

**1. General information****Course:** INTERACTIVE SYSTEMS DESIGN**Type:** ELECTIVE**Degree:** 407 - DEGREE PROGRAMME IN COMPUTER SCIENCE ENGINEERING**Center:** 108 - SCHOOL OF COMPUTER SCIENCE OF C. REAL**Year:** 4**Main language:** Spanish**Use of additional languages:****Web site:****Code:** 42347**ECTS credits:** 6**Academic year:** 2020-21**Group(s):** 20**Duration:** First semester**Second language:****English Friendly:** Y**Bilingual:** N**Lecturer:** JOSE BRAVO RODRIGUEZ - Group(s): 20

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2. Pre-Requisites

In order to take the course of Interactive Systems Design it is recommended that the student has passed the course of Human-Computer Interaction I (third year). As it is a fourth year subject, the practices and problems that will be carried out presuppose some basic computer knowledge as far as programming and modeling is concerned.

3. Justification in the curriculum, relation to other subjects and to the profession**Subject:** Specific Technology "Computación"**Module:** III-CO**7th Semester (1st of the 4th year)****Descriptors:**

Methodologies and techniques for the design of interactive systems. Collection and specification of interaction requirements. Conceptual modeling of the interactive system. Design of prototypes. Design documentation. Development and evaluation of the interactive system.

Character: Obligatory**Area:** LSI

This subject is integrated into the Computer Specific Technology subject of the curriculum and serves as a foundation and complement to the subjects of that specific technology.

The constant emergence of new interaction devices and paradigms are changing the way systems interact and opening new domains of computer application that require careful interaction design. The competences acquired in this subject will allow the student to develop a series of fundamental capacities for the profession of Computer Science Engineer, when knowing better the operation of the interactive systems, their types, the methodologies and design techniques or the methods used for their evaluation.

The student of Interactive Systems Design, will develop a series of fundamental skills for his profession by knowing better the functioning of interactive systems, their types or design methodologies and techniques. In addition, they will be able to develop systems of a higher quality since aspects that improve their quality are considered such as usability, accessibility or prototyping, which can help the end user or the client actively participate in the product to be implemented.

4. Degree competences achieved in this course**Course competences**

Code	Description
CM06	Ability to develop and assess interactive systems, and present complex information and its application in the solution of problems with the design of person-computer interaction.
INS05	Argumentative skills to logically justify and explain decisions and opinions.
SIS01	Critical thinking.
SIS03	Autonomous learning.

5. Objectives or Learning Outcomes**Course learning outcomes****Description**

Application of the main methods and techniques for gathering requirements and modeling related to the interactive and collaborative aspects of software applications.

Knowledge of what a programming language consists of and an integrated vision of the functioning and structure of a language processor.

Development of prototypes of software applications and, especially, graphical user interfaces, based on previous designs of interaction and collaboration.

6. Units / Contents

Unit 1: Introduction to Interactive Systems Design

Unit 2: New Tendencies on Interactive Systems

Unit 3: Methodologies and Interaction Technics

Unit 4: Conceptual models and design of prototypes

Unit 5: Development and Evaluation of Interactive Systems

ADDITIONAL COMMENTS, REMARKS

New interaction paradigms en areas such as Ubiquitous Computing, Ambient Intelligence, Ambient Assisted Living, Internet of Things, Urban areas, etc.

Explicit, implicit & embedded interactions. Context and Context Awareness

Mobile Computing and m-Health

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	CM06	0.6	15	N	-	Teaching of the subject matter by lecturer (MAG)
Progress test [ON-SITE]	Assessment tests	CM06 INS05 SIS01	0.1	2.5	Y	N	Progress test 1 of the first third of the syllabus of the subject (EVA)
Progress test [ON-SITE]	Assessment tests	CM06 INS05 SIS01	0.1	2.5	Y	N	Progress test 2 of the two first thirds of the syllabus of the subject (EVA)
Progress test [ON-SITE]	Assessment tests	CM06 INS05 SIS01	0.1	2.5	Y	N	Progress test 3 of the complete syllabus of the subject (EVA)
Writing of reports or projects [OFF-SITE]	Self-study	CM06 SIS01 SIS03	0.9	22.5	Y	N	Preparation of essays on topics proposed by lecturer (RES)
Laboratory practice or sessions [ON-SITE]	Practical or hands-on activities	CM06 SIS03	0.72	18	N	-	Realization of practicals in laboratory /computing room (LAB)
Study and Exam Preparation [OFF-SITE]	Self-study	CM06 SIS01 SIS03	1.8	45	N	-	Self-study (EST)
Practicum and practical activities report writing or preparation [OFF-SITE]	project-based learning	CM06 SIS03	0.9	22.5	Y	Y	Lab practical preparation (PLAB)
Individual tutoring sessions [ON-SITE]	Collaborative on line international learning (COIL)	CM06 INS05 SIS01	0.18	4.5	N	-	Individual or small group tutoring in lecturer's office, classroom or laboratory (TUT)
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	CM06 SIS01	0.6	15	N	-	Worked example problems and cases resolution by the lecturer and the students (PRO)
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
Progress Tests	7.50%	0.00%	Progress test 1. Non-compulsory activity that can be retaken (rescheduling). To be carried out at the end of the first third of the teaching period.
Progress Tests	15.00%	0.00%	Progress test 2 Non-compulsory activity that can be retaken. To be carried out at the end of the second third of the teaching period.
Progress Tests	27.50%	0.00%	Progress test 3. Non-compulsory activity that can be retaken. To be carried out during the non-teaching period.
Theoretical papers assessment	15.00%	15.00%	Non-compulsory activity that can be retaken. To be carried out before end of teaching period
Laboratory sessions	25.00%	25.00%	Non-compulsory activity that can be retaken. To be carried out in the theory/laboratory sessions for the students of the continuous modality. The students of non-continuous modality will be evaluated of this activity through an alternative system in the ordinary call
Oral presentations assessment	10.00%	10.00%	Non-compulsory activity that can be retaken. To be carried out in the theory/laboratory sessions for the students of the continuous modality. The students of non-continuous modality will be evaluated of this activity through an alternative system in the ordinary call

Final test	0.00%	50.00%	Mandatory and recoverable activity to be carried out on the
Total:	100.00%	100.00%	date scheduled for the final exam of the ordinary call

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 mandatory activities a minimum of 4 out of 10 must be obtained in order to consider the activity passed and be able to pass the subject.

The evaluation of the activities will be global and, therefore, it must be expressed by means of a single note. If the activity consists of several sections may be assessed individually by informing in writing at the beginning of the course about the assessment criteria for each section. For recoverable activities there is an alternative evaluation test in the extraordinary call.

The progress tests will be common to all the theory/laboratory groups of the subject and will be graded by the teachers of the subject horizontally, that is to say, each of the parts of the progress tests will be evaluated by the same teacher in order to all students.

The student passes the course if he/she obtains a minimum of 50 out of 100 points with the scores of each evaluation activity.

For students who do not pass the subject in the ordinary convocation, the grade of the activities passed will be retained for the extraordinary convocation. In the case of recoverable activities passed, the student may submit to the alternative evaluation of those activities in the extraordinary summons and, in that case, the final grade of the activity will correspond to the following last note obtained.

The grade of the activities passed in any call, except the progress tests, will be kept for the next one academic year at the request of the student provided that this is equal to or greater than 5 and does not modify the training activities and the evaluation criteria of the subject in the next academic year.

Failure to appear for progress test 3 will result in a score of Not Presented. If the student has not passed some mandatory assessment activity, the final grade in the subject cannot exceed 4 out of 10.

Non-continuous evaluation:

Students who are unable to attend training activities on a regular basis may apply at the beginning of the semester for the non-continuous assessment mode. Similarly, if a student who is undergoing continuous assessment incurs any circumstance that prevents her/him from regularly attending the classroom-based training activities, she/he may renounce the accumulated mark in continuous assessment and apply for the non-continuous assessment mode. In this case, a notification by the student must be given before the date scheduled for the tests in the ordinary call, in accordance with a deadline that will be informed at the beginning of the semester.

Students who take the non-continuous assessment mode will be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences), through the assessment systems indicated in the column "Non-continuous assessment".

In the "non-continuous assessment" mode, it is not compulsory to keep the mark obtained by the student in the activities or tests (progress test or partial test) taken in the continuous assessment mode.

Specifications for the resit/retake exam:

Evaluation tests shall be carried out for all recoverable activities.

Due to the nature of the progress tests in the extra ordinary call, there will be a single progress test that encompasses the three progress tests in the ordinary call.

Specifications for the second resit / retake exam:

Same characteristics as in the extra ordinary call.

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

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
A. Genco and S. Sorce	Pervasive Systems and Ubiquitous Computing	WIT Press		978-1-84564-482-6	2010	
Benyon, D., Turner, P. & Turner, S.	Designing Interactive Systems: People, Activities, Contexts, Technologies	Addison Wesley		0-321-11629-1	2005	
David Benyon	Designing Interactive Systems: A comprehensive Guide to HCI and Interaction Design	Pearson		978-0-321-43533-0	2005	
Kuniavsky, Mike	Smart things : ubiquitous computing user experience design	Morgan Kaufmann Elsevier		978-0-12-374899-7 (r	2010	
Tom Lovett, Eamonn O'Neill	Mobile Context-Awareness	Springer		978-0-85729-624-4	2012	
	Handbook of ambient intelligence and smart environments	Springer		978-0-387-93807-3	2009	