

## SUBJECT TEACHING GUIDE

### G440 - PHYSICS II

#### Degree in Marine Engineering First Degree in Marine Engineering

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Marine Engineering First Degree in Marine Engineering			Type and Year	Core. Year 1 Core. Year 1
Faculty	School of Maritime Engineering				
Discipline	Subject Area: Physics Basic Training Module				
Course unit title and code	G440 - PHYSICS II				
Number of ECTS credits allocated	6	Term	Semester based (2)		
Web	<a href="https://personales.unican.es/fernancv/Fisica/index.htm">https://personales.unican.es/fernancv/Fisica/index.htm</a>				
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. COURSE ORGANIZATION

##### 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>