

**Model 4.2**

**Faculty member + student**

**Course syllabus for human computer interaction –CS351D**

**1. Faculty member information:**

Name of faculty member responsible for the course

**Dr. Sahar Abdul Rahman Ismail**

Office Hours

According to the instructor

Office Number

According to the instructor

Email

According to the instructor

**2. Course overview and general information:**

College / Department

**College of Computer and Information Sciences – computer science department**

Course Name and code

**human computer interaction –CS351D**

Number of credit hours

**3 Credit (3+0+1)**

Program or programs that offer this course

**The Bachelor of Computer and Information Sciences / computer science.**

Year/course level

**From 3<sup>rd</sup> year - Level 5**

Prerequisites for this course (if any)

**Data structures - CS 212D**

Current requirements for this course (if any)

None

Site (to be given if not inside the main building of the institution)

**College of Computer and Information Sciences**

### **3. Objectives of the course:**

- This course is an introduction to Human-Computer Interaction (HCI), a discipline concerned with the design, evaluation, and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them. The course considers the inherently multi- and interdisciplinary nature of HCI and situates various HCI issues in the organizational and societal contexts. It introduces theories of human psychology, principles of computer systems and user interfaces designs, a methodology of developing effective HCI for information systems, and issues involved in using technologies for different purposes. It is intended to give students an overview of the entire HCI field by covering most aspects of it.

#### 4. Course description:

Week	Date	Topic	Activity	Intended learning outcomes	Assessment methods
1, 2		<ul style="list-style-type: none"> <li>• Introduction to the course content, text book (s), reference(s) and course plan.</li> <li>• The human <ul style="list-style-type: none"> <li>▪ Introduction</li> <li>▪ Input-output channels</li> <li>▪ Human memory</li> <li>▪ Thinking</li> <li>▪ Emotion</li> <li>▪ Individual differences</li> <li>▪ Psychology and the design of interactive systems</li> </ul> </li> </ul>	Lecture	<ul style="list-style-type: none"> <li>▪ Recall the human Capabilities and limitations regarding interaction with computer.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Midterm Exams</li> <li>▪ Final Exam</li> <li>▪ Project Assignments</li> <li>▪ Lab Assignments</li> </ul>
3,4		<p>The computer</p> <ul style="list-style-type: none"> <li>▪ Introduction</li> <li>▪ Text entry devices</li> <li>▪ Positioning, pointing and drawing</li> <li>▪ Display devices</li> <li>▪ Devices for virtual reality and 3D interaction</li> <li>▪ Physical controls, sensors and special devices</li> <li>▪ Paper</li> <li>▪ Memory</li> <li>▪ Processing and networks</li> </ul>	Lecture & Lab sessions	<ul style="list-style-type: none"> <li>▪ Describe computer system components and functions regarding interaction with human.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Quizzes</li> <li>▪ Midterm Exams</li> <li>▪ Final Exam</li> <li>▪ Project Assignments</li> <li>▪ Lab Assignments</li> </ul>
5,6		<p>The interaction</p> <ul style="list-style-type: none"> <li>▪ Introduction</li> <li>▪ Models of interaction</li> <li>▪ Frameworks and HCI</li> <li>▪ Interaction styles</li> <li>▪ Elements of the WIMP interface</li> <li>▪ Interactivity</li> <li>▪ The context of the interaction</li> </ul>	Lecture & Lab sessions & A project	<ul style="list-style-type: none"> <li>▪ Recognize the interaction and its models.</li> <li>▪ Use interaction styles and Paradigms in interaction to develop interactive interface.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Quizzes</li> <li>▪ Midterm Exams</li> <li>▪ Final Exam</li> <li>▪ Design Project Reports</li> <li>▪ Project presentation</li> <li>▪ Project Assignments</li> <li>▪ Lab Assignments</li> </ul>
7		<p>Paradigms</p> <ul style="list-style-type: none"> <li>▪ Introduction</li> <li>▪ Paradigms for interaction</li> </ul>	Lecture & Lab sessions & A project		
8,9		<p>Interaction design basics</p> <ul style="list-style-type: none"> <li>▪ Introduction</li> </ul>	Lecture	<ul style="list-style-type: none"> <li>▪ Organize and layout</li> </ul>	

		<ul style="list-style-type: none"> <li>▪ What is design</li> <li>▪ The process of design</li> <li>▪ User focus</li> <li>▪ Scenarios</li> <li>▪ Navigation design</li> <li>▪ Screen design and layout</li> <li>▪ Iteration and prototyping</li> </ul>	<p>&amp; Lab sessions &amp; A project</p>	<p>screens using the principles of good screen design.</p>	
10		<p>HCI in the software process</p> <ul style="list-style-type: none"> <li>▪ Introduction</li> <li>▪ The software life cycle</li> <li>▪ Usability engineering</li> <li>▪ Iterative design and prototyping</li> <li>▪ Design rationale</li> </ul>	<p>Lecture &amp; Lab sessions &amp; A project</p>		
11,12		<p>Design rules</p> <ul style="list-style-type: none"> <li>▪ Introduction</li> <li>▪ Principles to support usability</li> <li>▪ Standards</li> <li>▪ Guidelines</li> <li>▪ Golden rules and heuristics</li> <li>▪ HCI patterns</li> </ul>	<p>Lecture &amp; Lab sessions &amp; A project</p>	<ul style="list-style-type: none"> <li>▪ Apply HCI principles of user interface design to practical application.</li> </ul>	
13		<p>Implementation support</p> <ul style="list-style-type: none"> <li>▪ Introduction</li> <li>▪ Elements of windowing systems</li> <li>▪ Programming the application</li> <li>▪ Using toolkits</li> <li>▪ User interface management system</li> </ul>	<p>Lecture &amp; Lab sessions &amp; A project</p>		
14,15		<p>Evaluation techniques</p> <ul style="list-style-type: none"> <li>▪ What is evaluation</li> <li>▪ Goals of evaluation</li> <li>▪ Evaluation through expert analysis</li> <li>▪ Evaluation through user participation</li> <li>▪ Choosing an evaluation method</li> </ul>	<p>Lecture &amp; Lab sessions &amp; A project</p>	<ul style="list-style-type: none"> <li>▪ Evaluate user interface design and implementation using different evaluation techniques.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Quizzes</li> <li>▪ Final Exam</li> <li>▪ Design Project Reports</li> <li>▪ Project presentation</li> <li>▪ Project Assignments</li> <li>▪ Lab Assignments</li> </ul>

## 5. Books and references:

### 1.The principal book(s) requested:

***"HUMAN COMPUTER INTERACTION"*, by Dix, J. Finlay, G. Abowd and R. Beale, Third Edition, Prentice Hall, 2004.**

### 2. Basic references:

***"HUMAN-COMPUTER INTERACTION"*, by Jenny Preece , 1994.**

**3. Books and references recommended (scientific journals, reports, etc.) (List is attached):**

***"THE HUMAN-COMPUTER INTERACTION HANDBOOK: FUNDAMENTALS, EVOLVING TECHNOLOGIES"*, by Julie A. Jacko, Andrew Sears , Technology & Engineering , 2003.**

**6. Assessment methods and the division of grades:**

Assessment method (Write an essay - test - a collective project - a final test ...)	Assessment Week	Grade	Percentage from overall grade	Comments
1st Midterm Exam	6 or 7	15	15%	
2nd Midterm Exam	11 or 12	20	20%	
Lab works (Assignments, project (report + Discussion + presentation))	Every week + Quiz in week 10 + Project (report + presentation) in week 13	25 (4 project-assignments + 6 Quiz + 5 Lab-assignments + 10 project (5 report + 5 presentation))	25% (4 % project-assignments + 6 % Quiz + 5% Lab-assignments + 10% project (5% report + 5% presentation))	
Final Exam	After week15	40	40%	
<b>Total</b>		<b>100</b>	<b>100%</b>	

**7. Instructions (if any):**