

## SUBJECT TEACHING GUIDE

### G441 - PHYSICS II

#### Degree in Nautical Engineering and Maritime Transport

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Nautical Engineering and Maritime Transport			Type and Year	Core. Year 1
Faculty	School of Maritime Engineering				
Discipline	Subject Area: Physics Basic Training Module				
Course unit title and code	G441 - PHYSICS II				
Number of ECTS credits allocated	6	Term	Semester based (2)		
Web					
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. FISICA APLICADA				
Name of lecturer	VIDAL FERNANDEZ CANALES				
E-mail	vidal.fernandez@unican.es				
Office	E.T.S. de Náutica. Planta: + 2. DESPACHO (247)				
Other lecturers	DAVID GONZALEZ ALONSO				

### 3.1 LEARNING OUTCOMES

- Be able to solve problems related with general physics laws, and apply this ability to:
  - write technical reports
  - develop a physical model of a process
  - design and perform experiments
  - identify the key points in a physical process, and perform graphical, numerical, analytical and experimental analysis
  - check results according to the accuracy of the experimental set up

#### 4. OBJECTIVES

Acquire basic Physics knowledge  
 Explain usual phenomena by using simple models Use experimental and mathematical tools  
 Analyze diverse physical phenomena  
 Perform experiments, acquire data, analyze results and derive conclusions  
 Write precisely technical reports  
 Solve qualitatively and quantitatively related problems

#### 6. SUBJECT PROGRAM

##### CONTENTS

1	Electromagnetism
1.1	Electric field
1.2	Direct current
1.3	Magnetic field
1.4	Electromagnetic induction
2	Waves
3	Thermodynamics
3.1	Introduction to thermodynamics and zero principle
3.2	First principle of thermodynamics
3.3	Second principle of thermodynamics

#### 7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Laboratory	Laboratory evaluation	No	No	20,00
Periodic exams	Written exam	No	Yes	40,00
Final exam	Written exam	Yes	Yes	30,00
Tasks	Work	No	Yes	10,00
<b>TOTAL</b>				<b>100,00</b>

##### Observations

The pupils can discard those assigned tasks and periodic exams with a low mark, and retake their percentage in the final exam.

##### Observations for part-time students

Part-time students who can not attend the laboratory ordinary sessions can ask for a laboratory exam in order to obtain the corresponding mark (20%) .

#### 8. BIBLIOGRAPHY AND TEACHING MATERIALS

##### BASIC

Física para la ciencia y la tecnología, P. Tipler y G. Mosca (Reverté)  
 Física para ciencias e ingeniería, Serway y Jewett (Paraninfo)  
 Física Universitaria, Young Freedman/Sears Zemansky, (Pearson)  
 Material didáctico en curso moodle y web de la asignatura <http://personales.unican.es/fernancv/Fisica>

