faculty	School of Maritime Engineering				
Discipline	Subject Area: Mathematics Basic Training Module				
Course unit title and code	G449 - MATHEMATICS II				
Number of ECTS credits allocated	6	Term		Semester based (2)	
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. MATEMATICAS, ESTADISTICA Y COMPUTACION
Name of lecturer	TOMAS MARTIN HERNANDEZ
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Other lecturers	

3.1 LEARNING OUTCOMES

- Perform basic calculations with real and complex numbers and know the most important real and complex functions.
Represent real functions using analytical calculation techniques.
Simplify geometric-analytical problems using suitable coordinates changes.
Calculate relative maxima and minima of real functions in one and two variables.
Master the basic techniques of definite and indefinite integration in one and two variables.
Apply the above techniques to calculate lengths, areas and volumes.
Solving equations and systems of differential equations with constant coefficients .
Use solving differential equations to approach and solve scientific and technical problems of basic level .
Solve astronomical positioning with one and two stars.
Acquire sufficient handling with the computer to perform the above skills quickly and effectively with your help and the appropriate mathematical software.
Binomial distribution, Poison distribution and Normal distribution.

4. OBJECTIVES

Know and handle the basic topics of mathematical analysis necessary for the mathematical modeling of basic scientific and technical problems with implications to engineering

6. COURSE ORGANIZATION

CONTENTS	
1	Real numbers and complex numbers. Absolute and relative error. First properties.
2	Analysis Calculus: Limits. Continuity. Differential calculus in one and two variables. Integration calculus in one and two variables. Differential equations with constant coefficients.
3	Astronomical positioning and loxodromic navigation.
4	Binomial distribution, Poison distribution and Normal distribution.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
First exam	Written exam	No	Yes	35,00
Questionnaires and class assignments	Activity evaluation with Virtual Media	No	No	15,00
Final exam	Written exam	Yes	Yes	50,00
TOTAL				100,00

Observations

Observations for part-time students

The part-time student enrolled will have facilities in conducting virtual activities.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

T. Martín: “Fundamentos Matemáticos”. Ediciones TGD. Santander. 2016.

T. Martín: “Fundamentos Matemáticos” (Asignatura incluida dentro del proyecto Open Course Ware de la Universidad de Cantabria).
http://ocw.unican.es/ciencias-experimentales/fundamentos-matematicos