HUMAN COMPUTER INTERACTION

COURSE OUTLINE

Responsible: Dimosthenis Akoumianakis

1. GENERAL			
SCHOOL	School of Engineering		
ACADEMIC UNIT	Department of Electrical and Computer Engineering		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0811.7.029.0	**SEMESTER**	1st
COURSE TITLE	Human Computer Interaction		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	0	4
Total	**0**	**4**

COURSE TYPE general background, special background, specialised general knowledge, skills development	Special background / Core
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	Greek / English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Winter Semester
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/ECE157/

2. LEARNING OUTCOMES

Learning outcomes

The course aims to introduce students to the theory of Human Computer Interaction and the engineering practices of interactive systems and user interfaces. This is attempted by blending concepts from design theories and practice, engineering methods and techniques and evaluation of interactive software. Specific modules are further exposed in laboratory settings where students become acquainted with a) interactive technologies and their physical, syntactic and semantic analysis b) the user-centred approach to designing interactive systems and c) the architectural models, programming techniques and methodology for developing user interfaces.

General Competences

Successful completion of the course will promote general skills including

- Teamwork in framing, understanding and tackling HCI design challenges
- Searching, analysing and conceptualizing solutions
- Decision making given options in a design space
- Development of presentation skills and argumentative discourse

3. SYLLABUS

Topics include the following:

- Introduction to the principles of interaction and the multi-disciplinary nature of the underlying domain of discourse
- Review of interactive technologies and their physical, syntactic and semantic layers of analysis
- Detailed treatment of physical – lexical level analysis of user interfaces covering input / output devices and models, morphological analysis of input devices and interaction objects
- Dialogue models covering early efforts such as BNF Grammars, Task Action Grammar, UAN, as well as more recent approaches such as event-models
- Semantic analysis of user interfaces and interaction metaphors
- Theory-based HCI and models (including Ergonomic analysis, Fitts law, cognitive models (KLM, GOMS, NL-GOMS) and architectures
- User centered design and methods (premises and concepts)
- Scenario-based design and techniques
- Design space analysis
- Prototyping methods and tools
- User interface software and technologies (toolkits, IDEs, scripting)
- Implementation methods and tools

In the laboratory students engage in individual exercises and a case study which addresses most of the issues raised in the theory part.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face to face / distance learning
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	e-class
TEACHING METHODS The manner and methods of teaching are described in detail.	**Activity** / **Semester workload** Lecturing / 40 Mini-projects / case study / 80 **Course total** / **120**
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	The course grade is based on project-based assessments of written (30 %), presentation (30 %) and practical work (40 %).

5. ATTACHED BIBLIOGRAPHY

D. Akoumianakis (2006): Designing the user Interface, A modern approach, Athens: Kleidarithmos

J. Jacko & A. Sears Eds., (2003): The Human-Computer Interaction Handbook: Fundamentals, Evolving Technologies and Emerging Applications, Routledge.

N. Avouris (2000): Human Computer Interaction, Diavlos Publishing.

Instructors' notes

Selected papers from ACM Transactions on Computer Human Interaction, Human Computer Interaction and International Journal of Human Computer Interaction