SUBJECT TEACHING GUIDE

G696 - Computation Applied to Engineering

Degree in Industrial Technologies Engineering

Academic year 2024-2025

1. IDENTIFYING DATA					
Degree	Degree in Industrial Technologies Engineering			Type and Year	Compulsory. Year 3
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Further Informatics Module: Further Basic Training				
Course unit title and code	G696 - Computation Applied to Engineering				
Number of ECTS credits allocated	6	Term		Semester based (1)	
Web	https://moodle.unican.es/				
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. MATEMATICA APLICADA Y CIENCIAS DE LA COMPUTACION
Name of lecturer	PEDRO CORCUERA MIRO QUESADA
E-mail	pedro.corcuera@unican.es
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 4. DESPACHO PROFESORES (S4044)
Other lecturers	

3.1 LEARNING OUTCOMES

- - Understand and know the object oriented programming.
- Use of spreadsheets to solve engineering problems.
- Understand and know the web programming.
- Understand and know software for system modeling and simulation.
- Design and development of solutions using visual programming.

4. OBJECTIVES

- An introduction to the application of spreadsheets to solve engineering problems.
- An introduction to object oriented and visual programming to solve engineering tasks.
- An introduction to the application of system modeling and simulation software and development of industrial user interfaces.

6. SUBJECT PROGRAM

CONTENTS	
1	Object oriented programming. Applications of spreadsheets in engineering. Web programming.
2	System modeling and simulation software Visual Programming

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Continuous evaluation based on portfolio problems delivered by using Moodle platform within the virtual classroom.	Laboratory evaluation	No	Yes	100,00
TOTAL				100,00

Observations
The supplementary examination will examine all material
Observations for part-time students
Continuous evaluation

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

1. Python Programming And Numerical Methods: A Guide For Engineers And Scientists, Qingkai Kong, Timmy Siauw, Alexandre Bayen, Academic Press
2. Introduction to Programming in Python, R. Sedgewick, K. Wayne, Robert Dondero, Addison-Wesley
3. Excel Scientific and Engineering Cookbook, David Bourg, O'Reilly
4. Web Programming Step by Step, M. Stepp, J. Miller, V. Kirst, Ed. Lulu