



1. General information

Course: COMPUTER ENGINEERING

Type: BASIC

Degree: 418 - UNDERGRAD. IN INDUSTRIAL ELECTRONICS AND AUTOMAT. ENGINEERING

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

Year: 1

Main language: Spanish

Use of additional languages:

Web site:

Code: 56304

ECTS credits: 6

Academic year: 2023-24

Group(s): 41

Duration: First semester

Second language: English

English Friendly: N

Bilingual: N

Lecturer: JUAN MORENO GARCIA - Group(s): 41				
Building/Office	Department	Phone number	Email	Office hours
Sabatini / 1.56	TECNOLOGÍAS Y SISTEMAS DE INFORMACIÓN	926051653	juan.moreno@uclm.es	
Lecturer: FRANCISCO MOYA FERNANDEZ - Group(s): 41				
Building/Office	Department	Phone number	Email	Office hours
Sabatini 3ª planta	TECNOLOGÍAS Y SISTEMAS DE INFORMACIÓN	926295483	francisco.moya@uclm.es	
Lecturer: ENCARNACION MARIA MOYANO AVILA - Group(s): 41				
Building/Office	Department	Phone number	Email	Office hours
Sabatini / 1.54	TECNOLOGÍAS Y SISTEMAS DE INFORMACIÓN	926051487	encarnacion.moyano@uclm.es	
Lecturer: DAVID MUÑOZ VALERO - Group(s): 41				
Building/Office	Department	Phone number	Email	Office hours
Sabatini / 1.54	TECNOLOGÍAS Y SISTEMAS DE INFORMACIÓN		David.Munoz@uclm.es	

2. Pre-Requisites

Not established

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

The skills provided to the student in this subject give him the ability to face and solve basic problems that have to do with Information and Communication Technologies, both during the course of the degree in the subjects that make use of this type of technologies as well as during the development of their profession where Information and Communication Technologies currently play a predominant role.

4. Degree competences achieved in this course

Course competences

Code	Description
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.
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

Basic knowledge of the use and programming of computers, operating systems, databases and software applied to engineering.

Knowledge of information and communication technology (ICT).

Knowledge of basic and technological subjects, leading to understanding of new methods and theories, facilitating the versatility to adapt to new situations.

6. Units / Contents

Unit 1: Computer basis.

Unit 2: Operating systems and databases.

Unit 3: Introduction to computer programming.

Unit 4: Data structures in programming.

Unit 5: Problem solving methods.

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]	Combination of methods	CB02 CB03 CB04 CB05 CEB03 CG03 CG04 CT02 CT03	1.12	28	N		The theoretical classes will introduce concepts of the program with the expository method that will be reinforced with the study and learning of cases, works and examples that reinforce their understanding. Group tutorials will be held.
Problem solving and/or case studies [ON-SITE]	Combination of methods	CB02 CB03 CB04 CB05 CEB03 CG03 CG04 CT02 CT03	0.48	12	N		The resolution of exercises and problems will allow applying the theoretical concepts learned.
Class Attendance (practical) [ON-SITE]	Practical or hands-on activities	CB02 CB03 CB04 CB05 CEB03 CG03 CG04 CT02 CT03	0.6	15	N		The practice sessions will be held fortnightly in computer rooms, with a duration of 2 hours.
Formative Assessment [ON-SITE]	Assessment tests	CB02 CB04 CB05 CEB03 CG04 CT03	0.2	5	Y	Y	The evaluation of the subject will be carried out.
Study and Exam Preparation [OFF-SITE]	Self-study	CB02 CB03 CG03 CG04 CT02	3.6	90	N		The subject requires a considerable amount of autonomous work.
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
Assessment of activities done in the computer labs	30.00%	30.00%	The practices developed in the computer room will be evaluated through partial tests. To pass them, it will be necessary to obtain 4 points out of 10. Non-continuous assessment students will be examined about this part in the final test date.
Final test	70.00%	70.00%	It will consist of an exam that covers both theoretical and practical concepts. To pass it, it will be necessary to obtain 4 points out of 10. It will be held on the date of the ordinary/extraordinary call.
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).

Evaluation criteria for the final exam:

Continuous assessment:

Students who pass the partial tests will not have to examine their content in the ordinary or extraordinary call. Those who do not pass them, will be able to recover them on the final test date.

The grade to pass the course will be greater than or equal to 5.

The evaluation grades obtained are not kept for other academic courses.

Non-continuous evaluation:

Students who have not taken or passed the partial tests (considered non-continuous evaluation) may be examined in both parts of the evaluation system in the ordinary or extraordinary call on the date established for the final exam.

The grade to pass the course will be greater than or equal to 5.

The evaluation grades obtained are not kept for other academic courses.

Specifications for the resit/retake exam:

Students who have not passed the ordinary call may be examined in one or both parts of the evaluation system, keeping the grade of that part with a grade equal to or greater than 4 of the ordinary call.

The grade to pass the course will be greater than or equal to 5.

The evaluation grades obtained are not kept for other academic courses.

Specifications for the second resit / retake exam:

The evaluation will be carried out through the tests corresponding to the evaluation system, without considering qualifications in previous calls.

The evaluation grades obtained are not kept for other academic courses.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents	
Hours	hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	30
Problem solving and/or case studies [PRESENCIAL][Combination of methods]	10
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	15
Formative Assessment [PRESENCIAL][Assessment tests]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
General comments about the planning: The planning guideline may be modified if the particular circumstances so advise.	
Global activity	
Activities	hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	30
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	15
Formative Assessment [PRESENCIAL][Assessment tests]	5
Problem solving and/or case studies [PRESENCIAL][Combination of methods]	10
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
Total horas: 150	

10. Bibliography and Sources							
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description	
Moya Fernández, Francisco	Informática para ingenieros				2017	Libro de texto interactivo recopilado a partir de notas de clase. Incluye temas relativos a programación con Python.	
	http://rawgit.com/FranciscoMoya/informatica-doc/gh-pages/docs/index.html						
Marzal Varó, Andrés y otros	Introducción a la programación con Python	Universitat Jaume I		9788469711781	2014	Libro de contenido libre, nivel introductorio.	
	http://repositori.uji.es/xmlui/handle/10234/102653						
Downey, Allen y otros	Aprenda a pensar como un programador con Python	Green Tea Press		0-9716775-0-6	2002	Libro introductorio en castellano, de contenido libre.	
	https://argentinaenpython.com/quiero-aprender-python/aprenda-a-pensar-como-un-programador-con-python.pdf						
Gutttag, John V.	Introduction to Computation and Programming using Python	MIT Press		9780-262-51963-2	2013	Excelente libro de introducción a la programación con Python.	
	https://mitpress.mit.edu/books/introduction-computation-and-programming-using-python-third-edition						
Pilgrim, Mark	Inmersión en Python 3				2009	Libro de contenido libre y nivel avanzado sobre programación en Python.	
	http://www.jmgaguilera.com/inmersionenpython3html/						
Comunidad Python	Documentación de referencia de Python				2022	Incluye toda la documentación del lenguaje.	
	http://docs.python.org/						
Prieto Espinosa, Alberto y otros	Introducción a la Informática	McGraw-Hill, Interamericana de España		84-481-4624-7	2006		
Departamento de informática. Universidad Oviedo	Fundamentos de informática				2015	Libro docente que incluye fundamentos básicos de informática e iniciación a la programación con Python.	
	http://di002.edv.uniovi.es/~villar/Jose_R._Villar/Teaching_Resources/Entries/2016/9/14_Computer_Basics_2016-17_EPM_files/Fundamentos-Informatica.pdf						
Forouzan, Behrouz	Introducción a la ciencia de la computación	Thomson		970-686-285-4	2003		
Pes, Carlos	Pseudocódigo para principiantes: Teoría, ejemplos y ejercicios resueltos de diseño de algoritmos en pseudocódigo con Pselnt			979-8447835491	2022		
	https://www.abrirllave.com/principiantes/pseudocodigo/						