

## SUBJECT TEACHING GUIDE

### G393 - PHYSICS II

Degree in Mining Resources Engineering  
First Degree in Mining Resources Engineering

Academic year 2023-2024

#### 1. IDENTIFYING DATA

Degree	Degree in Mining Resources Engineering First Degree in Mining Resources Engineering			Type and Year	Core. Year 1 Core. Year 1
Faculty	School of Mines and Energy Engineering				
Discipline	Subject Area: Physics Basic Training Module				
Course unit title and code	G393 - PHYSICS II				
Number of ECTS credits allocated	6	Term	Semester based (2)		
Web	<a href="https://ocw.unican.es/course/view.php?id=199">https://ocw.unican.es/course/view.php?id=199</a>				
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. FISICA APLICADA
Name of lecturer	MARIA DOLORES ORTIZ MARQUEZ
E-mail	dolores.ortiz@unican.es
Office	Facultad de Ciencias. Planta: + 2. DESPACHO (PTU) (2039)
Other lecturers	Yael GUTIERREZ VELA JAVIER GONZALEZ COLSA

#### 3.1 LEARNING OUTCOMES

- The student will acquire knowledge about the general laws of the Electricity, Magnetism and Thermodynamics and its application for the resolution of problems in the engineering field.

#### 4. OBJECTIVES

Acquisition of scientific and technical basis for the compresión and development of other subjects of top courses.

Use of instruments to measure different physical magnitudes

Ability to calculate the different parameters related to the electric current and the electromagnetism.

Knowledge of the elemental magnitudes related to Thermodynamics

#### 6. COURSE ORGANIZATION

##### CONTENTS

1	<b>ELECTRICITY AND MAGNETISM</b> 1. Electric Field 2. Dielectrics and capacitors 3. Electric current 4. Magnetic field 5. Magnetism in matter 6. Magnetic induction 7. Alternating-current circuits
2	<b>THERMODYNAMICS</b> 8. Thermal equilibrium and temperatura 9. Calorimetry and First law of Thermodynamics 10. Second law of Thermodynamics

#### 7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
EXAM PART 1 (30%): Evaluation of the first part of the subject. This exam is eliminatory and will be held in the middle of the semester approximately. This exam is divided in two parts: a) questions (4 points over 10) and b) problems (6 points over 10)	Written exam	Yes	Yes	30,00
CONTINUOS ASSESSMENT TASK (20%): These taks include attendance and participation in class.	Work	No	Yes	20,00
LABORATORY (20%): The students will make three experiments in the lab and will do a presentation of one of them.	Laboratory evaluation	No	No	20,00
EXAM PART 2 (30%): Evaluation of the second part of the subject. This exam is divided in two parts: a) questions (4 points over 10) and b) problems (6 points over 10).	Written exam	Yes	Yes	30,00
TOTAL				100,00
Observations				
The remote evaluation of the works, practical laboratory exercises and written tests is foreseen, in the case of a new health alert it makes it impossible to carry out the evaluation in person.				
Observations for part-time students				
The students with part time have to make the laboratory experiments and the monitoring exams.				



## 8. BIBLIOGRAPHY AND TEACHING MATERIALS

### BASIC

- Física para la ciencia y la tecnología. VOL 1 y 2. Paul A. Tipler Ed. Reverté
- Física. VOL 1 y 2. Serway Jewett. Ed. Thompson.