Universitat de Lleida

DEGREE CURRICULUM

HUMAN-COMPUTER INTERACTION

Coordination: GRANOLLERS SALTIVERI, ANTONI

Academic year 2019-20

HUMAN-COMPUTER INTERACTION 2019-20

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	GRANOLLERS SALTIVERI, ANTONI
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	Toni Granollers Saltiveri (GG) Juan Enrique Garrido (GM1, GM2 i GM3)
Office and hour of attention	In order to provide greater flexibility to students, teachers do not make a schedule. However, we are fully open to handle any student whenever necessary. To do this, arrange day and time with the teacher/s (in person, by e-mail, ...).

HUMAN-COMPUTER INTERACTION 2019-20

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
GARRIDO NAVARRO, JUAN ENRIQUE	juanenrique.garrido@udl.cat	8	
GRANOLLERS SALTIVERI, ANTONI	toni.granollers@udl.cat	4	

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

	ALL GROUP			MEDIUM GROUP		
setmana 1	7-febr	Presentation Fonaments. Usabilitat, Accessibilitat, UX ... DCU		GM1	3-febr	Definition of the GLOB Formar grups, explicar dinàm Explicar Anàlisi d
				GM2	4-febr	
				GM3	5-febr	
setmana 2	14-febr	Prototyping		GM1	10-febr	Anàlisi etnogràfic aplicat a
				GM2	11-febr	
				GM3	12-febr	
setmana 3	21-febr	Institucional EPS Party day		GM1	17-febr	Act GR1 - Anàlisi etnogràfic aplicat al sistema Realització prototip de Paper (P
				GM2	18-febr	
				GM3	19-febr	
setmana 4	28-febr	Disseny de la Interfície d'Usuari		GM1	24-febr	Low level p
				GM2	25-febr	
				GM3	26-febr	
setmana 5	6-març	Human Factors		GM1	2-març	Act GR2 - Realització proto start the Styl
				GM2	3-març	
				GM3	4-març	
setmana 6	13-març	Human Factors (lliurament Act IND1 - LECTURES llibre) UX myths		GM1	9-març	Style gui
				GM2	10-març	
				GM3	11-març	
setmana 7	20-març	Usbility Evaluation (1/2)		GM1	16-març	Wirefr
				GM2	17-març	
				GM3	18-març	
setmana 8	27-març	Usbility Evaluation (2/2)		GM1	23-març	Act GR3 - Style guideline -
				GM2	24-març	
				GM3	25-març	
setmana 9	paartial exams					
Easter						

setmana 10	17-abr	Internacional talk Dr. Juan manuel González, Benemérita Universidad Autónoma de Puebla (México)		GM1	13-abr	
				GM2	14-abr	Inter groups wireframes evaluation (Gu
				GM3	15-abr	
setmana 11	24-abr	Accessibility		GM1	20-abr	Inter groups wireframes evaluation (Gu
				GM2	21-abr	Act GR4 - Avaluació wire acabament i lliuramen
				GM3	22-abr	
setmana 12	1-maig			GM1	27-abr	Grup 1 lliura Act GR4 Act GR5 - Heuris Lliurament fins abans de l
				GM2	28-abr	
				GM3	29-abr	
setmana 13	8-maig	Accessibility Evaluation		GM1	4-maig	Lliurament Act GR5 Començame
				GM2	5-maig	
				GM3	6-maig	
setmana 14	15-maig	Lliurament Act IND2 Accessibility Evaluation Internacional talk, Dr. Marco Winkler, University of Nice Sophia Antipolis (France)		GM1	11-maig	Act GR6 - preparation Fin
				GM2	12-maig	
				GM3	13-maig	
setmana 15	22-maig	Estils i Paradigmes d'Interacció		GM1	18-maig	Lliurament Act GR6 Final project +
				GM2	19-maig	
				GM3	20-maig	

Evaluation

Individual Activities	20%	IND1	50%	Human Factors
		IND2	50%	Accessibility Evaluation
Group Activities	50%	GR1	15%	Requirements Analisys (etnographyc)
		GR2	15%	paper Prototipe
		GR3	15%	Style Guide + Wireframe
		GR4	15%	wireframes evaluation
		GR5	15%	Heuristic Evaluation
		GR6	25%	Final Project + presentation
1r Parcial	15%	Parcial1		
2n Parcial	15%	Parcial2		
FINAL MARK = Individual Activities * 0.20 + Group Activities * 0.50 + 1r Parcial * 0.15 + 1r Parcial * 0.15				

IMPORTANT:

- **ALL the activities and exams are MANDATORY**
- **Minimum mark for passing the subject FINAL MARK = 5**
  - 4.9 is not 5
  - Not Presented = 0
- **Every activity or exam wich mark is below 4 must be resubmitted**
  - 3.9 is not 4
  - Not Presented = 0
  - The recovered activities do not get the same grade as the first time (20% penalty)
- Partial exmans will have the opportunity to recover separately
- To pass the course, **mean of both exams must be >= 5**. Bear in mind that ***neither exam can have less than 4 points***

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