

**Arab Academy for Science and Technology and Maritime Transport
Computer Science Curriculum
Course Syllabus**

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| Course Code: CS451 | Course Title: Human Computer Interaction | Classification: R | Coordinator's Name: Dr. Saleh Mesbah Lecturer: Dr Hatem Abdel Kader | Credit Hours: 3 |
| Pre-requisites: SE291 (Introduction to Software Engineering) | Co-requisites: None | Schedule: Lecture: 2 hours Tutorial-Lab: 2 hours | | |
| Office Hours: (Room 305) Sunday 12:30 p.m. - 2:30 p.m. | | | | |
| Course Description: This course focuses on the interaction between computer systems and people who use them; introducing the analysis and design techniques that can improve the quality of 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-based user interfaces, alternative interface devices and technologies are also discussed. Design guidelines, evaluation methods, participatory design, communication between users and system developers. | | | | |
| Textbook: Jenny Preece, Helen Sharp, and Yvonne Rogers, <i>Interaction Design: Beyond Human-Computer Interaction</i> , John Wiley and Sons Ltd. | | | | |
| References: <ul style="list-style-type: none"> • <u>Ben Shneiderman</u> and <u>Catherine Plaisant</u>, <i>Designing the User Interface: Strategies for Effective Human-Computer Interaction</i>, Addison Wesley. • Alan Dix, <i>Human-Computer Interaction</i>, Pearson. | | | | |

| Course Objective: | Contribution to Program Student Outcomes: |
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| <ol style="list-style-type: none"> 1. Describe what interaction design is and how it relates to HCI. 2. Explain the relationships between the user experience and usability. | SO1: Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions. |
| <ol style="list-style-type: none"> 3. Apply a variety of interaction design processes and techniques and know when they are appropriate. | SO 6: Apply computer science theory and software development fundamentals to produce computing-based solutions. |
| <ol style="list-style-type: none"> 4. Examine an interactive product and explain its strength and weakness in terms of concepts, goals, and principles of interaction design. | SO1: Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions. |
| <ol style="list-style-type: none"> 5. Apply usability evaluation methods and know when they are appropriate. | SO 6: Apply computer science theory and software development fundamentals to produce computing-based solutions. |
| <ol style="list-style-type: none"> 6. Understand cognitive factors that affect usability. 7. Explain how to do usability evolution using inspections, analytics and predictive models. | SO1: Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions. |
| <p>Course Outline:</p> <ol style="list-style-type: none"> 1. Week 1: Introduction to Interaction Design. 2. Week 2: Understanding and Conceptualizing Interaction. 3. Week 3: Understanding Users. 4. Week 4: Designing for Collaboration and Communication. 5. Week 5: Formal Methods of Interaction. 6. Week 6: Models and Paradigms: Ergonomic issues and Interaction Approaches. 7. Week 7: 7th exam 8. Week 8: Interfaces and Interactions | <ol style="list-style-type: none"> 9. Week 9: Data Gathering. 10. Week 10: Identifying Needs and Establishing Requirements 11. Week 11: Prototyping and design cycle: rules and principles. 12. Week 12: 12th exam 13. Week 13: User Interfaces: Standards and Guidelines. 14. Week 14: Evaluation: Methods and Models 15. Week 15: Revision 16. Week 16: Final exam |

Grade Distribution:**7th Week Assessment (30%):**

Exam (20%) + Homework Assignments 5% + Programming Assignments 5%

12th Week Assessment (20%):

Exam (15%) + Programming Assignments 5%

Year Work (10%):

Algorithm Presentation and Discussion (5%) + Homework Assignments (5%)

Final Exam (40%)**Policies:****Attendance:**

AASTMT Education and Study Regulations (available at aast.edu)

Academic Honesty:

AASTMT Education and Study Regulations (available at aast.edu)

Late Submission:

Late submissions are graded out of 75% (1 week late), 50% (2 weeks late), 25% (3 weeks late), 0% (more than 3 weeks late)