UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course:	INDUSTRIAL AUTOMATION	**Code:**	56508
Type:	CORE COURSE	**ECTS credits:**	6
Degree:	359 - UNDERGRAD. IN INDUSTRIAL ELECTRONICS AND AUTOMAT. ENGINEERING (CR)	**Academic year:**	2021-22
Center:	602 - E.T.S. INDUSTRIAL ENGINEERING OF C. REAL	**Group(s):**	20
Year:	3	**Duration:**	C2
Main language:	Spanish	**Second language:**	
Use of additional languages:		**English Friendly:**	N
Web site:		**Bilingual:**	N

Lecturer: **ANDRES SAN MILLAN RODRIGUEZ** - Group(s): **20**

Building/Office	Department	Phone number	Email	Office hours
Politécnico/2C-01	INGENIERÍA ELÉCTRICA, ELECTRÓNICA, AUTOMÁTICA Y COMUNICACIONES	Vía Teams	Andres.SanMillan@uclm.es	

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
A12	Knowledge of basic materials and technologies that assist the learning of new methods and theories and enable versatility to adapt to new situations.
A13	Ability to take the initiative to solve problems, take decisions, creativity, critical reasoning and ability to communicate and transmit knowledge, skills and abilities in Industrial Electronic Engineering and Automation.
A15	Ability to work to specifications and comply with obligatory rules and regulations.
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

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Ability to design systems of control and industrial automatization

6. Units / Contents

Unit 1:
Unit 2:
Unit 3:
Unit 4:
Unit 5:
Unit 6:
Unit 7:
Unit 8:
Unit 9:
Unit 10:
Unit 11:

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	A12 A13 A15	1.2	30	Y	Y	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	CB01 CB02	0.4	10	Y	Y	
Laboratory practice or sessions [ON-SITE]	Practical or hands-on activities	CB02 CB03 CB05	0.6	15	Y	Y	
Final test [ON-SITE]	Assessment tests	A12 CB01 CB02 CB03 CB04 CB05	0.2	5	Y	Y	
Study and Exam Preparation [OFF-SITE]	Self-study	A12 A13 A15 CB01	3.6	90	Y	Y	
		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
Theoretical exam	50.00%	50.00%	
Laboratory sessions	25.00%	25.00%	
Assessment of problem solving and/or case studies	25.00%	25.00%	
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**
Final test [PRESENCIAL][Assessment tests]	5
Unit 1 (de 11):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.7
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	1.36
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.18
Unit 2 (de 11):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.73
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	1.36
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.18
Unit 3 (de 11):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.73
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	1.36
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.18
Unit 4 (de 11):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.73
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	1.36
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.18
Unit 5 (de 11):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.73
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	1.36
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.18
Unit 6 (de 11):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.73
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	1.36
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.18
Unit 7 (de 11):	
Activities	**Hours**

Class Attendance (theory) [PRESENCIAL][Lectures]	2.73
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	1.36
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.18
Unit 8 (de 11):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.73
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	1.36
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.18
Unit 9 (de 11):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.73
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	1.36
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.18
Unit 10 (de 11):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.73
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	1.36
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.18
Unit 11 (de 11):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.73
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	1.4
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.2
Global activity	
Activities	**hours**
Final test [PRESENCIAL][Assessment tests]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	10
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	15
Class Attendance (theory) [PRESENCIAL][Lectures]	30
Total horas:	150

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Antonio Rodríguez Mata, Julián Cócera Rueda	Desarrollo de sistemas secuenciales	Paraninfo		84-283-2731-9	2000	
Richard L. Shell & Ernest l. Hall	Handbook of Industrial Automation	Marcel Dekker, Inc.		0-8247-0373-1	2000	
Andrés García	El Control Automático en la Industria	Ediciones de la Universidad de Castilla-La Mancha		84-8427-405-5	2005	
Andrés García, Pedro José Muñoz, Carlos Ruiz	Prácticas de Tecnología de la Automatización	Ediciones ETSII-UCLM		84-689-0419-4	2006	
G.K. McMillan, D.M. Considine et al.	Process / Industrial Instruments and Controls Handbook	McGraw-Hill		0-07-012582-1	1999	
Christopher T. Kilian	Modern Control Technology: Components and Systems	Delmar Thomson Learning		978-0766823587	2000	