

SUBJECT TEACHING GUIDE

G275 - Physics I

Degree in Industrial Electronic Engineering and Automatic Control Systems

Academic year 2019-2020

1. IDENTIFYING DATA					
Degree	Degree in Industrial Electronic Engineering and Automatic Control Systems			Type and Year	Core. Year 1
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Physics Basic Training Module				
Course unit title and code	G275 - Physics I				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. CIENCIAS DE LA TIERRA Y FISICA DE LA MATERIA CONDENSADA				
Name of lecturer	LUIS FERNANDEZ BARQUIN				
E-mail	luis.fernandez@unican.es				
Office	Facultad de Ciencias. Planta: + 2. DESPACHO PROFESORES (2016)				
Other lecturers	JOSE ANTONIO ARAMBURU-ZABALA HIGUERA MARIA CECILIA PARDO SANJURJO JAVIER ALONSO MASA				

3.1 LEARNING OUTCOMES

- The student will be able to present, analyse and interpret experimental results in short reports of technological and scientific character.
- Describe adequately the concepts as well as to establish and present written reports on the importance of models when dealing with a physical finding.
- To know accurately concepts and models associated to every subject included in the subject contents.
- To solve numerical problems associated to the contents, using different basic mathematical tools that allow to establish a correct result.
- To be able to defend orally results related to practical situations dealing with contents of the subject.

4. OBJECTIVES

This subject is aiming at providing the student beginning to perform his/her Engineering degree with the knowledge and ythe understanding of the fundamental concepts, laws, and principles ruling the Mechanics.

To appreciate Physics as a way of understanding nature and to be able to judge orally the practical situations associated to the contents of the subject.

To identify the key points of a physical phenomenon and to analyse it through an experiment , bearing in mind the proposed model and the mathematical methods.

To analyse and present the obtained results taking into account the precision of the used instruments.

6. COURSE ORGANIZATION

CONTENTS

1	T0. Introduction to Physics and Measurements.
1.1	T1. Vectors.
1.2	T2. Kinematics of the particle.
1.3	T3. Relative movement.
2	T4. Particle dynamics.
2.1	T5. Work and energy.
3	T6. Particle systems and collisions.
3.1	T7. Rigid solid dynamics.
3.2	T8. Oscillating movement.
4	T9. Heat and Thermodynamics.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Experimental lab work.	Others	No	No	15,00
Written exam of a block of subjects.	Written exam	No	Yes	25,00
Final written exam.	Written exam	Yes	Yes	60,00
TOTAL				100,00
Observations				
Not applicable.				
Observations for part-time students				
Part-time students may be exempt of experimental work at the lab. In such a case the marking will be included in the final exam.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Serway, R.A. 2005, Física para ciencias e ingeniería Vol. 1. (Thomson, Méjico)

Tipler, P.A. et al. 2001, Física para la ciencia y la tecnología Vol. 1. (Reverté, Madrid)

Young, Hugh D. y Freedman, Roger A. 2013 Física universitaria con física moderna Vol 1 (Pearson, México)

