UNIVERSIDAD DE CASTILLA - LA MANCHA
GUÍA DOCENTE

1. General information

Course: MICROTECHNOLOGY

Type: ELECTIVE

Degree: 360 - UNDERGRAD. IN INDUSTRIAL ELECTRONICS AND AUTOMAT. ENGINEERING (TO)

Center: 303 - E.DE INGENIERÍA INDUSTRIAL Y AEROESPOACIAL DE TOLEDO

Year: Sin asignar

Main language: Spanish

Use of additional languages:

Web site:

Code: 56527

ECTS credits: 6

Academic year: 2023-24

Group(s): 40

Duration: C2

Second language: English

English Friendly: Y

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.
A04	To be able to transmit information, ideas, problems and solutions to a specialized audience.
A05	To have developed the learning skills necessary to undertake subsequent studies with a greater degree of autonomy.
A06	Command of a second foreign language at B1 level of the Common European Framework of Reference for Languages.
A07	Knowledge of Information Technology and Communication (ITC).
A08	Appropriate level of oral and written communication.
A09	Ethical and professional commitment.
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.
A18	To have organization and planning skills used in businesses and other institutions and organizations.
A19	Ability to work in a multilingual and multidisciplinary environment.
H3	Microelectronics. Design and production of integrated circuits.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Supplement basic and specific training oriented at a particular specialization of an open, multidisciplinary nature with a direct application to the professional field

Acquire knowledge and skills in the use of information tools that enable the student to better use the knowledge acquired. Widen these improvements through new applications autonomously.

Knowledge of Optoelectronic and Micromechanical systems

Knowledge of the tools and techniques of design and manufacture of integrated circuits

Additional outcomes

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 4:
        Unit 4.1
        Unit 4.2
        Unit 4.3

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	A05 A06 A07 A08 A09 A12 A13 A18 H3	0.9	22.5	N	-	
Problem solving and/or case studies [ON-SITE]	Case Studies	A05 A06 A07 A08 A09 A12 A13 A18 H3	0.4	10	N	-	
Class Attendance (practical) [ON-SITE]	Case Studies	A05 A06 A07 A08 A09 A12 A13 A18 H3	0.3	7.5	Y	Y	
Group tutoring sessions [ON-SITE]	Workshops and Seminars	A05 A06 A07 A08 A09 A12 A13 A18 H3	0.6	15	N	-	
Progress test [ON-SITE]	Assessment tests	A05 A06 A07 A08 A09 A12 A13 A18 H3	0.2	5	Y	Y	
Study and Exam Preparation [OFF-SITE]	Self-study	A05 A06 A07 A08 A09 A12 A13 A18 H3	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
Theoretical papers assessment	0.00%	15.00%	
Laboratory sessions	0.00%	15.00%	
Final test	0.00%	70.00%	
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]	7
Problem solving and/or case studies [PRESENCIAL][Case Studies]	5
Class Attendance (practical) [PRESENCIAL][Case Studies]	2.5
Group tutoring sessions [PRESENCIAL][Workshops and Seminars]	5
Progress test [PRESENCIAL][Assessment tests]	2
Study and Exam Preparation [AUTÓNOMA][Self-study]	30

Unit 2 (de 4):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	7
Problem solving and/or case studies [PRESENCIAL][Case Studies]	5
Class Attendance (practical) [PRESENCIAL][Case Studies]	2.5
Group tutoring sessions [PRESENCIAL][Workshops and Seminars]	5
Progress test [PRESENCIAL][Assessment tests]	2
Study and Exam Preparation [AUTÓNOMA][Self-study]	30

Unit 3 (de 4):	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	8.5

Class Attendance (practical) [PRESENCIAL][Case Studies]	2.5
Group tutoring sessions [PRESENCIAL][Workshops and Seminars]	5
Progress test [PRESENCIAL][Assessment tests]	1
Study and Exam Preparation [AUTÓNOMA][Self-study]	30

Global activity

Activities	hours
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
Class Attendance (theory) [PRESENCIAL][Lectures]	22.5
Problem solving and/or case studies [PRESENCIAL][Case Studies]	10
Class Attendance (practical) [PRESENCIAL][Case Studies]	7.5
Group tutoring sessions [PRESENCIAL][Workshops and Seminars]	15
Progress test [PRESENCIAL][Assessment tests]	5
	Total horas: 150

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Karl Goser	Nanoelectronics and Nanosystems: From Transistors to Molecular and Quantum Devices	Springer		3540404430		
Ki Bang Lee	Principles of microelectromechanical systems	Wiley IEEE press		0470466340	2011	
S.A. Campbell	The Science and Engineering of Microelectronic Fabrication	Oxford University Press		0195136055	2001	
Wai-Kai Chen	The VLSI handbook	CRC Press		084934199X	2007	
George W. Hanson	Fundamentals of Nanoelectronics	Prentice Hall		9780131957084	2008	