Interactive products design and evaluation

**Academic Year:  ( 2020 / 2021 )**                                    **Review date: 27-01-2020**

**Department assigned to the subject:**

**Coordinating teacher: BELLUCCI  , ANDREA**

**Type: Compulsory  ECTS Credits : 6.0**

**Year : 1 Semester : 2**

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)
- Computer Engineering principles

OBJECTIVES
Specific competences:
1. To possess and understand the knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context (CB6, 1 credit)
2. The ability to apply the knowledge acquired and to solve problems in new or unfamiliar environments within broader and multidisciplinary contexts, with the ability to integrate different pieces of knowledge (CG8, 2 credits)
3. The ability to conceptualize, design, develop and evaluate the human-computer interaction of IT products, systems, applications and services (CE14, 3 credits)

Learning outcomes:
- The competence to apply innovative methods in solving problems (RA24)
- The ability to design and carry out research based on analysis, modeling, and experimentation (RA42)
- The creative ability to develop new and original ideas and methods (RA32)
- Demonstrate the generic competencies of first cycle graduates at a higher level characteristic of the master level (RA61)
- A comprehensive knowledge of applicable methods and techniques and of their limitations (RA52)
- A deep knowledge and understanding of the principles of the own specialty (RA11)

DESCRIPTION OF CONTENTS: PROGRAMME
1. Human-computer interaction: human factors, human actors and user experiences
2. Some techniques and methods to design interactive systems
3. Development of interactive systems
4. Evaluation of the interaction
5. Accessibility and inclusive design
6. Emerging interaction paradigms
7. Future aspects

LEARNING ACTIVITIES AND METHODOLOGY
A) Lectures

A.1) They will be designed to help the students to develop the competences of this course. The lecturer/s will introduce the main topics of the course to the students in the plenary sessions, and establish critical discussions with them about these topics, by drawing on key and related readings, in order to encourage them to develop a critical thinking approach.

A.2) The materials used in the plenary sessions will be available through appropriate channels, and references to key papers and books that will allow them to complete and go deeper into the most important topics of the course, will be provided.

B) Labs

B.1) The labs will consist of a number of activities/exercises geared towards designing, developing and evaluating a prototype of an user-centred interactive product. To do so, the students will work in teams and adopt a user-centred approach, i.e. first-hand contact with end-users.

B.2) During the lab activities, the students will work in contact with real stakeholders applying the knowledge obtained during the cours

C) Supervised academic activities

C.1) In the plenary sessions, in order to help students understand concepts which might be difficult to take in, and to go deeper into those topics which are of special interest to the practical activities, we will carry out a number of exercises in a participatory way, in small groups.

D) Personal work-study

D.1) It is specifically oriented to the acquisition of the capacity for self organization and planning of individual and team work, and learning process.

E) Tutoring hours (theory and labs)

E.1) This information will be provided at the beginning of the course and available at the materials of the course


## ASSESSMENT SYSTEM

Ordinary exam and continuous evaluation:
A) Theory:

The evaluation system includes the assessment of guided academic activities with the following weights:
a. Critical analysis of research papers: 20%
- this activity is mandatory
b. Examination: 40%
- Final examination is mandatory and the minimum grade is 3,5 over 10

B) Labs:

The students should end this course being able to conceptualise, analyse, design and evaluate the interaction of people with interactive products by considering human factors, social practices of ICT use, and user experiences, and by conducting techniques and methods of human-computer interaction. To this end, the students will work in teams in the design, implementation and evaluation of a prototype of an interactive product. The exercises /labs are detailed below. This part will correspond to the 40% of the final mark of the course.


Final mark of the lab part of the course will be worked out as follows:
P1 (1p) + P2 (2p) + P3 (4p) + P4 (3p) = 10p

Extraordinary exam:
1) if the student respected the continuous evaluation, the exam grade percentage will be the same of the ordinary exam and the final grade will be calculated considering both the exam grade and continuous evaluation grade
2) if the student did not respect the continuous evaluation, the exam grade will count 100% of the final grade
3) if the student respected the continuous evaluation, s(he) can require to be graded with the maximum grade between the exam grade and the exam grade combined with the continuous evaluation grade

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|---|---|
| **% end-of-term-examination:** | 40 |
| **% of continuous assessment (assigments, laboratory, practicals…):** | 60 |


## BASIC BIBLIOGRAPHY

 - Dix, A., Finlay, J., Abowd, G. D. and Beale, R. Human-Computer Interaction, Pearson Education Limited, 2004

 - Hassenzahl, M Experience            Design.            Technology for            all the Right Reasons, Morgan & Claypool Publisher, 2010
 - Jacko, Julie (Editor) The Human-Computer Interaction Handbook: Fundamentals, Evolving Technologies and Emerging Applications, CRC Press, 2012
 - James Kalbach  Mapping Experiences: A Guide to Creating Value through Journeys, Blueprints, and Diagrams , O'Reilly Media; Edición, 2016

 - Jesper Simonsen, Toni Robertson (Editors) Routledge International Handbook of Participatory design, Routledge, 2013
 - Preece, J., Rogers, Y., & Sharp, H..  Interaction Design: Beyond Human-Computer Interaction., John Wiley & Sons, 2011

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