

Academic Year: ( 2023 / 2024 )

Review date: 30-06-2021

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: MARQUEZ SEGURA, ELENA

Type: Compulsory ECTS Credits : 6.0

Year : 3 Semester : 2

**REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)**

User Interfaces (Year 3 / Term: 1)

**DESCRIPTION OF CONTENTS: PROGRAMME**

1. Introduction to designing and studying interactive systems
  - 1.1. Multidisciplinary influence in Interaction Design (IxD) and Human-Computer Interaction (HCI)
  - 1.2. Phases and paradigms in HCI: concepts, methods, contributions, and specific values.
  - 1.3. Goals in interaction design: Usability, User Experience (UX), security, ergonomics, and accessibility.
  - 1.3. Key concepts (e.g. affordance, mapping).
  - 1.5. Introduction to a user-centered design (UCD) process.
2. Study of the design context and field work
  - 2.1. Techniques: documentation, interviews, questionnaires, observation techniques, focus groups.
  - 2.2. Study design: protocol, best practices and key considerations.
  - 2.3. Documentation and data collection techniques.
3. Data analysis.
  - 3.1. Data and analysis types: quantitative, qualitative, mixed.
  - 3.2. Introduction to quantitative and qualitative analysis techniques.
  - 3.3. Obtaining and presenting results and insights.
4. Requirements and design drives.
  - 4.1. Requirements: characteristics and types.
  - 4.2. Other design tools: Stories, scenarios, personas, user stories, use cases, story boards.
5. Interaction design and prototyping.
  - 5.1. Double diamond design model for the design process: divergent and convergent design.
  - 5.2. Traditional and innovative techniques to generate and conceptualize designs.
  - 5.3. Prototypes, sketches, wireframes, mockups, Wizard of Oz technique.
6. Advanced concepts and techniques in Interaction Design
  - 6.1. Embodied design methods
  - 6.2. Persuasive design (gamification)
7. Evaluation.
  - 7.1. Benefits and impact.
  - 7.2. Evaluation objects, kinds, and environments.
  - 7.3. Evaluation methods and techniques with and without users.

**LEARNING ACTIVITIES AND METHODOLOGY**

- Theoretical lectures: 1.5 ECTS

Lectures presenting theoretical concepts and techniques to design and study interactive systems.

- Practical lectures: 1.0 ECTS

Labs to work on, and put to practice, the concepts and techniques learnt in class. Guidance to solve the project will be provided.

- Tutoring sessions and follow-up meetings: 0.5 ECTS

Split into work groups, students will attend supervision meetings in the lab to review the development of the project.

- Individual study: 0,5 ECTS

Study of theoretical and practical concepts for the design and study of interactive systems.

- Project development: 2.5 ECTS

Project-based learning. Analyzing, designing, and evaluating an interactive system in a work group. As a result, students will create and submit different design products, and publicly present and defend their work.

## ASSESSMENT SYSTEM

Weight of the exam, assessing theoretical and practical knowledge: 40%

Weight of the project: 60%

Students will finish the course being able to investigate the design context and to conceptualize, design, develop and evaluate functional and non-functional design prototypes. These will be designed and studied centered on the user experience, and applying concepts and methods from Interaction Design (IxD) and Human-Computer Interaction (HCI). For this, students will work in groups in the different phases of a user-centered design (UCD) process: study of the design context and field study; analysis and establishing requirements; design; evaluation. The project will be divided in three submissions that will be evaluated:

P1 Study of the design context and field study

P2 Ideation, design, and prototyping

P3 Evaluation

Grades for each of these deliverables are as follows:

P1 (2p) + P2 (3p) + P3 (1p) = 6p

To pass the continuous assessment, it is mandatory to obtain a MINIMUM GRADE of 3 over 10 in the exam and 3 over 6 in the project.

<b>% end-of-term-examination:</b>	40
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<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	60
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## BASIC BIBLIOGRAPHY

- Alan Bryman Social Research Methods , Oxford University Press, 2015
- Alan Cooper, Robert Reimann, David Cronin, & Christopher Noessel About Face: The Essentials of Interaction Design, Wiley, 2014
- Bill Buxton Sketching User Experiences: Getting the Design Right and the Right Design., Morgan Kaufmann, 2007
- Don Norman The Design Of Everyday Things, Basic Books, 2013
- Helen Sharp, Jennifer Preece, & Yvonne Rogers. Interaction Design: Beyond Human-Computer Interaction, John Wiley & Sons, Inc., 2019
- Jakob Nielsen Designing Web Usability: The Practice of Simplicity, New Riders, 1999
- James Kalbach Mapping Experiences: A Complete Guide to Creating Value through Journeys, Blueprints, and Diagrams, O'Reilly Media, 2016
- Jeffrey Rubin, & Dana Chisnell Handbook of Usability Testing: How to Plan, Design, and Conduct Effective Tests , Wiley, 2008
- Paul Dourish Where the Action Is: The Foundations of Embodied Interaction, The MIT Press, 2001
- Steve Krug Don't Make me Think. A Common Sense Approach to Web Usability, Pearson, 2013
- William Lidwell, Kritina Holden, & Jill Butler Universal Principles of Design, Revised and Updated: 125 Ways to Enhance Usability, Influence Perception, Increase Appeal, Make Better Design Decisions, and Teach Through Design., Rockport, 2010