

SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	Babeş-Bolyai University of Cluj-Napoca
1.2 Faculty	Faculty of Mathematics and Computer Science
1.3 Department	Department of Computer Science
1.4 Field of study	Computer Science
1.5 Study cycle	Master
1.6 Study program / Qualification	Proiectarea și dezvoltarea aplicațiilor Enterprise

2. Information regarding the discipline

2.1 Name of the discipline (en) (ro) (hu)		Human computer interaction / Interfață om-calculator / Felhasználó-számítógép interakció					
2.2 Course coordinator		Prof. Dr. Lehel Csató					
2.3 Seminar coordinator		Prof. Dr. Lehel Csató					
2.4. Year of study	2	2.5 Semester	1	2.6. Type of evaluation	E	2.7 Type of discipline	Optional
2.8 Code		MME8074					

3. Total estimated time (hours/semester of didactic activities)

3.1 Hours per week	5	Of which: 3.2 course	2	3.3 seminar/laboratory	3
3.4 Total hours in the curriculum	70	Of which: 3.5 course	28	3.6 seminar/laboratory	42
Time allotment:					Hours
Learning using manual, course support, bibliography, course notes					40
Additional documentation (in libraries, on electronic platforms, field documentation)					32
Preparation for seminars/labs, homework, papers, portfolios, and essays					40
Tutoring					18
Evaluations					3
Other activities:					-
3.7 Total individual study hours					133
3.8 Total hours per semester					175
3.9 Number of ECTS credits					7

4. Prerequisites (if necessary)

4.1. curriculum	<ul style="list-style-type: none"> • None
4.2. competencies	<ul style="list-style-type: none"> • Basic computer skills, analytical skills, critical reading.

5. Conditions (if necessary)

5.1. for the course	<ul style="list-style-type: none"> • projector
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5.2. for the seminar /lab activities	<ul style="list-style-type: none"> • Students will use – if possible – their own laptop
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6. Specific competencies acquired

Professional competencies	<ul style="list-style-type: none"> • C2.2 Identification and explanation of appropriate mechanisms for specifying software systems • C2.3 Use of methodologies, specification mechanisms and development environments to build software applications • C2.4 Use of appropriate methods for evaluating software applications
Transversal competencies	<ul style="list-style-type: none"> • CT2 Effectively carrying out activities organized in an inter-disciplinary group and developing empathetic capacities for inter-personal communication, relating and collaborating with diverse groups. • CT3 The use of effective methods and techniques of learning, information, research and development of the capacities to capitalize on knowledge, to adapt to the requirements of a dynamic society and to communicate adequately

7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	<ul style="list-style-type: none"> • To raise awareness of the importance of (semi)formal models and user-friendly principles in system design and development. • To emphasize that the aim is to write the program for the user; to make it as easy as possible to use.
7.2 Specific objective of the discipline	<ul style="list-style-type: none"> • To learn methods for modelling human-computer interaction, • To acquire knowledge of the specification languages for human-computer interaction modelling, • to learn methods for creating complex software systems, • Mastery of the user-centered design model, formulation of interface usability at the requirements and expectations level. • Introduction to the psychological background of interaction with machines, understanding the underlying software infrastructure. • To familiarize the user with the ergonomic principles of interface implementation.

8. Content

8.1 Course	Teaching methods	Remarks
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<p>1. The concept of input-output systems, different types of information display, "modern" means of displaying information and virtual reality.</p>	<p>Explanation Interactive exposure</p>	
<p>2. Models of human-computer interactions. Interaction paradigms, styles, WIMP interfaces.</p>	<p>Explanation Interactive exposure</p>	
<p>3. Design of interactions. the design process in which the user is at the center of the software's operational process. Design of prototypes, use cases and navigation through the program process.</p>	<p>Explanation Interactive exposure</p>	
<p>4. Interface development environments.</p>	<p>Explanation Interactive exposure</p>	
<p>5. Definitions and measures of usability, tools for measuring usability.</p>	<p>Explanation Interactive exposure</p>	
<p>6. Design rules for interactions.</p>	<p>Explanation Interactive exposure</p>	
<p>7. Evaluation of models. Evaluation criteria, evaluation methods.</p>	<p>Explanation Interactive exposure</p>	
<p>8. Interaction models. Cognitive, linguistic, and physical interaction models.</p>	<p>Explanation Interactive exposure</p>	
<p>9. Task analysis methods. Definitions, HTA, GTA analysis methods. Programs and software systems for analysis: CTTE, Euterpe.</p>	<p>Explanation Interactive exposure</p>	
<p>10. Methods of describing dialogues. Definitions and notations, diagrammatic and textual notations. Tools for abstract description of interfaces.</p>	<p>Explanation Interactive exposure</p>	
<p>11. Software development for GROUPWARE systems.</p>	<p>Explanation Interactive exposure</p>	
<p>12. Intelligent interfaces. agents implementing interfaces, adaptive and non-adaptive systems.</p>	<p>Explanation Interactive exposure</p>	
<p>13. Design patterns for user interfaces.</p>	<p>Explanation Interactive exposure</p>	
<p>14. Principles of testing human-computer interfaces.</p>	<p>Explanation Interactive exposure</p>	

Bibliography

- [1]. Alan Dix, Janet Finlay, Gregory D Abowd, Russell Beale - Human-Computer Interaction, Prentice Hall, third edition, 2004.
- [2]. Goodman E, Kuniavsky M, Moead A (2012) Observing the User Experience: a practitioner's guide to user research, Morgan Kaufmann, Elsevier.
- [3]. Donald A. Norman - Emotional Design - Why we love (or hate) everyday things, basic Books, 2004.
- [4]. Martijn van Welie - Task-based User Interface Design, 2001.
- [5]. Donald A Norman - The design of everyday things, Basic Books, 1988.
- [6]. Albert B, Tullis T, Tedesco D (2010) Beyond the usability lab: conducting large-scale online user experience studies, Morgan Kaufmann, Elsevier.
- [7]. Jennifer Tidwell - Designing Interfaces: Patterns for Effective Interaction Design, O'Reilly, 2005.
- [8]. Jacob Nielsen - Usability Engineering, Academic Press, 1993.
- [9]. Cooper A, Reimann R, Cronin D (2007) About Face 3: the Essentials of Interaction design, Wiley Publishing.
- [10]. Buxton B (2007) Sketching the User Experience – getting the design right and the right design, Elsevier, Morgan Kaufmann.
- [11]. Kuniavsky M (2010) Smart Things: Ubiquitous User Experience Design, Morgan Kaufmann, Elsevier.

8.2 Seminar / laboratory	Teaching methods	Remarks
1. WIMP interfaces	<ul style="list-style-type: none">● work by example, demonstration,● discussion of examples	
2. Introduction and comparison of different human-computer interfaces.	<ul style="list-style-type: none">● work by example, demonstration,● discussion of examples	
3. Interface evaluation	<ul style="list-style-type: none">● work by example, demonstration,● discussion of examples	
4. The GROUPWARE "dutch" system	<ul style="list-style-type: none">● work by example, demonstration,● discussion of examples	
5. Interface testing	<ul style="list-style-type: none">● work by example, demonstration,● discussion of examples	
6. Automated testing of interfaces	<ul style="list-style-type: none">● work by example, demonstration,● discussion of examples	
7. Analysis and evaluation of student presentations	<ul style="list-style-type: none">● discussion of presentations	
Bibliography		
(same as lectures)		

9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations, and representative employers within the field of the program

- The presentation includes the recommendations found in the ACM Curricula.
- The content of the lecture is like courses taught at international universities such as ELTE Budapest, Budapest University of Technology.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course	Written exam at the end of the semester	Written exam (in the regular	40%
10.5 Seminar/lab activities	Presentation of programming exercises and tutorials	Grade awarded pro rata	60%
10.6 Minimum performance standards			
All grades must be at least 50% of their complete markings.			
The grading (the conversion of percentages to final note):			
<ul style="list-style-type: none">• 50-58 – 5• 59-66 – 6• 67-75 – 7• 74-82 – 8• 83-91 – 9• 92-100 – 10			

Date
16.04.2023

Signature of course holder
Prof dr. Lehel CSATÓ

Signature of seminar holder
Prof dr. Lehel CSATÓ

Date of approval
28.04.2023

Signature of the Department head
Conf. dr. Szilárd ANDRÁS