

University: Alexandria
Faculty: Science
Program: Computer Science

**Form no. (12)
Course Specification**

1- Course Data

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| Course Code: CS 322 | Course Title: <i>Usability Models and Theories of HCI</i> | Academic Year/Level: Third level (Second semester) |
| Specialization: Computer Science | No. of Instructional Units: Lecture <input type="text" value="2"/> Lab <input type="text" value="3"/> | |

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| 2- Course Aim | <ul style="list-style-type: none"> • This course is designed to encourage in students a sense of interest for Human computer interaction concept and its application in different contexts • Provide a solid foundation in the major areas of Human computer interaction • Provide education and training of high quality in Human computer interaction |
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| 3- Intended Learning Outcome |
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| a- Knowledge and Understanding | <p>a1. Describe the main concepts, definitions of graphic systems a2. Review theories and concepts used in Human computer interaction a3. Identify an understanding of the contribution and impacts of Human computer interaction in scientific, social, economic, environmental, political and cultural terms. a4. Input devices & output devices a5. interfaces and viewing a6. Icons, menus, dialog,</p> |
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| b- Intellectual Skills | <p>b1. Manipulate and apply appropriate theories, principles and concepts relevant to Human computer interaction</p> <p>b2. Critically assess and evaluate the literature within the field of Human computer interaction</p> <p>b3 Deduce and interpret information from a variety of sources relevant Human computer interaction</p> |
| c- Professional Skills | <p>c1. Plan, design and execute practical activities using techniques and procedures Appropriate to Human computer interaction</p> <p>c2. Execute a piece of independent research using Human computer interaction, computer media and techniques;</p> |
| d- General Skills | <p>d1. Develop appropriate effective written and oral communication skills relevant to the specific course of Human computer interaction</p> <p>d2. Demonstrate the ability to work effectively as part of a group</p> <p>d3. Solve problems relevant to Human computer interaction using ideas and techniques some of which are at the forefront of the discipline.</p> <p>d4. Solve problems relevant to applications in real life in computer science using old and new languages some of which are at the forefront of the discipline;</p> |
| 4- Course Content | <ul style="list-style-type: none"> • Computer systems usability, • Theoretical foundation, Cognitive models, Human information processing model, • User-system interaction model by Norman, • Distributed cognitive models, Cognitive perception, • Visual perception, Organization visual irritations laws, • Attention and memory, Focus attention, • Automatic and checked procedures, Memory limits, • Known ledge organization and intelligent models, • Representation theories and known ledge organization, • Intelligent models, Use of metaphors in human-computer interaction, • Conceptual models, Social characteristics of human behavior, • Conversation models, Treatise of organization behavior, • Interaction engineering: Introduction, Input devices, Text input devices, Pointing/selection devices, • Fit law, • Output devices, • Cathodic pipes displays, Flat displays, New devices, • Text readiness on displays, • Multimedia and virtual reality, • Sound at user interface, Command language, • Select from menu, Form filling, • Natural language, Direct handling, Systems for supporting complicity, • Classes and examples, Planning and social parameters of work systems, |

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| | <ul style="list-style-type: none"> • Interfaces for persons with special needs, Systems for persons with difficulties, •Hearing and moving difficulties, •Interactive systems planning • Planning interactive systems principles, Planning instructions, •Examples of wrong interfaces, Picture planning, •Network interface planning, Interactive system planning, •Planning methods, • Analysis of the initial idea and business target, •Requirements analysis, Usability specifications, •Interface planning, Interface specifications planning, •Interactive interface development, Fast prototyping language, •Interactive systems evaluation, •Introduction, Keystroke level analysis, •Cognitive walkthrough, Heuristic evaluation, •Compatibility check with planning rules and models. |
| 5- Teaching and Learning Methods | Lecturers – Home works - Oral discussion - Quizzes |
| 6- Teaching and Learning Methods for Students with Special Needs | NONE |
| 7- Student Assessment: | |
| a- Procedures used: | Lecturers – tutorials- homework – oral discussion - Quizzes |

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| b- Schedule: | Mid-Term exam... Week 10 Final exam Week 17 |
| c- Weighing of Assessment: | Term work (exam + home works) 20% Oral exam 10% Final exam 70% |
| 8- List of References: | Designing the user interface, human-computer interaction, Ben shneiderman |
| a- Course Notes | Course notes provided by the Faculty member of Computer Science Division, Math department, to be handled at the beginning of the semester. |
| b- Required Books (Textbooks) | |
| c- Recommended Books | |
| d- Periodicals, Web Sites, ..., etc. | |

Course Instructor: Dr. Yasser Fouad

Head of Department: Prof. Dr. Mahmoud El-Alem.

Date: 1/10/2011