جامعة الزيتونة الأردنية

Al-Zaytoonah University of Jordan

كلية العلوم وتكنولوجيا المعلومات

Faculty Of Science & IT

" حيث تصبح الرؤية واقعاً"
"When Vision Becomes
Reality"

" عراقة وجودة"
Tradition and Quality

Detailed Course Description - Course Plan Development and Updating Procedures/ Department of Software Engineering	QF01/0408-3.0E

Faculty	Faculty Of Science And Information Technology	Department	Software Engineering
Course number	**0114381**	Course title	Human Computer Interaction
Number of credit hours	3	Pre-requisite/co-requisite	**0114252**

Brief course description

The Human Computer Interaction (HCI) aims at improving the interactions between users and computers by making computers more usable and receptive to the user's needs. This course is concerned with methodologies and processes for designing interfaces even if they are Software or Hardware Interfaces (i.e., design the best possible interface within given constraints, optimizing for a desired property such as learning ability or efficiency of use), techniques for evaluating and comparing interfaces, developing new interfaces and interaction techniques, and developing descriptive & predictive models & theories of interaction. In addition to the measurements functional and nonfunctional requirements of interactivity in HCI quality for standardization such as flexibility, learnability)

	Course goals and learning outcomes
Goal 1	Study the interaction between human and computer
Learning outcomes	1.1 Students should learn the human senses and how it work as I/O features 1.2 Students must know how human memories work 1.3 Students should learn how the computer system works and the I/O devices 1.4
Goal 2	Evaluate software user interfaces using heuristic evaluation and user observation techniques
Learning outcomes	2.1 Student can deals with the different hardware requirements needed to build the user needs 2.2 Students can use the software interaction models
Goal 3	Conduct simple formal experiments to evaluate usability hypotheses
Learning outcomes	3.1 Student can evaluate and measure the GUI relative to the standards of design
Goal 4	Apply user centered design and usability engineering standard principles as they design a wide variety of software user interfaces
Learning outcomes	4.1 Student can measure the usability relative to the usability engineering principles. 4.2 Student can apply the ISO usability standard 9241
Goal 5	Provides a broad survey of designing, implementing, managing, maintaining, training, and refining the user interface of interactive systems, especially mobile devices
Learning outcomes	5.1 Student can discuss the designing, implementing, managing, maintaining, training, and refining the user interface of interactive systems, especially mobile devices

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Textbook	1.-Ben Shneiderman, Catherine Plaisant, Maxine Cohen, Steven Jacobs, Niklas Elmqvist, and Nicholas Diakopoulos "Designing the User Interface: Strategies for Effective Human-Computer Interaction" (6th Edition) 6th Edition, 2017
Supplementary references	1-A. Dix, J. Finlay, G. Abowd, and R. Beale. "Human-Computer Interaction". 3rd edition, 2004 2-J. Preece, Y. Rogers, and H. Sharp. "Interaction Design: Beyond Human-Computer Interaction". 3rd edition, 2011 3-B. Shneiderman, C. Plaisant, M. Cohen, and S. Jacobs. "Designing the User Interface: Strategies for Effective Human-Computer Interaction", 5th edition, 2010

Course timeline				
Week	**Number of hours**	**Course topics**	**Pages (textbook)**	**Notes**
01	1 1 1	The Human Input-output channels (visual, auditory, haptic), and Movement Human memory (sensory, short-term, long-term) Thinking: reasoning (deduction, Induction, abduction), problem solving,		
02	1 1 1	Human Errors, emotion, individual differences, psychology and the design of interactive system. The computer Main elements of computer devices: text entry, pointing devices, output display devices, virtual reality and 3d interaction		
03	1 1 1	Various devices in the physical world (physical controls, sound, smell and haptic feedback, sensors), paper output and input (different types, scanners, optical character recognition) Memory, processing and networks		
04	1 1 1	The Interaction Models of interaction, Ergonomics Interaction styles, elements of the WIMP interface Interactivity, context of the interaction Experience, engagement and fun		
05	1 1 1	Interaction design Basics What is design? The process of design, user focus, scenarios, navigation design Screen design and layout User action and control, iteration and prototyping		
06	1 1 1	**Exercises and Project discussion** **Review of previous chapters** **First Exam (20 %)**		

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07	1 1 1	HCI in the Software process The software lifecycle, usability engineering Iterative design and prototyping, design relational Design rules Type of design rules, principles to support usability		
08	1 1 1	Standards, guidelines, golden rules and heuristics, HCI deign patterns Implementation support User interface management systems		
09	1 1 1	Evaluation Techniques What is evaluation? Goals of evaluation, evaluating Through expert analysis		
10	1 1 1	Style of evaluation, experimental evaluation Query techniques, eye tracking User support Requirements of user support, approaches to user support		
11	1 1 1	Wizards and assistants Adaptive help systems Adaptive help systems, designing users support system		
12	1 1 1	**Exercises** **Review of previous chapters** **Second exam (20%)**		
13	1 1 1	Communication and collaboration model Face to face communication, conversation, text-based communication, group working		
14	1 1 1	Task decomposition What is task analysis? Approaches to task analysis Task decomposition Task explanation		
15	1 1 1	Review of previous chapters Project presentation		
16	1 1 1	Final Exam (50 %)		

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Theoretical course evaluation methods and weight	Participation = 10% First exam 20% Second exam 20% Final exam 50%	**Practical (clinical) course evaluation methods**	Semester students' work = 50% (Reports, research, quizzes, etc.) Final exam = 50%

Approved by head of department		Date of approval	

Extra information (to be updated every semester by corresponding faculty member)

Name of teacher	Akram AbdelQader	Office Number	**118**
Phone number (extension)		Email	akrama@zug.edu.jo
Office hours			