SYLLABUS

1. Data about the program of study

1.1 Institution	Technical University of Cluj-Napoca
1.2 Faculty	Faculty of Automation and Computer Science
1.3 Department	Computer Science
1.4 Field of study	Computer Science and Information Technology
1.5 Cycle of study	Bachelor of Science
1.6 Program of study / Qualification	Computer science / Engineer
1.7 Form of education	Full time
1.8 Subject code	47.2

2. Data about the subject

2.1 Subject name			***User Interface Design***		
2.2 Course responsible / lecturer			Prof. dr. eng. Gorgan Dorian - dorian.gorgan@cs.utcluj.ro		
2.3 Teachers in charge of seminars / laboratory / project			Assoc. prof. dr. eng. Ştefănuţ Teodor - teodor.stefanut@cs.utcluj.ro		
2.4 Year of study	IV	2.5 Semester	1	2.6 Type of assessment (E - exam, C - colloquium, V - verification)	E
2.7 Subject category	*DF – fundamentală, DD – în domeniu, DS – de specialitate, DC – complementară*				DS
	DI – Impusă, DOp – opțională, DFac – facultativă				DOp

3. Estimated total time

3.1 Number of hours per week	5	of which:	Course	2	Seminars		Laboratory	2	Project	1
3.2 Number of hours per semester	70	of which:	Course	28	Seminars		Laboratory	28	Project	14
3.3 Individual study:										
(a) Manual, lecture material and notes, bibliography										40
(b) Supplementary study in the library, online and in the field										10
(c) Preparation for seminars/laboratory works, homework, reports, portfolios, essays										20
(d) Tutoring										6
(e) Exams and tests										9
(f) Other activities:										0
3.4 Total hours of individual study (suma (3.3(a)…3.3(f)))										85
3.5 Total hours per semester (3.2+3.4)										155
3.6 Number of credit points										6

4. Pre-requisites (where appropriate)

4.1 Curriculum	Computer programming (C, Java, C#) Elements of Computer Assisted Graphics Software Engineering
4.2 Competence	The fundamental methodology for the development of software applications

5. Requirements (where appropriate)

5.1. For the course	Projector, computer
5.2. For the applications	Laboratory attendance is mandatory Study of laboratory materials from the server

6. Specific competence

6.1 Professional competences	**C5 -** Designing, managing the lifetime cycle, integrating and ensuring the integrity of hardware, software and communication systems (6 credite) **C5.1 -** Specifying the relevant criteria regarding the lifetime cycle, quality, security and the computing system's interaction with the environment and the human operator

	C5.2 - Using interdisciplinary knowledge for adapting the computing system to the specifc requirements of the application field **C5.3 -** Using fundamental principles and methods for ensuring the security, the safety and ease of exploitation of the computing systems **C5.4 -** Proper utilization of the quality, safety and security standards in the field of information processing **C5.5 -** Creating a project including the problem's identification and analysis, its design and development, also proving an understanding of the basic quality requirements
6.2 Cross competences	N/A

7. Discipline objective (as results from the *key competences gained*)

7.1 General objective	Study and experiment the methodology of interactive software applications development. Study Human-Computer interaction techniques.
7.2 Specific objectives	1. Apply the user centered software development methodology 2. Study and experiment the techniques that are specific to the flexible methodology of the development of interactive applications and graphical user interfaces 3. Implementation of new and efficient human-computer interaction techniques 4. Usability evaluation in interactive applications

8. Contents

8.1 Lectures	Hours	Teaching methods	Notes
Introduction. History	2	New multimedia teaching approaches will be used in classes. The course is interactive and includes demonstrations that exemplify different user interaction techniques and the software development methodology.	During the semester and before each exam there are a few preparation hours planned.
User interface development concepts	2		
Input and output communication concepts	2		
User oriented design methodology	2		
User interface design methodology	2		
User interface usability	2		
User requirements definition	2		
Task description and analysis	2		
User interface prototyping	2		
Cognitive walkthrough and heuristic evaluation	2		
Interaction styles and techniques	2		
Web technologies. Audio and video technologies	2		
Video game, VR and AR technologies	2		
User interface development environments	2		

Bibliography

1. Shneiderman B.: "*Designing the User Interface. Strategies for Effective Human Computer Interaction*", Addison-Wesley.
2. Galitz W.O.: "*The Essential Guide to User Interface Design*". John Wiley & Sons.

In virtual library

1. Course resources, https://moodle.cs.utcluj.ro/

8.2 Applications – Seminars/Laboratory/Project	Hours	Teaching methods	Notes
Laboratory			
Best practice in UI development	2	Documentation and examples will be available to the students, prior to the laboratory classes, on a dedicated	
Introduction into HTML	2		
Basic notions of CSS formatting	2		
User interaction through JavaScript	2		
Intermediate knowledge assessment	2		
Best practice in Mobile Applications development	2		

Introduction in Android	2	server. The students will work independently but will also be assisted by the teacher.	
UI layout best practices. List controls.	2		
UI elements for advanced user interactions	2		
Intermediate knowledge assessment	2		
Introduction in Windows Mobile	2		
UI layout best practices. List controls.	2		
UI elements for advanced user interaction	2		
Final knowledge assessment	2		
Project			
Project proposal: subject, methodology, phases, organization, project contents, project evaluation	1	Documentation and examples will be available to the students on a dedicated server.	Each student will have to develop a specific project based on the knowledge acquired at the laboratory hours.
Project definition. Evaluation report	1		
Task description and analysis	1		
Low fidelity prototyping and scenarios	1		
Cognitive walkthrough	1		
Heuristic evaluation	1		
Prototyping plan	1		
Prototype codification	1		
User test cases	1		
Prototype evaluation and evaluation reports	1		
Iterative enhancement of the prototype	1		
Final user interface development	1		
Document writing	1		
Project presentation and evaluation	1		

Bibliography

1. Teodor Ștefănuț, Dănuț Mihon, Victor Bâcu, Dorian Gorgan. *Proiectarea interfețelor utilizator - Îndrumător de laborator*, Editura U.T. PRESS Cluj-Napoca, ISBN 978-606-737-068-3, http://biblioteca.utcluj.ro/, 2015.

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1. Course resources, https://moodle.cs.utcluj.ro/

**Se vor preciza, după caz: tematica seminariilor, lucrările de laborator, tematica și etapele proiectului.*

9. Bridging course contents with the expectations of the representatives of the community, professional associations and employers in the field

This discipline is integrated into the Computers and Information Technology domain. The content is classic, yet modern, and introduces to students the user centered methodology for the development of interactive software applications and graphical interfaces. The content of this discipline has been aligned with the information presented in similar disciplines from other major universities and companies from Romania, Europe and USA and has been evaluated by the authorized Romanian governmental agencies (CNEAA and ARACIS).

10. Evaluation

Activity type	Assessment criteria	Assessment methods	Weight in the final grade
Course	The written exam evaluates the understanding of the information presented in classes and the ability to apply this knowledge. The activity in class evaluates the active involvement of the students in the teaching process and their participation to the discussions, debates and other class activities during the entire semester.	Evaluation is performed through written exam and activity at the course.	40% (E) 10% (AC)
Seminar	-		
Laboratory	Laboratory assessment evaluates the practical abilities obtained by the students. Through project assignments	Evaluation is performed through written examination and project presentation.	25% (C) 25% (P)
Project			

	the students have the opportunity to develop their skill in applying the notions, concepts and methods presented in class.		
Minimum standard of performance: Graduation requirement: M≥5, final mark M=0.4*E+0.25*C+0.25*P+0.1*AC Requirement to participate to exam: C≥5 and P≥5			

Date of filling in: 28.06.2023	**Teachers**	**Title First name Last name**	**Signature**
	Course	Prof. dr. eng. Dorian Gorgan	
	Applications	Assoc. prof. dr. eng. Teodor Stefanut	

Date of approval in the department	Head of department, Prof. dr. eng. Rodica Potolea
Date of approval in the Faculty Council	Dean, Prof. dr. eng. Liviu Miclea