UNIVERSIDAD DE CASTILLA - LA MANCHA
GUÍA DOCENTE

1. General information

Course: COMPUTER ENGINEERING		**Code:** 56304	
Type: BASIC		**ECTS credits:** 6	
Degree: 419 - UNDERGRADUATE DEGREE PROG. IN MECHANICAL ENGINEERING		**Academic year:** 2023-24	
Center: 106 - SCHOOL OF MINING AND INDUSTRIAL ENGINEERING		**Group(s):** 56	
Year: 1		**Duration:** First semester	
Main language: Spanish		**Second language:**	
Use of additional languages:		**English Friendly:** Y	
Web site:		**Bilingual:** N	

Lecturer: **JULIO ALBERTO LOPEZ GOMEZ** - Group(s): **56**

Building/Office	Department	Phone number	Email	Office hours
2.08	TECNOLOGÍAS Y SISTEMAS DE INFORMACIÓN	Ext.3351	JulioAlberto.Lopez@uclm.es	To be published at the beginning of the term.

2. Pre-Requisites

No prerequisites have been described for the computer science course.

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

The competences provided to the student in this subject give him/her the ability to face and solve basic problems related to Information and Communication Technologies, both during the course of the degree in the subjects that make use of this type of technologies and during the development of his/her profession where Information and Communication Technologies currently play a preponderant 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

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

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

Knowledge of information and communication technology (ICT).

6. Units / Contents

Unit 1: Computer fundamentals

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	-	It corresponds to the theoretical-practical sessions during the practical sessions of the subject during the sessions established in the timetable v academic timetable
Problem solving and/or case studies [ON-SITE]	Combination of methods	CB02 CB03 CB04 CB05 CEB03 CG03 CG04 CT02 CT03	0.48	12	Y	N	Problem solving and case studies on each of the topics that make up the syllabus. will be carried out in class sessions, and students may be left to work on their own outside the classroom.
Class Attendance (practical) [ON-SITE]	Practical or hands-on activities	CB02 CB03 CB04 CB05 CEB03 CG03 CG04 CT02 CT03	0.6	15	Y	Y	Face-to-face practical sessions in the laboratory
Formative Assessment [ON-SITE]	Assessment tests	CB02 CB03 CB04 CB05 CEB03 CG03 CG04 CT02 CT03	0.2	5	Y	Y	It corresponds to the completion of the different partial tests of the course.
Study and Exam Preparation [OFF-SITE]	Self-study	CB02 CB03 CB05 CEB03 CG03 CG04 CT02 CT03	3.6	90	Y	N	hours of autonomous student work for the monitoring and evaluation of the course
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
Mid-term tests	60.00%	0.00%	Performance of three partial tests. The first one on topic 1, the second one on topics 3 and 4 and the last one on topic 5.
Laboratory sessions	30.00%	30.00%	Performance of laboratory practices corresponding to topics 3, 4 and 5.
Final test	0.00%	60.00%	Final test structured in the same way as the partial tests taken by students with continuous assessment.
Projects	10.00%	10.00%	Completion of a theoretical and practical work on the content of Topic 2.
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:

In the ordinary call, students will have three partial tests that will be eliminatory, i.e., if a partial is passed, this subject will not be examined in the final exam.
In order to pass the course in the ordinary call, a minimum of 40% of the maximum grade must be obtained in each of the midterm exams and in the work, all of which are compulsory activities.
If this requirement is not met, even if the overall grade of the course after the weighted average of all the evaluable parts is higher than 5 out of 10, the grade in the minutes will be Failed (4). In the case that the weighted average does not reach 4, the grade will be the one obtained from the weighted average of all the activities.
The recovery of the partial tests will be possible in the final test, while the recovery of the work, will be possible by means of the realization of a new delivery that will only be realized when at least a 40% of maximum qualification of each one of the partial tests has been obtained previously.
The practices will also have an evaluable character, although not obligatory nor recoverable (in case of not realizing them, the student renounces to that 30% of the qualification).
It is strictly forbidden to use any type of electronic device (cell phone, tablets, smartwatches, etc), not even allowed to have them during the exam, even turned off.
In case of non-compliance with this rule, the grade will be Fail (0), even if the terminal is turned off. This rule is applicable for all the exams and also for the partial exams.

Non-continuous evaluation:

In the case of students who do not have continuous evaluation, the criteria will be the same as for continuous evaluation, except that the part of the evaluation corresponding to the partial tests will be examined in a single final exam that will be structured as three partial tests and that will be subject to the same criteria that have been established for the partial tests of the continuous evaluation.
The practicals will also have an evaluable character, although they are neither obligatory nor recoverable (in case of not taking them, the student renounces to that 30% of the grade). The work is compulsory, evaluable and recoverable, facilitating the realization of the same to the students who do not have continuous evaluation on dates agreed between students and teacher.

Specifications for the resit/retake exam:
In the extraordinary call, the student will be able to examine those tests that have not been passed during the ordinary call. It will not be necessary to take the tests passed in the ordinary exam.
Specifications for the second resit / retake exam:
In the special final exam, the student will be able to take a written exam for the course as a whole.

9. Assignments, course calendar and important dates
Not related to the syllabus/contents
Hours	hours

Class Attendance (theory) [PRESENCIAL][Combination of methods]	28
Problem solving and/or case studies [PRESENCIAL][Combination of methods]	12
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	15
Formative Assessment [PRESENCIAL][Assessment tests]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	90

Global activity

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

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Javier Albusac, D. Vallejo, C. gonzále	Informática en Grados de Ingeniería:Teoría y Ejercicios Resueltos http://www.bubok.es/libros/227844/Informatica-en-Grados-de-Ingenieria	Bubook		978-84-686-4286-4	2013	
Moreno, Juan., Rodríguez Luis., Bravo, Crescencio., Jiménez, Luis	Fundamentos de Informática para Ingenieros. Conceptos Teóricos y Problemas Resueltos	Arcelande Editores S.L			2001	
Matilde Celma Giménez, Juan Carlos Casamayor Ródenas, Laura Mota Herranz	Bases de Datos Relacionales	Prentice-Hall			2004	
David C. Kuncicky	MATLAB Programming	Prentice Hall		0-13-035127-X	2003	
Silberschatz, Abraham.	Sistemas operativos /	Limusa Wiley,		968-18-6168-X	2004	
Patterson, D.; Hennessy, J.L	Arquitectura y diseño de computadores	McGraw-Hill			2000	
Scott T, Smith	MATLAB, Advanced GUI Development	Dog ear		1-59858-181-3	2006	
Angulo Usategui, José María (1943-)	Fundamentos y estructura de computadores /	Thomson,		84-9732-180-4	2003	
Stallings, William	Organización y Arquitectura de Computadores. Diseño para optimizar prestaciones	Prentice-Hall			2006	
Prieto Espinosa, Alberto y otros	Introducción a la informática	McGraw-Hill, Interamericana de España		84-481-1624-7	2006	
Pes, Carlos	PSEUDOCÓDIGO PARA PRINCIPIANTES: Teoría, ejemplos y ejercicios resueltos de diseño de algoritmos en pseudocódigo con PseInt			979-8447835491		
Forouzan, Behrouz	Introducción a la ciencia de la computación	Thomson		970-686-285-4	2003	