

## SUBJECT TEACHING GUIDE

G696 - Computation Applied to Engineering

Degree in Industrial Technologies Engineering

Academic year 2023-2024

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	<a href="https://moodle.unican.es/">https://moodle.unican.es/</a>				
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. COURSE ORGANIZATION

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
<b>TOTAL</b>				<b>100,00</b>
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 Siau, 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