Course specification

(3104 **Human Computer Interface**)

Faculty: HICIT – El-Shorouk Academy
Programme(s) on which the course is given: Under graduate program in Computer Science
Major or minor element of programme: Core
Department offering the programme: Department of Computer Science
Department offering the course: Department of Computer Science
Year / Class: 3rd Year – 1st semester
Date of specification approval: 22/9/2015

A- Basic Information

Title: Human Computer Interface **Code: 3104**
Weekly Hours:
Lecture: 3 **Exercises: -** **practical: 3** **Total:** 6

B- Professional Information

1- Course Objectives:

The objective of this course is to teach the Human Computer Interface methodologies.

After completing this course, the student should be able to:

a. Understand the HCI theory.
b. Understand the HCI techniques related to the analysis, design and implementation of the system.
c. Understand how to apply the HCI concepts in building a real system.

2- Program ILOs Covered by Course

Program Intended Learning Outcomes			
Knowledge and understanding	**Intellectual Skills**	**Professional and practical skills**	**General and Transferable skills**
a2, a13, a20, a21	**b3, b4**	**c1, c5, c8, c10, c16**	**d5**

3 - Intended learning outcomes of course (ILOs)

a: Knowledge and Understanding

a1. Understand and apply a wide range of principles and tools available to the HCI principles.
a2. Understand the notion of human, computer and interaction in general.
a3. Understand the HCI in the software process.
a4. Explain the design rules
a5. Understand the Evaluation techniques.

a6. Understand the communication and collaboration models.
a7. Explain the task analysis, task decomposition and knowledge-based analysis.

b: Intellectual skills

b1. Synthesis and evaluating the technical concepts of the syllabus.
b2. Appraisal of theory and its relevance to different situations.
b3. Analyze of tasks into understandable and manageable subtasks.
b4. Synthesis of clearly and precisely stated solutions for problems.
b5. Evaluate and test the proposed .

c: Professional and practical skills

c1. Design a computer prototype and real systems covering all the basic concepts in HCI

d: General and transferable skills

d1. Communicate effectively by oral, written and visual means.
d2. Work effectively as an individual and as a member of a team.

4- Contents

Topic	Hours	Lec.	Exc/Lab
The human: Input-Output channels, Human memory, thinking (reasoning and problem solving)	6	3	3
The computer: Text entry devices, display devices, physical controls, sensors and special devices, memory.	6	3	3
The interaction: Models of interaction, frameworks and HCI, interaction styles. Software Engineering Life Cycle.	6	3	3
Paradigms: paradigms of interaction. Interaction design basics: what is design?, the process of design. HCI in the software process: The software life cycle.	12	6	6
Design rules: principles to support usability, standards, Guidelines, Golden rules and heuristics.	12	6	6
Evaluation techniques: what is evaluation? Goals of evaluation. Evaluation through expert analysis and user participation, choosing an evaluation method. Universal design: Universal design principles, Multi-model interaction.	12	6	6
Communication and collaboration models: Face – to - Face communication, conversation, Group working.	12	6	6
Task analysis : Difference between task analysis and other techniques, task decomposition, knowledge – based analysis.	12	6	6

5-Teaching and learning methods

5.1 Lectures
5.2 Tutorial Exercises
5.3 Discussions.

6 -Student assessment methods

6.1 Midterm Exam: To assess the knowledge and understanding achieved by the student during the previous weeks.

6.2 Final Exam: To evaluate what the student gain at the end of the course, and to assess: the knowledge and understanding, general skills, and intellectual skills.

6.3 Course Project: To allow students work in team, and to evaluate knowledge, understanding, intellectual, and transferable skills.

6.4 Course Work & Quizzes: To keep the student always in the course, and to evaluate knowledge, understanding, intellectual, and transferable skills.

Assessment Schedule

Assessment	Week #
Mid Term Exam	**8**
Final Exam	**16**
Course Project	**3-14**
Course Work &Quizzes	**2-14**

Assessment Weight

Assessment	Weight %
Mid Term Exam	**5%**
Final Exam	**80%**
Course Project	**10%**
Course Work &Quizzes	**5%**
Total	**100**

Course Work &Quizzes: (Short Exams, Assignments, Researches, Reports, Presentations, Class/Project discussion)

7 -List of references

7.1 Text Books

- Human Computer Interaction, Alan Dix, Jannet Finlay, Gregory D. Abowd, and Russell Beale, 2004.
- **Human Computer Interaction Handbook: Fundamentals, Evolving Technologies, and Emerging Applications, Third Edition** By Julie A. Jacko

8- Required Facilities

8.1 Tools/Software

- .NET framework

9-Course Matrices

9.1-Course Content/ILO Matrix

Course Contents	a1	a2	a3	a4	a5	a6	a7	b1	b2	b3	b4	b5	c1	d1	d2
The human: Input-Output channels, Human memory, thinking (reasoning and problem solving)	√	√	√			√			√	√			√		
The computer: Text entry devices,	√	√	√						√	√			√		

display devices, physical controls, sensors and special devices, memory.															
The interaction: Models of interaction, frameworks and HCI, interaction styles. Software Engineering Life Cycle.	√			√	√		√		√	√			√		
Paradigms: paradigms of interaction. Interaction design basics: what is design?, the process of design. HCI in the software process: The software life cycle.	√			√	√		√		√	√					
Design rules: principles to support usability, standards, Guidelines, Golden rules and heuristics.	√			√	√		√		√	√	√	√			
Evaluation techniques: what is evaluation? Goals of evaluation. Evaluation through expert analysis and user participation, choosing an evaluation method. Universal design: Universal design principles, Multi-model interaction.	√		√	√	√		√		√	√	√	√			
Communication and collaboration models: Face – to - Face communication, conversation, Group working.	√		√				√	√	√	√	√	√			
Task analysis : Difference between task analysis and other techniques, task decomposition, knowledge – based analysis.	√							√							

9.2-Learning Method /ILO Matrix

Learning Methods	a1	a2	a3	a4	a5	a6	a7	b1	b2	b3	b4	b5	c1	d1	d2
Lectures	√	√	√	√	√	√	√	√	√	√	√	√	√		
Tutorial Exercises								√	√	√	√	√	√		
Discussions.								√	√	√	√	√	√	√	√

9.3Assessment Methods /ILO Matrix

Assessment Methods	a1	a2	a3	a4	a5	a6	a7	b1	b2	b3	b4	b5	c1	d1	d2
Mid Term Exam	√	√	√	√	√	√	√	√	√	√	√	√	√		
Final Exam	√	√	√	√	√	√	√	√	√	√	√	√	√		
Course Project	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Course Work &Quizzes	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Course Coordinator: Dr. Hussein Rady **(** **)**
Head of Department: Dr. Farouk Shabaan **(** **)**
Date: 22/9/2015