



Universitat de Lleida

DEGREE CURRICULUM
**HUMAN-COMPUTER
INTERACTION**

Coordination: Toni Granollers Saltiveri

Academic year 2014-15

Subject's general information

Subject name	HUMAN-COMPUTER INTERACTION
Code	102017
Semester	2
Typology	Mandatory
ECTS credits	6
Theoretical credits	0
Practical credits	0
Coordination	Toni Granollers Saltiveri
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, ...).
Department	Computer Science and Industrial Engineering
Teaching load distribution between lectures and independent student work	40% presential 60% autonomous work
Modality	Presencial
Important information on data processing	Consult this link for more information.
Language	Catalan
Degree	Degree in Computer Engineering
Distribution of credits	Toni Granollers Saltiveri (3 ECTS, GG) Sergio Sayago (6 ECTS, GM1 and GM3) Marta González (3 ECTS, GM2)
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, ...).
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Toni Granollers Saltiveri
Sergio Sayago
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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.
- Analyze the current industrial situation.
- Interactive learning methodologies to develop user-centric applications.
- Establish the connection with the Software Engineering.

Competences

Degree-specific competences

- Ability to design and evaluate interfaces between man and computer which guarantee accessibility and usability of systems, services and computer applications.

Degree-transversal competences

- Ability to understand the user's needs expressed in a non-technical language.

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 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

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 **small group** classes (GM1 / GM2 / GM3) develops 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

MAIN GROUP (GG)			MEDIUM GROUP		
week 1	11-feb	Presentation Explanation of the project First practical exercise for next medium group class 1.- Fundamentals. Usability, Accessibility, UX	GM1	09-feb	no class
			GM2	10-feb	
			GM3	11-feb	
week 2	18-feb	2.- Requirements Eng. Act1 GG - Caps 1-5 "Don't Make Me Think"	GM1	16-feb	Practical exercise
			GM2	17-feb	Practical exercise
			GM3	18-feb	Practical exercise
week 3	25-feb	3.- DCU-MPlu+a	GM1	23-feb	Ethnographic analysis
			GM2	24-feb	Ethnographic analysis
			GM3	25-feb	Ethnographic analysis
week 4	04-mar	4.- Prototyping	GM1	02-mar	Ethnographic analysis - Delivery
			GM2	03-mar	Ethnographic analysis - Delivery
			GM3	04-mar	Ethnographic analysis - Delivery
week 5	11-mar	4.- Prototyping Act2 GG - Cap 6 "Don't Make Me Think"	GM1	09-mar	Paper prototype
			GM2	10-mar	Paper prototype
			GM3	11-mar	Paper prototype
week 6	18-mar	5.- Human Factor	GM1	16-mar	Paper prototype - Delivery
			GM2	17-mar	Paper prototype - Delivery
			GM3	18-mar	Paper prototype - Delivery
week 7	25-mar	5.- Human Factor	GM1	23-mar	Wireframe Visio / InVision

			GM2	24-mar	Wireframe Visio / InVision
			GM3	25-mar	Wireframe Visio / InVision
Easter					
week 8	08-abr	Practical class: Analisis of specific UI elements	GM1	06-abr	
			GM2	07-abr	Wireframe Visio / InVision (Delivery)
			GM3	08-abr	Wireframe Visio / InVision (Delivery)
week 9	Programes Evaluation Activities				
week 10	22-abr	6.- Evaluation methods (1/2)	GM1	20-abr	Wireframe Visio / InVision (Delivery)
			GM2	21-abr	SW prototype
			GM3	22-abr	SW prototype
week 11	29-abr	Professional talk: Olga Carreras: http://olgacarreras.blogspot.com.es Act3 GG - Related activity	GM1	27-abr	SW prototype
			GM2	28-abr	SW prototype
			GM3	29-abr	SW prototype
week 12	06-may	6.- Evaluation methods (2/2)	GM1	04-may	Act4 GM - Heuristic evaluation
			GM2	05-may	
			GM3	06-may	
week 13	13-may	Act4 GG - Practical activity related with cap 7 "Don't Make me Think".	GM1	11-may	
			GM2	12-may	SW prototype - Visit UsabiliLAB
			GM3	13-may	SW prototype - Visit UsabiliLAB
week 14	20-may	Talk: Helen Petrie Act5 GG -Related activity	GM1	18-may	SW prototype - Visit UsabiliLAB
			GM2	19-may	SW prototype
			GM3	20-may	SW prototype

week 15	27- may	7.- Accesibility	GM1	25- may	SW prototype - Delivery
			GM2	26- may	SW prototype - Delivery
			GM3	27- may	SW prototype - Delivery

Evaluation

- **(15% of the final mark)** exercises presented in class from issues raised by teachers
 - 5 Great Activities Group (the assessment of this section is the average of all exercises, to have the notice must be given to all activities and take a minimum of 4)
- **(45% of the final mark)** Evaluation of different prototypes delivered, corresponding to the interactive system that will arise in the first sessions of the course.
 - Ethnographic analysis (15%)
 - Prototype paper (15%)
 - Wireframe (15%)
 - Heuristic Evaluation (10%)
 - Prototype software (45%)
- **(20% of the final mark)** Review Part 1
- **(20% of the final mark)** Review Part 2

IMPORTANT:

- Each activity will have recovered grade of which is less than 4
 - 3.9 is 4
 - Absent = 0
 - Therefore, all activities are compulsory
- You must retrieve the prototype software if your note is <5
- If the average of the two written exams is <5 will be necessary to review the final recovery
- The final exam recovery
 - ALL net
 - You need an average 5 to make and approve
 - has 40%

Bibliography

All the contents will be delivered in SAKAI virtual campus.

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

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.
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- Sharp, H., Rogers, Y.; Preece, J. (2007). **InteractionDesign: Beyond Human-Computer Interaction**. John Wiley and Sons.
- Arnowitz, J.; Arent, M.; Berger, N. (2007). **Effective Prototyping for Software Makers**. Morgan-Kaufmann.
- Lorés, J. et al. (2001). **La Interacción Persona Ordenador**. Llibre digital redactat per un conjunt de professors universitaris espanyols pertanyents a la Asociación Persona Ordenador (AIPO) i disponible de forma totalment gratuïta a: <http://www.aipo.es/libro/libroe.php>

Webs i blogs:

- <http://www.usabilityfirst.com>
- <http://www.usabilitynet.org>
- <http://www.usability.gov>
- <http://www.ainda.info>
- <http://www.upassoc.org>
- <http://www.interaction-design.org>
- <http://uxnet.org>
- <http://usableweb.com>
- <http://www.humanfactors.com>
- <http://usabilitygeek.com/official-usability-user-experience-user-interface-guidelines-from-companies>
- <http://olgacarreras.blogspot.com>
- <http://www.nosolousabilidad.com>
- <http://www.thinkepi.net>
- <http://www.sortega.com/blog>