DEGREE CURRICULUM

INTERACTIVE APPLICATIONS DESIGN

Coordination: DIAZ LLOBET, MANEL

Academic year 2023-24

INTERACTIVE APPLICATIONS DESIGN 2023-24

Subject's general information

Subject name	INTERACTIVE APPLICATIONS DESIGN
Code	102384
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION
Typology	<table><tr><th>Degree</th><th>Course</th><th>Character</th><th>Modality</th></tr><tr><td>Bachelor's degree in Digital Interaction and Computing Techniques</td><td>3</td><td>COMPULSORY</td><td>Attendance-based</td></tr></table>
Course number of credits (ECTS)	6
Type of activity, credits, and groups	<table><tr><th>Activity type</th><th>PRALAB</th><th>TEORIA</th></tr><tr><th>Number of credits</th><td>3</td><td>3</td></tr><tr><th>Number of groups</th><td>1</td><td>1</td></tr></table>
Coordination	DIAZ LLOBET, MANEL
Department	COMPUTER ENGINEERING AND DIGITAL DESIGN
Teaching load distribution between lectures and independent student work	During the course, the master classes will be combined with the practical classes. To the first, the students will assimilate the theoretical competences that they will apply later to the practical classes. There will be two practical exercises, and two exams. The student will carry out the autonomous work in non-contact hours.
Important information on data processing	Consult this link for more information.
Language	Classes will be teach in Catalan
Distribution of credits	1 credit equals 25 hours of student work 6 credits are 150 hours

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Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
DIAZ LLOBET, MANEL	manel.diazllobet@udl.cat	6	

Subject's extra information

This subject is taught in the second semester of the third course of the Degree in Digital Interaction Techniques and Computing.
It is included within the material for analysis and design of interactive applications, being mandatory.

Learning objectives

- Understand the basics of human-computer interaction and the user-centered development process.
- Know the characteristics, tools and methodologies of front-end web development.
- To learn about different technologies for the development of applications with interaction with the user.
- Know and apply the MVC design pattern for the development of interactive applications.

Competences

CB3. That students have the ability to gather and interpret relevant data (usually within their area of study) to makejudgments that include a reflection on relevant social, scientific or ethical issues.
CT3. Acquire training in the use of new technologies and information and communication technologies.
CG1. Capacity to conceive, plan and develop projects in the field of ICT
CG4. Capacity to use software engineering methods in the development of interactive computer applications.
CG9. Capacity to analyze and synthesize
CE3. Basic knowledge of the use and programming of computers, operating systems and databases, and their use in the development of interactive applications.
CE6. Capacity to design, develop, select and evaluate applications and computer systems, ensuring its reliability, security and quality.
CE10. Capacity to analyse, design, build and maintain safe and efficient applications, choosing the most suitableparadigm and programming languages.
CE13. Knowledge and application of the characteristics, functionalities and structure of the databases, that allow their suitable use, and the design and the analysis and implementation of interactive applications based on them.
CE15. Knowledge and application of the principles, methodologies and life cycles of software engineering

Subject contents

Topic 1: Interactive application design theory
1.1.- Client-server architecture
1.2.- Language structure
1.3.- User Centered Design (UCD)
1.4.- Prototyping

Topic 2: Front-end web development
2.1.- Semantic Web
2.2.- HTML5 and CSS3 languages
2.3.- Principles of digital animation
2.4.- Advanced animations and interactivity

Topic 3: Back-end web development
3.1.- Data management language (SQL)
3.2.- Control of user data entry
3.3.- Object Oriented Programming
3.4.- Access to data
3.5.- The MVC design pattern

Methodology

Each week the student attends 2 face-to-face theory hours and 2 face-to-face practice hours.

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Theory classes (3 credits)

- Theoretical part: classes supported with transparencies and/or notes.
- Part of practical application: application work of more practical concepts.

Practical Classes (3 credits)

- Directed classes and personalized monitoring by practice groups.

Development plan

Week	Classroom	Lab. classroom
1	Presentation of the subject	Presentation and installation of the work environtment
2	User Centered Design	Prototyping
3	Semantic Web	Front-End web design
4	Principles of digital animations	Delivery of Exercice 1 + HTML5 + CSS3 exercises
5	Advanced animations and interactivity	Digital animation exercises on the web
6	Presentation of PRA1	Working on PRA1
7	Working on PRA1	Non school day
8	Doubts and review	Delivery of PRA1
9	Partial Exam P1	Partial Exam P1
10	Interaction control of input data	Input data exercises
11	Object - oriented programming on the web (MVC pattern)	Non school day
12	Non school day	Practical application of MVC on the web
13	Presentation of PRA2	Working on PRA2
14	Working on PRA2	Working on PRA2
15	Doubts and review	Delivery of PRA2
16 - 19	Partial Exam P2	Partial Exam P2
20 - 21	Resitting exam	Resitting exam

Evaluation

Evaluation block	% Final grade	Evaluation activities	Grade %	Minimum note	In group	Compulsary	Recoverable
Exercise (EX)	**15%**	Exercise 1	15%	-	YES(<=3)	NO	NO
Practice (PRA)	**50%**	Practice 1	20%	4	YES(<=2)	NO	YES
		Practice 2	30%	4	YES(<=2)	NO	YES
Theory (THE)	**35%**	Partial exam P1	15%	-	NO	NO	YES
		Partial Exam P2	20%	-	NO	NO	

Evaluation grade = Weighted average of the evaluation blocks.
Final grade (if minimums are met)) = Evaluation grade
Final Grade (if minimums are not met) = Evaluation Grade (if Evaluation Grade is less than 4) or 4 (if Evaluation Grade is equal to or greater than 4).
To pass the subject, the Final Grade must be >= 5
The activities that are recovered will not be evaluated out of 10 points. They will be evaluated out of 8 points.

Final Grade =0,15 * EX + 0,50 * PRA + 0,35 * THE

ALTERNATE EVALUATION:

Students who have consent to be evaluated through the alternative evaluation (see requirements and procedure in the evaluation regulations) will have to carry out the following activity:

- Practical test at the end of the subject, which will include the contents of Practice 1 and Practice 2. The test will be face-to-face.

Bibliography

- [DIX04] Dix, A. ; Finlay, J. ; Abowd, G. ; Beale R. (1993). Human-Computer Interaction. Prentice Hall, Englewood Cliffs, NJ (3rd edition).
- [NIE93] Nielsen, J. (1993). Usability Engineering. Academic Press Professional, Boston, MA.
- [DIE19] Diego, J.;(2019). El gran libro de HTML5, CSS3 y Javascript. Marcombo (3ra edición)
- [Nix19] Nixon, R;(2019). Aprender PHP, MySQL y JavaScript. Marcombo