DEGREE CURRICULUM
HUMAN-COMPUTER INTERACTION

Coordination: GARRIDO NAVARRO, JUAN ENRIQUE

Academic year 2022-23

Subject's general information

Subject name	HUMAN-COMPUTER INTERACTION
Code	102017
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION

Typology

Degree	Course	Character	Modality
Bachelor's Degree in Computer Engineering	2	COMPULSORY	Attendance-based
Double bachelor's degree: Degree in Computer Engineering and Degree in Business Administration and Management	2	COMPULSORY	Attendance-based

Course number of credits (ECTS)	6

Type of activity, credits, and groups

Activity type	PRALAB	TEORIA
Number of credits	3	3
Number of groups	3	1

Coordination	GARRIDO NAVARRO, JUAN ENRIQUE
Department	COMPUTER SCIENCE AND INDUSTRIAL ENGINEERING
Teaching load distribution between lectures and independent student work	40% presential 60% autonomous work
Important information on data processing	Consult this link for more information.
Language	Catalan / Spanish
Distribution of credits	Juan Enrique Garrido (GG, GM1 and GM2) Marc Viladegut (GM3)

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
GARRIDO NAVARRO, JUAN ENRIQUE	juanenrique.garrido@udl.cat	3	
VILADEGUT ABERT, MARC	marc.viladegut@udl.cat	9	

Subject's extra information

Human-Computer Interaction (HCI), a discipline in which the subject is framed, is a newly developed area, like many others related to the field of computers, with a markedly interdisciplinary nature and in recent years has witnessed a boom spectacular in its various aspects.

This rise occurs due to the growing capacity of computer equipment and the existence of tools and increasingly sophisticated applications. So today does not surprise us to reach our cursor to the latest information from anywhere regarding any subject, participate in a conversation in which the partners are separated by oceans knowing that the presence of our users is not limited and even the voice, even in dreams, get your computer to give us advice on the best way to write a working paper, whether it is an ad, a review or a book's prologue.

In academia this trend is especially reflected in proposals for the structure of the curriculum of Informatics as the major US computer-related companies, the ACM and the IEEE. It is also worth noting the proliferation of universities worldwide that offer courses related to this matter. The report ACM / IEEE-CS "Joint Curriculum Task Force Computing Curricula 1991" identifies nine subject areas to cover the matter of the discipline of computer science, with the Human-Computer Interaction one.

In 1988, the Special Interest Group in Human-Computer Interaction, ACM-SIGCHI, launched a committee with the aim of making a curriculum. Its task was to draft a series of recommendations on education in IPO and in 1992 drafted the document "Curricula for Human-Computer Interaction" with a series of recommendations for conducting courses IPO.

Since February 2001 he has a new version of the report of ACM / IEEE curriculum guides for teachers to develop computer programs.

The final report appeared in the summer of 2001. In this document, "Ironman Report", the IPO has already found as a special area between the fourteen defined.

Therefore, the assessment that the IPO worth as an independent discipline for major computer companies make logical inclusion in the curriculum, apart from the need for training in this discipline for professionals in the industry.

To cover these aspects and objectives, the IPO should cover many different areas, including various aspects of both humans and the computer: Computer (design and engineering interfaces), Psychology (theory and application of the cognitive processes and empirical analysis of user behavior), sociology and anthropology (interaction between technology, work and organizations) and Industrial Design (interactive products), among others.

The topics were chosen ACM curriculum derived from consideration of the interrelated aspects of Human-Computer Interaction: The nature of the interaction, use and context of computers, characteristics of human beings, computers and interface architecture and development process. Also keep in mind the presentation of projects and evaluating them.

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Learning objectives

Do understand the future in computer engineering graduate **the most important part of technology are the people who use it** and, therefore the enormous importance of the systems interfaces to be programmed and/or management to ensure the success of the same.

Descriptors of the subject are:

- Knowing the basics of Human-Computer Interaction.
- Understanding the importance of creating usable interfaces.
- Interactive learning methodologies to develop User Centered applications.
- Establish the connection with the Software Engineering.
- Ability to identify and analyze aspects of the user experience in real examples.
- To know the main aspects of accessibility in ICTs.

Competences

Transversal competences of the degree

- **EPS11**. Ability to understand user needs expressed in non-technical language.

Common training modules to computer branch

- **GII-CRI2**.Capacidad to plan, design, deploy and manage projects, services and systems in all areas, leading its implementation and continuous improvement and assessing their economic and social impact.
- **GII-CRI12**. Knowledge and application of features, functionality and structure of databases that allow their proper use, and design and analysis and implementation of applications based on them.
- **GII-CRI13**.Conocimiento and implementation of the necessary tools for storage, processing and access to information systems, including web-based.
- **GII-CRI16**. Knowledge and application of the principles, methodologies and life cycles of software engineering.
- **GII-CRI17**. Ability to design and evaluate human-computer interfaces that guarantee accessibility and usability of systems, services and applications.

Subject contents

In terms of content, the subject presents first, the foundations of the discipline of Human-Computer Interaction, and then focuses on two main themes:

1.-Initiation of Usability Engineering and User Centered Design (UCD)

- People interacting with technology, introduction.
- Concept and Importance of the User Interface
- Usability, User eXperience (UX) and Accessibility
- User Centered Design (UCD)
- Usability Engineering, MPIu+a process model, as UCD model.
- Stages of the methodology
  - Main activities and techniques
  - Tools, utilities and examples to support
  - Prototyping and Evaluation

- User Tests

2. - Prototyping techniques

- Introduction to Interactive Systems Prototyping
- Types of prototypes
  - Low Fidelity
  - Midlevel
  - High Fidelity

3. - Accessibility

- To understand the concept of accessibility in the context of the subject
- To learn how to evaluate the accessibility of user interfaces

Methodology

The course is developed as follows:

- A **large group** classes (GG) presents the **theoretical contents** of the subject.
  - These contents are complemented with **examples**, some **workshop**.
  - It encourages **debate discussion** of topics related to the subject among students.
  - Related to this part, the student must complete a series of **activities related to any lecture or reading teacher or some external professional**.

- In **medium group** classes (GM1 / GM2 / GM3) the students develop an interactive design project
  - At the beginning of the year, a **project** is presented a to the students (grouped by 3 people at most) that will be developed during the semester.
  - The project is progressing through the different phases following the methodology and techniques explained in the subject.

Development plan

		THEORY			LABORATORY	
week 1	09/feb	Presentation DCU - Foundations	GM1	10/feb	Introduction to the GLOABL project to be developed Groups definition and explanation of the working methogology Act GR1 - Requirements Analysis (Explanation)	
			GM2	08/feb		
			GM3	08/feb		
week 2	16/feb	User Center Design (MPIu+a)	GM1	17/feb	Act GR1 - Requirements Analysis	
			GM2	15/feb		
			GM3	15/feb		
week 3	23/feb	Prototypes	GM1	24/feb	Act GR1 - Requirements Analysis (Delivery -. First part of the class) Act GR2 - Paper Prototype (Presentation - Second part of the class)	
			GM2	22/feb		
			GM3	22/feb		
week 4	02/mar	User Interface Design	GM1	03/mar	Act GR2 - Paper Prototype	
			GM2	01/mar		
			GM3	01/mar		
week 5	09/mar	Human Factor	GM1	10/mar	Act GR2 - Paper Prototype (Lliurament) Act GR3 - Style Guide + Wireframe (Presentation)	
			GM2	08/mar		
			GM3	08/mar		
week 6	16/mar	Human Factor	GM1	17/mar	Act GR3 - Style Guide + Wireframe	
			GM2	15/mar		
			GM3	15/mar		
week 7	23/mar	Student Party (Cappont)	GM1	24/mar	Act GR3 - Style Guide + Wireframe	
			GM2	22/mar		
			GM3	22/mar		
week 8	27-31 mar	Exam				
Easter (3-11 abril)						
week 9	13/apr	Usability Evaluation (1/2) (Delivery of the Act IND1 - Factors humans)	GM1	14/apr	Act GR3 - Style Guide + Wireframe	
			GM2	12/apr		
			GM3	12/apr		
week 10	20/apr	Usability Evaluation (2/2)	GM1	21/apr	Act GR3 - Style Guide + Wireframe (Delivery) Act GR4 - Wireframes evaluation between groups (Design Guides IU + Style Guide). Explanation	
			GM2	19/apr		
			GM3	19/apr		
week 11	27/apr	Student Party (UdL)	GM1	28/apr	Act GR4 - AWireframes evaluation between groups (Design Guides IU + Style Guide). (Delivery) Act GR5 - Heuristic Evaluation (Explanation)	
			GM2	26/apr		
			GM3	26/apr		
week 12	04/may	Styles and Paradigms (Interaction)	GM1	05/may	Act GR5 -Heuristic Evaluation	
			GM2	03/may		
			GM3	03/may		

week 13	11/may	Local Party	GM1	12/may	Delivery of Act GR5 (before class)
			GM2	10/may	Act GR6 - Final Presentation (Explanation)
			GM3	10/may	
week 14	18/may	Accessibility and International Talk	GM1	19/may	Act GR6 Final Presentation
			GM2	17/may	
			GM3	17/may	
week 15	25/may	Accessibility and Accessibility Evaluation	GM1	28/may	Act GR6 - Final Presentation. (Delivery)
			GM2	24/may	
			GM3	24/may	
weeks 16-18	29 may - 16 jun	Exam			
week 19	19-23 jun	Tutorships			
seweek 20	16-30 jun	Remedial Exam			
	28/may	Delivery of the Act IND2 Accessibility Evaluation			

Evaluation

ACTIVITY	% FINAL MARK	DESCRIPTION			Minimum qualification	Re-take
Individual Activities	30 %	IND1	50 %	Human Factors	4	Yes
		IND2	50 %	Accessibility Evaluation		
Group Activities	40 %	GM1	15 %	Requirements Analisys	4	Yes
		GM2	15 %	Paper Prototype		
		GM3	15 %	Style Guide + Wireframe		
		GM4	15 %	Wireframe Evaluation		
		GM5	15 %	Heuristic Evaluation		
		GM6	25 %	Final Project + Presentation		
Theory	30 %	Ex1	50 %	Exam 1	5	Yes
		Ex2	50 %	Exam 2		
Final Mark = Individual Activities * 0.30 + Group Activities* 0.40 + Theory * 0,30						

IMPORTANT:

Minimum mark for passing the subject FINAL MARK = 5

The activities "Individual Activities" and "Group Activities" should be recovered if the qualification is less than 4.

Not Presented = 0

The recovered activities do not get the same grade as the first time (20% penalty)

The activity "Theory" should be recovered if the qualification is less than 5.

Partial examns will have the opportunity to be recovered individually.

To pass the course, the activity "Theory" must be => 5.

Bibliography

All the contents will be delivered in SAKAI vitual campus.

Most of the related materil is available at: http://www.grihotools.udl.cat/mpiua

This course, as **novelty**, the students have acces to the online videos about the main lectures: **http://www.grihotools.udl.cat/mpiua/curso-ipo**

In general, no software is needed. Nevertheless, when it will be nedded, the teachers will provide all.

Recommended Bibliografy

- Dix, A. ;Finlay, J. ; Abowd, G. ; Beale R. (2004). **Human-Computer Interaction**. Pearson Education Ltd. (3rdedition)
- Brink, T.; Gergle,D.; Wood, S.D. (2002). **Design web sites that work: Usability forthe Web**. Morgan-Kaufmann.
- Granollers, T.;Lorés, J.; Cañas, J.J. (2005). **Diseño de sistemas interactivos centrados enel usuario**. Editorial UOC.

Webs & blogs:

- http://www.interaction-design.org
- http://olgacarreras.blogspot.com
- http://www.uxbooth.com
- https://www.smashingmagazine.com