



DEGREE CURRICULUM

HUMAN-COMPUTER INTERACTION

Coordination: GRANOLLERS SALTIVERI, ANTONI

Academic year 2023-24

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
	Programa Acadèmic de Recorregut Successiu - Enginyeria Informàtica	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 ENGINEERING AND DIGITAL DESIGN			
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			
Distribution of credits	GRUP GRAN - Dijous 15:00-17:00 --> Toni Granollers i Marc González GPraLab1, GPraLab2 i GPraLab3 --> Marc Viladegut			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
GONZÁLEZ CAPDEVILA, MARC	marc.gonzalez@udl.cat	2	
GRANOLLERS SALTIVERI, ANTONI	toni.granollers@udl.cat	1	
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, MPlu+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 (GPraLab1, GPraLab2 i GPraLab3) 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

		BIG GROUP - Thursday 15:00-17:00 Toni Granollers / Marc González			GPraLab1 - Divendres 17:00 - GPraLab2 - Dimecres 17:00 - GPraLab3 - Dimecres 15:00 -
Week 1	8-febr	Presentation of the subject	GPraLab1	09/febr	Explain I
		Fundamentals. Usability, Accessibility, UX ... DCU	GPraLab2	07/febr	
			GPraLab3	07/febr	
Week 2	15-febr	User-Centered Design (MPLu+a)	GPraLab1	16/febr	Act GR1 -
			GPraLab2	14/febr	
			GPraLab3	14/febr	
Week 3	22-febr	Prototyping	GPraLab1	23/febr	Act GR1 - Ethnographic analysis applied to t Act Gf
			GPraLab2	21/febr	
			GPraLab3	21/febr	
Week 4	29-febr	User Interface Design	GPraLab1	01/març	Act GR
			GPraLab2	28/febr	
			GPraLab3	28/febr	
Week 5	07/March	The Human Factor	GPraLab1	08/març	Act GR2 - Pap Act GR3 - Style gi
			GPraLab2	06/març	
			GPraLab3	06/març	
Week 6	14/March	Cappont Campus Student Party	GPraLab1	15/març	Act GR3 -
			GPraLab2	13/març	
			GPraLab3	13/març	
Week 7	21/March	Usability assessment (1/2)	GPraLab1	22/març	Act GR3 -
			GPraLab2	20/març	
			GPraLab3	20/març	
Easter (25-29 March)					
Week 9	04/Apr	Human Factor - International Talk Dr. Lewis Act IND1 Delivery - Human Factors	GPraLab1	05/abr	Act GR3 - Style guide + Wire
			GPraLab2	03/abr	
			GPraLab3	03/abr	
Week 8	8-12 April	Week of Scheduled Evaluation Activities (1st partial) Monday 8th April from 15:00 to 17:00, classrooms P2.01+P2.09+P2.04 of multipurpose 1			
Week 10	18/Apr	Usability assessment (2/2)	GPraLab1	19/abr	Act GR4 - Evaluation of wireframes be
			GPraLab2	17/abr	
			GPraLab3	17/abr	
Week 11	Apr/25	UdL Student Festival	GPraLab1	26/abr	Act GR5
			GPraLab2	24/abr	
			GPraLab3	24/abr	
Week 12	02/May	Interaction Styles and Paradigms	GPraLab1	03/maig	Act GR6 - Improvement of the final pro
			GPraLab2	01/maig	
			GPraLab3	01/maig	
Week 13	09/May	Accessibility	GPraLab1	10/maig	Act GR6 - Improvement of the final pro
			GPraLab2	08/maig	

Week	Date	Activity	Lab	Time	Notes
Week 13	09/may	Accessibility	GPrLab3	08/maig	Prepa
Week 14	16/May	Accessibility assessment	GPrLab1	17/maig	Act GR6 - Improvement of the final pro Prepa
			GPrLab2	15/maig	
			GPrLab3	15/maig	
Week 15	23/May	Delivery Act IND2 Accessibility assessment	GPrLab1	24/maig	Act GR6 - F
			GPrLab2	22/maig	
			GPrLab3	22/maig	
Weeks 16-18	27 May - 14 June	Week of Scheduled Evaluation Activities (2nd partial) Thursday 13th June from 15:00 to 17:00, classrooms 0.04+4.05 of the EPS			
Week 19	19-23 June	Tutoring			
Week 20	16-30 June	Week of Scheduled Evaluation Activities (recovery) Tuesday June 25 from 15:00 to 17:00, classrooms P2.01 + P2.09 of the multipurpose 1			

Evaluation

Continuous assesment:

BLOCK	EVALUATION ACTIVITY	% FINAL MARK	DESCRIPTION			Minimum qualification	Re-take
BlockI	Individual Activities	30 %	IND1	50 %	Human Factors	4	Yes
			IND2	50 %	Accessibility Evaluation		
BlockG	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		
BlockT	Theory	30 %	Ex1	50 %	Exam 1	5	Yes
			Ex2	50 %	Exam 2		
Final Mark = BlockI * 0.30 + BlockG * 0.40 + BlockT * 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 activity "Theory" should be recovered if the qualification is less than 5.

Partial exams will have the opportunity to be recovered individually.

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

Alternative assesment:

Block	Description	Weight	Mandatory	Recoverable	Ind/Grup
Unique Block	Unique Exam on the content of the three blocks into which the contents of the subject are divided.	100%	Yes	Yes	Ind

The course is passed with a qualification >=5.

Bibliography

All the contents will be delivered in SAKAI virtual campus.

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

This course, as **novelty**, the students have acces to the online videos about the main lectures: <http://www.grihotools.udl.cat/mpuia/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. (3rd edition)
- Brink, T.; Gergle, D.; Wood, S.D. (2002). *Design web sites that work: Usability for the Web*. Morgan-Kaufmann.
- Granollers, T.; Lorés, J.; Cañas, J.J. (2005). *Diseño de sistemas interactivos centrados en el usuario*. Editorial UOC.

Webs & blogs:

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