UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: MATHEMATICAL SOFTWARE FOR ELECTRICAL ENGINEERING
Code: 56445
Type: ELECTIVE
ECTS credits: 6
Degree: 414 - UNDERGRADUATE DEGREE PROGRAMME IN ELECTRICAL ENGINEERING
Academic year: 2022-23
Center: 602 - E.T.S. INDUSTRIAL ENGINEERING OF C. REAL
Group(s): 20
Year: 4
Duration: C2
Main language: Spanish
Second language:
Use of additional languages:
English Friendly: Y
Web site:
Bilingual: N

Lecturer: **JULIAN PEREZ BETETA** - Group(s): **20**

Building/Office	Department	Phone number	Email	Office hours
Politécnico/Planta 2	MATEMÁTICAS	926295435	Julian.Perez@uclm.es	

Lecturer: **VICTOR MANUEL PEREZ GARCIA** - Group(s): **20**

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2. Pre-Requisites

Not established

3. Justification in the curriculum, relation to other subjects and to the profession

Not established

4. Degree competences achieved in this course

Course competences

Code	Description
CB01	Prove that they have acquired and understood knowledge in a subject area that derives from general secondary education and is appropriate to a level based on advanced course books, and includes updated and cutting-edge aspects of their field of knowledge.
CB02	Apply their knowledge to their job or vocation in a professional manner and show that they have the competences to construct and justify arguments and solve problems within their subject area.
CB03	Be able to gather and process relevant information (usually within their subject area) to give opinions, including reflections on relevant social, scientific or ethical issues.
CB04	Transmit information, ideas, problems and solutions for both specialist and non-specialist audiences.
CB05	Have developed the necessary learning abilities to carry on studying autonomously
CEB03	Basic knowledge of the use and programming of computers, operating systems, databases and software applied to engineering.
CG03	Knowledge of basic and technological subjects to facilitate learning of new methods and theories, and provide versatility to adapt to new situations.
CG04	Ability to solve problems with initiative, decision-making, creativity, critical reasoning and to communicate and transmit knowledge, skills and abilities in the field of industrial engineering.
CG05	Knowledge required to carry out measurements, calculations, valuations, appraisals, valuations, surveys, studies, reports, work plans and other similar work.
CG06	Ability to handle specifications, regulations and mandatory standards.
CG07	Ability to analyse and assess the social and environmental impact of technical solutions.
CG08	Ability to apply quality principles and methods.
CG09	Organisational and planning skills in the field of companies and other institutions and organisations.
CG10	Capacity to work in a multilingual and multidisciplinary environment.
CT02	Knowledge and application of information and communication technology.
CT03	Ability to communicate correctly in both spoken and written form.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Use of software to solve mathematical problems in electrical engineering.

6. Units / Contents

Unit 1:

Unit 1.1

Unit 1.2

Unit 1.3

Unit 1.4

Unit 1.5

Unit 1.6

Unit 1.7
Unit 1.8
Unit 1.9
Unit 1.10
Unit 1.11

Unit 2:
Unit 2.1
Unit 2.2
Unit 2.3
Unit 2.4

Unit 3:
Unit 3.1
Unit 3.2
Unit 3.3

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	CB02 CB03 CB04 CB05 CEB03 CG04 CG08 CT02 CT03	1	25	N	-	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	CB01 CB02 CB03 CB04 CB05 CEB03 CG03 CG04 CG05 CG06 CG07 CG08 CG09 CG10 CT02 CT03	0.6	15	Y	Y	
Class Attendance (practical) [ON-SITE]	Practical or hands-on activities	CB01 CB02 CB03 CB04 CB05 CEB03 CG03 CG04 CG05 CG06 CG07 CG08 CG09 CG10 CT02 CT03	0.6	15	N	-	
Formative Assessment [ON-SITE]	Assessment tests	CB02 CB03 CB04 CB05 CEB03 CG04 CG08 CT02 CT03	0.2	5	Y	Y	
Study and Exam Preparation [OFF-SITE]	Self-study	CB02 CB03 CB04 CB05	3.6	90	N	-	
		Total:	**6**	**150**			
		Total credits of in-class work: 2.4					**Total class time hours: 60**
		Total credits of out of class work: 3.6					**Total hours of out of class work: 90**

As: Assessable training activity
Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Final test	0.00%	30.00%	
Progress Tests	30.00%	0.00%	
Laboratory sessions	70.00%	70.00%	
Total:	**100.00%**	**100.00%**	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject , an ordinary and an extraordinary one (evaluating 100% of the competences).

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours	**hours**
Unit 1 (de 3):	
Activities	**Hours**
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	10
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	7
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	8
Formative Assessment [PRESENCIAL][Assessment tests]	2
Study and Exam Preparation [AUTÓNOMA][Self-study]	60
Unit 2 (de 3):	
Activities	**Hours**
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	10
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	4
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	3

Formative Assessment [PRESENCIAL][Assessment tests]	1
Study and Exam Preparation [AUTÓNOMA][Self-study]	20

Unit 3 (de 3):	
Activities	**Hours**
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	8
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	4
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	4
Formative Assessment [PRESENCIAL][Assessment tests]	2
Study and Exam Preparation [AUTÓNOMA][Self-study]	10

Global activity	
Activities	**hours**
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	15
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
Formative Assessment [PRESENCIAL][Assessment tests]	5
Class Attendance (theory) [PRESENCIAL][Lectures]	12
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	28
Total horas:	150

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Jane Hahn	Latex for everyone	Prentice Hall		0136059082	1993	
	MATLAB resources					
	http://es.mathworks.com/academia/classroom-resources/?requestedDomain=es.mathworks.com#					
Alfonso Bueno, Gaspar D. Montesinos, Víctor M. Pérez-García	Herramientas informáticas de las matemáticas en ingeniería	Publicación Universitaria			2005	
Ernesto Aranda	Curso de Latex					
	http://matematicas.uclm.es/earanda/wp-content/uploads/downloads/2013/10/latex.pdf					
Garr Reynolds	Presentación Zen: Ideas sencillas para el diseño de presentaciones	Pearson Educación		978-8483226377	2009	