University / Academy: Arab Academy for Science and Technology & Maritime Transport
Faculty / Institute: College of Computing and Information Technology
Program: Computer Science / Software Engineering

Form No. (12)

Course Specification

1- Course Data

Course Code:	Course Title:	Academic Year / Level:
CS451	Human Computer Interaction	Year 4 / Semester 7
Specialization:	No. of Instructional Units:	Lecture:
Computer Science	2 hrs lecture 2 hrs lab	

2- Course Aim	This course focuses on the interaction between computer systems and the people who use them, introducing analysis and design techniques that can improve the quality of that interaction. Topics include design and evaluation of user interfaces, cognitive and social dynamics factors that affect usability, and software architecture considerations. While the emphasis is on conventional graphical and web user interfaces, alternative interface devices and technologies are also discussed. Design guidelines, evaluation methods, participatory design, communication between users and system developers.
3- Intended Learning Outcome:	
a- Knowledge and Understanding	**Students will be able to demonstrate knowledge of:** K13. Use high-level programming languages. K18. Understand the fundamental topics in Computer Science, including hardware and software architectures, software engineering principles and methodologies, operating systems, compilers, parallel and distributed computing, systems and software tools. K19. Select advanced topics to provide a deeper understanding of some aspects of the subject, such as hardware systems design, object-oriented analysis and design, and artificial intelligence, and parallel and concurrent computing. • Apply a variety of interaction design processes and techniques and know when they are appropriate • Identify the relevant terminologies and principles. • Explain the fundamental concepts involved in Human Computer Interaction. • Apply the concepts of Human Computer Interaction to the system

	development lifecycle. • Examine an interactive product and explain what is good and bad about it in terms of the concepts, goals, and principles of interaction design • Understand the role of social dynamics in interaction and how it applies in design, including concerns such as privacy, power, and accessibility • Determine relations between different instances and generalizations. • Understand cognitive factors that affect usability • Understand existing techniques and future trends for interface design and development. • Apply different methodologies of Interface Design. • Apply usability evaluation methods and know when they are appropriate. • Apply different methodologies of Evaluation.
b- Intellectual Skills	**By the end of the course, the student acquires high skills and an ability to understand:** I10. Define traditional and nontraditional problems, set goals towards solving them, and. observe results. I11. Perform comparisons between (algorithms, methods, techniques...etc). I14. Summarize the proposed solutions and their results. 1. Use the fundamental concepts involved in Human Computer Interaction. 2. Apply an understanding of designing, implementing and evaluating interfaces. 3. Apply an understanding of the existing tools for interface development. 4. Incorporate HCI into systems cycles development.

c- Professional Skills	**By the end of the course the student will have the ability to:** P10. Communicate effectively by oral, written and visual means. P17. Apply the principles of human-computer interaction to the evaluation and construction of a wide range of materials including user interfaces, web pages, and multimedia systems 1. Ability to work in a team and build applications through prototyping and toolkits. 2. Present work and findings

d- General Skills	**Students will be able to:** G1. Show the use of general computing facilities. G7. Demonstrate the ability to make use of a range of learning resources and to manage one's own learning.
4- Course Content	Apply a variety of interaction design processes and techniques and know when they are appropriate Examine an interactive product and explain what is good and bad about it in terms of the concepts, goals, and principles of interaction design Apply usability evaluation methods and know when they are appropriate Understand the role of social dynamics in interaction and how it applies in design, including concerns such as privacy, power, and accessibility Understand cognitive factors that affect usability Judge the availability and feasibility of different devices for interacting
5- Teaching and Learning Methods	Lectures, Labs, Projects, Individual study & self-learning.
6- Teaching and Learning Methods for Students with Special Needs	• Students with special needs are requested to contact the college representative for special needs (currently Dr Hoda Mamdouh in room C504) • Consulting with lecturer during office hours. • Consulting with teaching assistant during office hours. • Private Sessions for redelivering the lecture contents. • For handicapped accessibility, please refer to program specification.
7- Student Assessment:	
a- Procedures used:	Exams and Projects
b- Schedule:	Week 7 exam 2 Projects through the semester Week 16Final exam

c- Weighing of Assessment:	7th week exam 30% Project 10% Project 10% Lab work 10% Final exam 40%

8- List of References:	
a- Course Notes	From the Moodle on www.aast.edu
b- Required Books (Textbooks)	Ben Shneiderman and Catherine Plaisant; "Designing the User Interface: Strategies for Effective Human-Computer Interaction"; Fifth (5th) Edition, Addison Wesley, 2009.
c- Recommended Books	
d- Periodicals, Web Sites, ..., etc.	

Course Instructor:

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Head of Department:

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