University / Academy: Menoufia University

College / Institute: Faculty of Electronic Engineering

Department: Computer Science and Engineering

Course Specification

1- Course basic information:		
Course Code: CSE 368	**Course Title:** Computer Operating Systems	**Academic year: 2011/2012** **Level (3) – Semester : 2**
Faculty requirement	**Teaching hours: Lecture** 2 **Tutorial** 2 **Lab**	

2- Aim of the course	_ To understand general goals of operating systems. _ To understand the fundamental characteristics of computer system components. _ To understand the operating system architectures. _ To understand the basis required to design and implement an operating system. _ To know the advantages and disadvantages of some kinds of operating systems. _ To have acquired some practical skills to interact with the operating system components and programs and graphical interfaces.
3- Intended Learning Outcomes:	
A- Knowledge and Understanding:	a1. Concepts and theories of mathematics and sciences, appropriate to the computer science and engineering. a13. Engineering principles in the fields of logic design, circuit analysis, machine and assembly languages, computer organization and architectures, memory hierarchy, advanced

	computer architectures, embedded systems, signal processing, operating systems, real-time systems and reliability analysis. a14. Quality assessment of computer systems. a16. Related research and current advances in the field of computer software and hardware.
B- Intellectual Skills	b1. Select appropriate mathematical and computer-based methods for modeling and analyzing problems. b2. Select appropriate solutions for engineering problems based on analytical thinking. b14. Select the appropriate mathematical tools, computing methods, design techniques and tools in computer engineering disciplines, for modeling and analyzing computer systems.
C- Professional Skills	c1. Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to solve engineering problems. c14. Use appropriate specialized computer software, computational tools and design packages throughout the phases of the life cycle of system development. c15. Write computer programs on professional levels achieving acceptable quality measures in software development.
D- General Skills	d2. Work in stressful environment and within constraints. d6. Effectively manage tasks, time, and resources.
4- Course Contents	A practical introduction to modern operating systems, with a substantial laboratory component, primarily using UNIX and the C++ programming language-Programming with multiple "threads" of execution - synchronization/sharing primitives - pitfalls of multithreaded software - Operating system design - management of threads of execution, including scheduling algorithms - management of shared and unshared memory - virtual memory - file system management - input and output – security
5- Teaching and Learning Methods	- **Lectures** - **Exercises and tutorials**

	- **Research assignments** - **Reports**
6- Teaching and Learning Methods for disable students	**NA**
7- Student Assessment	
a- Assessment Methods	**- Reports, assignments, exercises, and final written exam to assess knowledge and understanding** **- Regular oral and written quizzes to assess intellectual skills.** **- Oral exams to assess professional skills.** **- Reports, assignments and discussions to assess general and transferable skill.**
b- Assessment Schedule	**- Exercise sheet/ Lab assignment : Weekly** **- Quizz-1: Week no 5** **- Mid-Term exam: Week no 8** **- Quizz-2: Week no 11** **- Lab exam: Week no 14** **- Final – term examination: Week no 15**
c- Weighting of Assessment	**- Class tutorial and quizzes : …0… %** **- Mid-term examination: …20… %** **- Case study and/or practical exam: …0… %** **- Final – term examination: …70… %** **- Other types of assessment: …10… %** **Total 100 %**
8- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.
b- Text books	Operating Systems Dr. Mervat Mosa
c- Recommended books	Siberschatz , Galvin and Gage, " Operating System Concepts", sixth edition , by John wiley&Sons Inc, 2002. William Stallings, "Operating system Internal and design principles", fifth Pearson Education Inc, 2005. Raymond W. Turner "Operating systems design and implementations", Macmillan publishing Company Inc, 1986.

	Deitel, Deitel, CHOFFNES, "Operating system" third edition, 2004 by PearsonEducaion Inc.
d- Periodicals, Web sites ……etc	Linux operating system web site.

Course Contents - ILOs Matrix

Content Topics	Week	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
A practical introduction to modern operating systems, with a substantial laboratory component, primarily using UNIX and the C++ programming language-	1	a1, a13, a14			
Programming with multiple "threads" of execution -	2, 3	a1, a14, a16			
synchronization/sharing primitives -	4		b2		
pitfalls of multithreaded software - Operating system design -	5, 6	a16	b2	c1, c14, c15	d6
management of threads of execution, including scheduling algorithms -	7, 8, 9	a16	b1, b2		d2, d6
management of shared and unshared memory - virtual memory	10, 11, 12	a13, a16	b1, b2, b14		d2, d6

- file system management - input and output – security	13, 14	a16	b1, b2, b14		d2, d6

Course coordinator: **Head of Department:**

Dr. Mervat Mosa **Prof. Nawal Ahmed El-Fishawy**

Date: / /