

SUBJECT TEACHING GUIDE

G997 - Machines and Mechanisms

Degree in Industrial Electronic Engineering and Automatic Control Systems

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Industrial Electronic Engineering and Automatic Control Systems			Type and Year	Compulsory. Year 3
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Machines and Mechanisms Module in Common with the Industrial Branch				
Course unit title and code	G997 - Machines and Mechanisms				
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. INGENIERIA ESTRUCTURAL Y MECANICA				
Name of lecturer	RAMON SANCIBRIAN HERRERA				
E-mail	ramon.sancibrian@unican.es				
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 2. DESPACHO (S2047)				
Other lecturers	CARLOS AGUILAR QUINTANA				

3.1 LEARNING OUTCOMES

- The student will be able to approach the kinematic and dynamic analysis of mechanisms
- Understand the concept of kinematic synthesis and apply it to certain types of mechanisms
- El alumno será capaz de analizar sistemas mecánicos y realizar diseños de máquinas y mecanismos

4. OBJECTIVES

The general objective of the subject is to establish the relationship between geometry, topology and motion in machines and mechanisms.

To know the general aspects of plane movement in mechanisms.

To know the typology of different mechanisms used in the design of machines.

To tackle the kinematic analysis of mechanisms

6. COURSE ORGANIZATION

CONTENTS

1	Introduction
2	Plane motion
3	Analysis of 2D linkages
4	Dynamics of Machines and Mechanisms
5	Synthesis of Linkages
6	Cams
7	Gears
8	Robots
9	Introduction to MEMS

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Theoretical problems	Written exam	No	Yes	35,00
Theory and problems	Written exam	Yes	Yes	50,00
Laboratory	Work	No	No	15,00
TOTAL				100,00

Observations

264/5000

Practices and continuous assessment are not compulsory, but not doing them means giving up the percentage of your grade in the final assessment.

The exams will be carried out without documentation or electronic devices that allow communication.

In case of a new health alert by COVID-19 makes impossible the evaluation in person, remote evaluation of the works (practical laboratory exercises and written tests) would be carried out.

Observations for part-time students

Students with part-time dedication must notify the teacher if they are going to take the continuous assessment tests and laboratory practices at the beginning of the course (before the start of these activities).

Part-time students who do not carry out these activities and make it known to the teacher at the beginning of the course will be evaluated for them in the final exam.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Documentación en el aula virtual de la asignatura