

SUBJECT TEACHING GUIDE

G696 - Computation Applied to Engineering

First Degree in Industrial Technologies Engineering

Academic year 2025-2026

1. IDENTIFYING DATA					
Degree	First Degree in Industrial Technologies Engineering			Type and Year	Compulsory. Year 2
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)		
Knowledge Field	Industrial engineering, mechanical engineering, automation engineering, industrial organization engineering and navigation engineering				
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					

4. OBJECTIVES

- An introduction to object oriented and visual programming to solve engineering tasks.
- An introduction to the application of spreadsheets to solve engineering problems.
- 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. Introduction to Computation and Programming Using Python, John V. Guttag, The MIT Press
2. Excel Scientific and Engineering Cookbook, David Bourg, O'Reilly
3. Web Programming Step by Step, M. Stepp, J. Miller, V. Kirst, Ed. Lulu
4. Numerical computing with Matlab. Cleve B. Moler, SIAM.