Course guides
804235 - IDI - Interfaces Design and Interaction

Last modified: 07/04/2021

Unit in charge: Image Processing and Multimedia Technology Centre
Teaching unit: 804 - CITM - Image Processing and Multimedia Technology Centre.

Degree: BACHELOR'S DEGREE IN VIDEO GAME DESIGN AND DEVELOPMENT (Syllabus 2014). (Compulsory subject).

Academic year: 2021 **ECTS Credits:** 6.0 **Languages:** Catalan, Spanish, English

LECTURER

Coordinating lecturer: Del Castillo Figueruelo, Arantzazu

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CEVJ 3. Apply graphic interface design methodologies in an interactive application based on usability and accessibility criteria, taking the various platforms to which it can be directed into account.

Transversal:
04 COE. EFFICIENT ORAL AND WRITTEN COMMUNICATION. Communicating verbally and in writing about learning outcomes, thought-building and decision-making. Taking part in debates about issues related to the own field of specialization.
CT3. TEAMWORK: Being able to work in an interdisciplinary team, whether as a member or as a leader, with the aim of contributing to projects pragmatically and responsibly and making commitments in view of the resources that are available.

CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

07 AAT. SELF-DIRECTED LEARNING. Detecting gaps in one's knowledge and overcoming them through critical self-appraisal. Choosing the best path for broadening one's knowledge.

TEACHING METHODOLOGY

The theoretical contents are introduced by the teacher in classes of a participatory and dynamic nature. Students intervene by carrying out activities, searching for information, and raising doubts about the contents studied.

The theoretical contents are consolidated by carrying out three practical tasks, called challenges, which have a great weight within the subject. These are done during classes and, especially, autonomously from the guidance provided by the teacher. The face-to-face classes are used as a coworking space where work teams receive feedback from both the teacher and the rest of their colleagues.

LEARNING OBJECTIVES OF THE SUBJECT

- Show understanding, knowledge, and capacity for application of the concepts, procedures, techniques, technologies, and computer programs in the creation of the graphical user interface.
- Show ability to design, evaluate, and test the usability, accessibility, and playability of graphic video game interfaces.
- Show knowledge of standards and regulations related to computer applications and systems, usability, accessibility, playability, and the player-user-centered design method.
- Show understanding of the concept "human factor", of the mechanisms and psychological processes involved and be able to apply this knowledge in the decision-making process in video game design.
- Show understanding and mastery of the "User-Centered Design Method" and the procedures, techniques, and technologies involved and being able to apply it in the process of design and development of video games.
- Show understanding and acceptance of the social commitment of the guidelines and guides, especially those related to accessibility, and the ability to apply them properly to each type of interactive application or video game in the process of creating it.
- Use strategies to prepare and carry out oral presentations and write texts and documents with coherent content, adequate structure and style, and a good level of spelling and grammar.
- Contribute to consolidating the team planning objectives, working effectively and favoring communication, the distribution of tasks, and cohesion.
- After identifying the different parts of an academic document and organizing the bibliographic references, design and execute a good advanced search strategy with specialized information resources, selecting the relevant information taking into account criteria of relevance and quality.
- Carry out the assigned tasks based on the basic guidelines given by the professor, deciding the time that needs to be used for each task, including personal contributions and expanding the indicated sources of information.

STUDY LOAD

Type	Hours	Percentage
Self study	90,0	60.00
Hours medium group	30,0	20.00
Hours large group	18,0	12.00
Guided activities	12,0	8.00

Total learning time: 150 h

CONTENTS

Lesson 1. User Experience Design

Description:
The basic concepts related to the user experience and its design are studied: Usability and playability. Player Experience. Accessibility. Interaction. Human Computer Interaction. Interface. Fun and video games. Formal approaches & Frameworks. Game User Research. User Experience & User Experience Design.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Lesson 2. Attention

Description:
The concept of "attention." The attention in video games. Types of attention Determinants of attention. The attention according to type of task. Visual attention and eye-tracking technology

Related activities:
Challenge 1

Full-or-part-time: 5h
Theory classes: 2h
Self study : 3h

Lesson 3. Perception

Description:
The concept of "perception". The perception in video games. Determinants of perception. Color and emotions. Depth perception. Perception of movement.

Related activities:
Challenge 1

Full-or-part-time: 5h
Theory classes: 2h
Self study : 3h

Lesson 4. Memory

Description:
The concept of "memory." The concept of "learning." The structures and functions of memory. Memory and learning in video games.

Related activities:
Challenge 1

Full-or-part-time: 5h
Theory classes: 2h
Self study : 3h

Lesson 5. Usability test with eye-tracking

Description:
What are usability tests and how are the results of a usability test planned, developed and analyzed? Visual field, saccades and fixations. Eye-tracking usability test technique: Gaze plots. Heat maps. Eye-tracking technology: design of eye-tracking projects.

Related activities:
Challenge 2

Full-or-part-time: 7h 30m
Theory classes: 3h
Self study : 4h 30m

Lesson 6. Playtesting

Description:
What is a playtesting and how is it planned, developed, and its results analyzed.

Related activities:
Challenge 3

Full-or-part-time: 5h
Theory classes: 2h
Self study : 3h

Lesson 7. Heuristic Evaluation and Cognitive Walkthrough

Description:
What are a heuristic evaluation and a cognitive walkthrough, and how are they planned and developed, and their results analyzed.

Related activities:
Challenge 2

Full-or-part-time: 7h 30m
Theory classes: 3h
Self study : 4h 30m

Lesson 8. Accessibility in video games

Description:
Accessibility: concept and accessibility of video games.

Full-or-part-time: 5h
Theory classes: 2h
Self study : 3h

ACTIVITIES

Desafío 1. Examination of video games

Description:
Students will assess video games to identify usability problems related to visual attention and visual perception.

Full-or-part-time: 17h 30m
Practical classes: 7h
Self study: 10h 30m

Exercise 2. Usability evaluation of video games

Description:
Students will evaluate the usability level of one to three video games by planning and developing a usability test, a heuristic evaluation, and a cognitive walkthrough, and will generate in each case a brief report with the conclusions of each of them.

Full-or-part-time: 30h
Practical classes: 12h
Self study: 18h

Challenge 3. Playtesting of a video game

Description:
Students will evaluate the playability of a selected video game, planning and developing a playtesting for it. Once the design problems that affect the gameplay have been identified and assessed, they should propose design solutions that improve the player's experience, incorporating, in addition to the feedback collected during the session, that derived from the feedback sessions carried out with classmates.

Full-or-part-time: 32h 30m
Theory classes: 13h
Self study: 19h 30m

GRADING SYSTEM

Practical exercises (40%)
• Challenge 1, with a weighting of 15% of the final grade for the course.
• Challenge 2, with a weighting of 15% of the final grade for the course.
• Challenge 3, with a weighting of 10% of the final grade for the course.

Exams (50%)
• 1 partial exam, with a weighting of 25% of the final grade for the course.
• 1 final exam, with a weighting of 25% of the final grade for the course.

Participation and learning attitude, with a weighting of 10% of the final grade for the course.

Students who have failed the ongoing assessment can do a re-evaluation exam, regardless of the qualification they have obtained (there is no minimum grade to be able to access, as long as the note is different from NP). The grade obtained in the re-evaluation replaces, if higher, the set of those obtained in the midterm and final exams. The final grade for the course, calculated from the re-evaluation exam, cannot be higher than 5.

EXAMINATION RULES.

Part of the practical exercises can be done during the face-to-face classes. Students will also have to dedicate time for autonomous work (outside class hours), to carry out these exercises.
The evaluation of the exercises does not only involve the resolution of the same, but also the presentation of their results in class when is required and the completion and delivery of the corresponding documents that will have to be deposited in the virtual campus.
The documents must be completed following the instructions given therein, especially regarding the labeling of the file names and the structure of the content. In no case will the layout of the document be modified or saved in a format or version other than the one indicated. The correct management of the documentation provided is an aspect related to the competencies to be acquired and is, therefore, subject to evaluation.

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Basic:

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- Bernhaupt, R. Game user experience evaluation. Springer, 2015.
- Isbister, K. & Schaffer, N. . Game Usability: Advancing the Player Experience. -. -: CRC PRESS, 2008.

Complementary:

- Johnson, D., Gardner, and Perry, R. . "Validation of two game experience scales: the Player Experiencce of Need Satisfaction (PENS) and Game Experience Questionnaire (GEQ)". International Journal of Human-Computer Studies. 118, 38-46..
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- Soler, J.L., Ferreira, J., Contero, M., Alcañiz, M. . "The power of sight: using eye tracking to assess learning experience (LX) in virtual reality". International Technology, Education and Development Conference. -.
- Ocasio, A.. Affordances in video games: a study of perspective.. -. Kentucky: Northerm Kentucky University, 2019.