UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: INFORMATION SYSTEMS
Code: 42309
Type: CORE COURSE
ECTS credits: 6
Degree: 406 - UNDERGRADUATE DEGREE IN COMPUTER SCIENCE AND ENGINEERING (AB)
Academic year: 2022-23
Center: 604 - SCHOOL OF COMPUTER SCIENCE AND ENGINEERING (AB)
Group(s): 10 11 12 13
Year: 1
Duration: C2
Main language: Spanish
Second language: English
Use of additional languages:
English Friendly: N
Web site:
Bilingual: Y

Lecturer: **JOSÉ LUIS DE LA VARA GONZÁLEZ** - Group(s): **13**

Building/Office	Department	Phone number	Email	Office hours
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Lecturer: **JOAQUIN FERNANDEZ MARTINEZ** - Group(s): **10 11 12**

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Lecturer: **VICENTE SAHORI ALFARO** - Group(s): **10 11 12**

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2. Pre-Requisites

This course is based on the competences and knowledge acquired in:

- Fundamentals of Programming I (*Fundamentos de Programación I*; to have the basis in the software field).
- Fundamentals of Business Management (*Fundamentos de Gestión Empresarial*; to have the basis in the business field).

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

This course is integrated in the area of "Software Engineering, Information Systems, and Intelligent Systems" of the curriculum and provides a transversal and integrative vision of the Computer Science context, relating the business and organisational aspects with the specific objectives of IT (Information Technology) systems. To this end, the basic concepts managed in IT (engineering, abstraction, model, system, project, process, information) are introduced, to then come up with the idea of a computer system (hardware + software + data). From this basis, the more global vision of an information system is developed as a special type of socio-technical system (with technological, human, social, and organizational elements) whose objective is to satisfy the information needs of an organization.

Thanks to the horizontal view of the computing activity that the course contributes to, the student can better understand the role that each aspect of Computer Science plays in the whole.

Likewise, the student will know, from the first year, some of the key concepts that will be addressed in detail throughout the different courses of the degree.

4. Degree competences achieved in this course

Course competences

Code	Description
BA04	Basic knowledge about the uses and programming of computers, operating systems, data bases, and digital programmes with applications in engineering.
CO05	Knowledge, administration, and maintenance of systems, services and digital systems.
CO13	Knowledge and application of the required tools for the storage, process, and access to informational systems, even web based ones.
INS03	Ability to manage information and data.
PER01	Team work abilities.
SIS05	Creativity.

5. Objectives or Learning Outcomes

Course learning outcomes

Description
Knowledge of security problems in information systems, as well as the main techniques to solve them.
Knowledge and use of the technologies that support the construction and use of information systems.
Identification, modelling, and specifications of software and business requirements for the construction of software systems that implement them.
Knowledge of the role of information systems in companies, as well as the main types and characteristics.

6. Units / Contents

Unit 1: Introduction to information systems
- **Unit 1.1** What is an information system?
- **Unit 1.2** Information system model
- **Unit 1.3** Classification of information systems

Unit 2: Information management
- **Unit 2.1** What is a database?
- **Unit 2.2** Database management systems
- **Unit 2.3** Relational databases: The relational model
- **Unit 2.4** Data models: The entity-relationship model
- **Unit 2.5** Relational languages: Introduction to SQL

Unit 3: Development of computer systems
- **Unit 3.1** Introduction: Fundamental concepts
- **Unit 3.2** Software process models

Unit 4: Security in information systems
- **Unit 4.1** Introduction to computer security
- **Unit 4.2** Types of encryption
- **Unit 4.3** Basic protection measures

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Writing of reports or projects [OFF-SITE]	Group Work	PER01 SIS05	1.4	35	Y	N	Supervised teamwork. For assessment at the ordinary-call and extraordinary-call exams, the students must let the lecturer know at least 20 days before the date of the exam for activity organization.
Study and Exam Preparation [OFF-SITE]	Self-study	CO13 INS03	2.2	55	N	-	
Project or Topic Presentations [ON-SITE]	Lectures	PER01	0.12	3	Y	N	Presentation in teams. For assessment at the ordinary-call and extraordinary-call exams, the students must let the lecturer know at least 20 days before the date of the exam for activity organization.
Class Attendance (theory) [ON-SITE]	Lectures	CO13	1.36	34	N	-	
Computer room practice [ON-SITE]	Self-study	CO05	0.78	19.5	Y	N	Lab sessions guided by the lecturer
Progress test [ON-SITE]		BA04	0.14	3.5	Y	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
Test	50.00%	50.00%	Tests (online or on paper) about: - Unit 1 - Unit 2 - Unit 3 - Unit 4
Assessment of problem solving and/or case studies	30.00%	30.00%	Practical tests about: - Unit 2 (SQL) - Unit 4
Other methods of assessment	20.00%	20.00%	Teamwork assessment of: - Presentation about Unit 1 - Project for Unit 3
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:

The grade for the ordinary call will be obtained via continuous evaluation throughout the semester. The tests during the continuous evaluation can be taken both in theoretical hours and in lab hours, according to the lecturer. The dates of the tests will be announced sufficiently in advance.

By default, the students will be evaluated through continuous assessment. If a student prefers to change to non-continuous evaluation, then the student must indicate so at the following link https://www.esiiab.uclm.es/alumnos/evaluacion.php before the end of the term's lecture period.

The course consists of four units whose weight in the evaluation is as follows:
- Unit 1: Introduction to information systems: 10%
- Unit 2: Information management: 40%
- Unit 3: Development of computer systems: 30%
- Unit 4: Security in information systems: 20%

Each module will be evaluated by means of activities and tests. The student will pass the course if the sum of the marks of the different evaluation elements in the different modules results in a grade greater than or equal to 5 points.

Non-continuous evaluation:

All the activities are recoverable.

Specifications for the resit/retake exam:

There will be a written exam about all the contents of the course, under the same conditions as in the ordinary call. This exam will correspond to the 80% of the final course grade.

For the remaining 20%, the student will have two options:
- To keep all the marks obtained during ordinary-call evaluation regarding Writing of reports or projects, Project or topic presentations, and Assessment of problem solving and/or case studies.
- To perform a new activity scheduled for the extraordinary call. In this case, the student must let the lecturer know in advance (at least 20 days before the date of the extraordinary-call exam) for activity planning, and for team arrangement if needed. This activity will consider the same items as for the ordinary call in the previous point. The activity will be planned and performed according to criteria defined by the course lecturers, establishing the necessary deadlines.

Specifications for the second resit / retake exam:

In this call, the contents of the course will be evaluated in a global written exam.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours	**hours**

General comments about the planning: This course schedule is APPROXIMATE. It could vary throughout the academic course due to teaching needs, bank holidays, etc. A weekly schedule will be properly detailed and updated on the online platform (Virtual Campus). Note that all the lectures, practice sessions, exams and related activities performed in the bilingual groups will be entirely taught and assessed in English. Classes will be scheduled in 3 sessions of one hour and a half per week. Evaluation activities or catch-up classes may exceptionally be scheduled in the afternoon.

Unit 1 (de 4): Introduction to information systems

Activities	**Hours**
Writing of reports or projects [AUTÓNOMA][Group Work]	15
Study and Exam Preparation [AUTÓNOMA][Self-study]	6
Project or Topic Presentations [PRESENCIAL][Lectures]	3
Class Attendance (theory) [PRESENCIAL][Lectures]	7
Computer room practice [PRESENCIAL][Self-study]	4.5
Progress test [PRESENCIAL][]	.5

Unit 2 (de 4): Information management

Activities	**Hours**
Study and Exam Preparation [AUTÓNOMA][Self-study]	23
Class Attendance (theory) [PRESENCIAL][Lectures]	10
Computer room practice [PRESENCIAL][Self-study]	6
Progress test [PRESENCIAL][]	2

Unit 3 (de 4): Development of computer systems

Activities	**Hours**
Writing of reports or projects [AUTÓNOMA][Group Work]	20
Study and Exam Preparation [AUTÓNOMA][Self-study]	22
Class Attendance (theory) [PRESENCIAL][Lectures]	8.5
Computer room practice [PRESENCIAL][Self-study]	4.5
Progress test [PRESENCIAL][]	.5

Unit 4 (de 4): Security in information systems

Activities	**Hours**
Study and Exam Preparation [AUTÓNOMA][Self-study]	4
Class Attendance (theory) [PRESENCIAL][Lectures]	8.5
Computer room practice [PRESENCIAL][Self-study]	4.5
Progress test [PRESENCIAL][]	.5

Global activity

Activities	**hours**
Writing of reports or projects [AUTÓNOMA][Group Work]	35
Computer room practice [PRESENCIAL][Self-study]	19.5
Project or Topic Presentations [PRESENCIAL][Lectures]	3
Study and Exam Preparation [AUTÓNOMA][Self-study]	55
Progress test [PRESENCIAL][]	3.5
Class Attendance (theory) [PRESENCIAL][Lectures]	34
Total horas:	150

10. Bibliography and Sources

Author(s)	**Title/Link**	**Publishing house**	**Citv**	**ISBN**	**Year**	**Description**
	Nuevas tendencias en los	Editorial				

Elena Ruiz Larocha	sistemas de información	Universitaria Ramón Areces	9788499612690	2017
Rod Stephens	Beginning Software Engineering	Wrox	B00UANX0E0	2015
Raymond McLeod, Jr-	Management Information Systems (10th Edition)	Prentice Hall	9780131889187	2007
Pere Chardi García	SQL Fácil	Marcombo	978-8426721006	2014