UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: DIGITAL ELECTRONICS II
Code: 56505
Type: CORE COURSE
ECTS credits: 6
Degree: 360 - UNDERGRAD. IN INDUSTRIAL ELECTRONICS AND AUTOMAT. ENGINEERING (TO)
Academic year: 2021-22
Center: 303 - E.DE INGENIERÍA INDUSTRIAL Y AEROESPOACIAL DE TOLEDO
Group(s): 40
Year: 3
Duration: First semester
Main language: Spanish
Second language: English
Use of additional languages:
English Friendly: Y
Web site:
Bilingual: N

Lecturer: **JOSE MANUEL GILPEREZ AGUILAR** - Group(s): **40**

Building/Office	Department	Phone number	Email	Office hours
Sabatini 1.57	INGENIERÍA ELÉCTRICA, ELECTRÓNICA, AUTOMÁTICA Y COMUNICACIONES	5721	josemanuel.gilperez@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
A02	To know how to apply knowledge to work or vocation in a professional manner and possess the competences that are usually demonstrated by the formulation and defence of arguments and the resolution of problems in the field of study.
A05	To have developed the learning skills necessary to undertake subsequent studies with a greater degree of autonomy.
A07	Knowledge of Information Technology and Communication (ITC).
A08	Appropriate level of oral and written communication.
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 Engineering and Automation.
A15	Ability to work to specifications and comply with obligatory rules and regulations.
D03	Knowledge of the fundamentals and applications of digital electronics and microprocessors.
D07	Knowledge and ability for modelling and simulation of systems.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Ability to analyze and design digital systems based on microprocessors

6. Units / Contents

Unit 1:
- **Unit 1.1**
- **Unit 1.2**
- **Unit 1.3**
- **Unit 1.4**

Unit 2:
- **Unit 2.1**
- **Unit 2.2**
- **Unit 2.3**
- **Unit 2.4**
- **Unit 2.5**
- **Unit 2.6**

Unit 3:
- **Unit 3.1**
- **Unit 3.2**
- **Unit 3.3**
- **Unit 3.4**
- **Unit 3.5**

Unit 3.6
Unit 3.7
Unit 3.8
Unit 3.9
Unit 4:
Unit 4.1
Unit 4.2
Unit 4.3
Unit 4.4
Unit 4.5
Unit 4.6
Unit 4.7

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		1	25	N	-	
Class Attendance (practical) [ON-SITE]	Case Studies		0.72	18	N	-	
Laboratory practice or sessions [ON-SITE]	project-based learning		0.6	15	Y	Y	
Study and Exam Preparation [OFF-SITE]	Self-study		1	25	N	-	
Analysis of articles and reviews [OFF-SITE]	project-based learning		0.7	17.5	N	-	
Writing of reports or projects [OFF-SITE]	project-based learning		1.4	35	N	-	
Progress test [ON-SITE]	Assessment tests		0.08	2	Y	N	
Writing of reports or projects [OFF-SITE]	Cooperative / Collaborative Learning		0.34	8.5	Y	N	
Practicum and practical activities report writing or preparation [OFF-SITE]	project-based learning		0.16	4	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
Final test	0.00%	70.00%	
Practical exam	0.00%	30.00%	
Total:	**0.00%**	**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 4):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	5
Group 40:	
Initial date: 13-09-2021	**End date:** 22-09-2021
Unit 2 (de 4):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	7.5
Progress test [PRESENCIAL][Assessment tests]	1
Group 40:	
Initial date: 23-09-2021	**End date:** 01-10-2021
Unit 3 (de 4):	

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	8
Class Attendance (practical) [PRESENCIAL][Case Studies]	8
Study and Exam Preparation [AUTÓNOMA][Self-study]	12.5
Analysis of articles and reviews [AUTÓNOMA][project-based learning]	5
Progress test [PRESENCIAL][Assessment tests]	1
Group 40:	
Initial date: 04-10-2021	**End date:** 29-10-2021

Unit 4 (de 4):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	7
Class Attendance (practical) [PRESENCIAL][Case Studies]	10
Laboratory practice or sessions [PRESENCIAL][project-based learning]	15
Analysis of articles and reviews [AUTÓNOMA][project-based learning]	12.5
Writing of reports or projects [AUTÓNOMA][project-based learning]	35
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	8.5
Practicum and practical activities report writing or preparation [AUTÓNOMA][project-based learning]	4
Group 40:	
Initial date: 01-11-2021	**End date:** 22-12-2021

Global activity	
Activities	**hours**
Writing of reports or projects [AUTÓNOMA][project-based learning]	35
Progress test [PRESENCIAL][Assessment tests]	2
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	8.5
Class Attendance (practical) [PRESENCIAL][Case Studies]	18
Class Attendance (theory) [PRESENCIAL][Lectures]	25
Laboratory practice or sessions [PRESENCIAL][project-based learning]	15
Study and Exam Preparation [AUTÓNOMA][Self-study]	25
Analysis of articles and reviews [AUTÓNOMA][project-based learning]	17.5
Practicum and practical activities report writing or preparation [AUTÓNOMA][project-based learning]	4
Total horas: 150	

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Massimo Banzi	Getting Started with Arduino	O'Reilly Media		978-0596155513	2009	
N. Senthil Kumar, M. Saravanan, S. Jeevananthan	Microprocessors And Microcontrollers	Oxford University Press		978-0198066477	2011	
Simon Monk	Programming Arduino Next Steps: Going Further with Sketches	McGraw-Hill/TAB Electronics		978-0071830256	2013	
Steven F. Barrett	Arduino Microcontroller: Processing for Everyone!	Morgan & Claypool Publishers		978-1608458592	2012	
Enrique Mandado	Microcontroladores PIC	Marcombo		978-8426714312	2007	
Enrique Palacios	Microcontrolador PIC16f84 Desarrollo De Proyectos	Rama		978-84-7897-917-2	2009	