Module Handbook

CS4826 – Human-Computer Interaction
CS5705 – Human-Computer Interaction: Software Engineering

Spring 2024

Contents

Version 1.0 – last update 31/01/2024

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Schedule

Lectures from Week 1:

- Wednesdays 10am-12pm
- room SR3007 (Sciences building)
- Attendance In-person/online (see schedule)
- Short summary recorded and material published on Sulis shortly after the session
- Live stream for remote attendance

Tutorials from Week 2:

- Wednesdays 3-4pm (Group B) or 4-5pm (Group A)
- room P104 (PESS building)
- Tutorials are mandatory for undergraduate students
- Tutorials are optional for postgraduate students (attendance highly recommended)
- Please contact module leader for information regarding assignment to tutorial groups

Material and Video recordings

- Please note that video recordings are available for academic purposes only.
- You should not copy, modify or distribute recordings of a lecture/tutorial/education session to which you have access, without first seeking permission to do so.
- When live streaming is recorded, you will be informed.

Queries and contact

- Any questions regarding module content: ask during lecture and tutorials, class forums, MS teams chat or meeting links
- Any concerns about attendance, assignments, group work, contact lecturer or T.A. by email
- Questions about course and coordination, lecturer or T.A., contact course director Mark Marshal by email

Contact

- Module leader:
  - Lilian Motti Ader, lilian.mottiader@ul.ie
- Teaching Assistant:
  - Alan T. Ryan, alan.t.ryan@ul.ie
  - Guillaume Petit, petit.guillaume@ul.ie
- Course director
  - LM113 Mark Marshall, mark.marshall@ul.ie
  - LM114 Robin Parmar, robin.parmar@ul.ie
  - LK343 Tabea DeWille, tabea.dewille@ul.ie
  - LK347 Michael English, michael.english@ul.ie

Student support

Keep well.

Everybody needs support from time to time.
https://ulsites.ul.ie/studentaffairs/

People have different sensibilities. If you are concerned about topics discussed in this module, need more support or know someone who you would benefit from extra help, please visit the links:
https://ulsites.ul.ie/studentaffairs/counselling-service
https://www.mentalhealthireland.ie/resources/

Information on Repeats or I Grades
EXAM RESULTS: EVERYTHING YOU NEED TO KNOW (ulstudentlife.ie)
I Grades | University of Limerick (ul.ie)

UL Handbook of Academic regulations and procedures

Please familiarise yourself with the academic regulations and procedures in the University of Limerick.

https://www.ul.ie/media/8741/download?inline

Useful links

- Brightspace (https://learn.ul.ie/)
- Shared folder
- Module Handbook

Module objectives

The objective of this module is to develop an understanding of the issues involved in the increasingly important area of human-computer interaction. The module will provide a broad introduction to a variety of topics concerning user requirements, user interface design, usability studies, integrating human factors in software development, and social and organizational factors involved in implementing systems. It will examine guidelines and standards, as well as emerging interaction paradigms. The widespread adoption of graphical user interfaces (GUIs), and the potential afforded by new developments such as groupware, multimedia, hypertext, and virtual reality systems all require that even greater attention be paid to how these technical developments can be packaged and presented suitably to the "user".

As computer technology is becoming more ubiquitous and consumer-orientated, the need for understanding users and the contexts of use is becoming increasingly important. HCI is about the design of technologies that are safe, easy to learn and use, efficient, and provide the user with a positive experience of use. HCI traditionally takes a user-centred approach to design, putting the user of technology at the centre of the design process. The advantages of incorporating HCI into the software development lifecycle include: higher quality systems and products from the user's (customer) perspective; systems that are safer and less prone to human error (important in aviation, banking, government, military, etc.); reduced frustration and time spent learning to use systems; increased acceptability of technology among the elderly; and research also associates higher return of investment with the incorporation of HCI principles early in the design lifecycle.

Syllabus

The module addresses the nature of HCI. Specifically it covers the topics of: understanding the user, human information processing, perception, interfaces and interaction, input and output devices, use & design, the design process, requirements, evaluation, usability methods and tools, empirical and analytical methods, standards & guidelines, mobile technology, information appliances, social and organizational constraints, intelligent agents, and future trends.

Learning outcomes

Cognitive (Knowledge, Understanding, Application, Analysis, Evaluation, Synthesis)

1. Discuss the merits of, limitations of and evidence for various standards and 'theories of interfaces'.
2. Apply these standards and theories through critique of interfaces drawn from PC based software, web-based software, voice portals and various hand-held devices.
3. Design effective interfaces for a specified system, in the light of these standards and theories.

4. Design an empirical study to evaluate a given interface for a specific HCI context.
5. Perform such empirical studies on interfaces, and show competence in evaluating the results generated to refine the interface.

Affective (Attitudes and Values)

1. Display an appreciation of the importance of user participation in the design process.
2. Value the different skills and abilities of people in the context of human-system interaction.
3. Embrace the importance of inclusive design.

On successful completion of the module, you should be able to

- develop empathetic design skills, getting users' perspective
- understand, practice and document design evaluation and project lifecycle
- explain the impact of the emergence of computers on users' behaviour
- develop project management, teamwork, and interpersonal skills

Assignments and grade distribution (tentative)

Assessment	**Grade**	**Post date**	**Due Date**
User-Centred design canvas - individual	30%	Week 4	Week 6
Design report – individual/group	30% +10% specific criteria	Week 6	Week 10
Heuristic evaluation – group work	30%	Week 8	Week 10
Formative assessment - quizz	-	Week 10	Week 12

Assessment

Assignments are individual, to be submitted via upload on Brightspace.
- report personal work as well as group activity
- for group activities, identical parts of the report can be submitted as long as each student mention other group member names
- templates will be provided
- rubrics will be provided

Evaluation criteria:
- apply a user-centred approach and explore multiples methods of design and evaluation
  (theory and practice)
- document the design process and report every important step
  (concise and illustrated)
- reflect on the design process, lessons learned from collaborative activities and feedback
  (positionality, teamwork, empathy)

Mark to grade conversion:

Mark	Grades
80+	A1
72-79	A2
64-71	B1
60-63	B2
56-59	B3
52-55	C1
48-51	C2
40-48	C3
35-39	D1
30-34	D2
<30	F

Grades 80% or above (A1) are reserved for outstanding work.

Ethics and academic integrity

Please be respectful of all colleagues and different opinions.

User studies and feedback should involve colleagues and peer review from other students registered to this module.

Ethics approval should be sought before any studies with external participants.

For more information, https://www.ul.ie/scieng/scieng-research/research-ethics

Please make sure all external resources are correctly referenced, and all sources mentioned in reports and presentations.