

University / Academy: Menoufia University

College / Institute: Faculty of Electronic Engineering

Department: Computer Science and Engineering

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Course Specification

1- Course basic information :		
Course Code: CSE469	Course Title: Advanced Computer Networks	Academic year: 2011/2012 Level (4) – Semester : 2
University requirement	Teaching hours: Lecture <input type="text" value="3"/> Tutorial <input type="text" value="2"/> Lab <input type="text" value="0"/>	

2- Aim of the course	<ul style="list-style-type: none">• Teaching the networking concepts and fundamentals.• Teaching new High Speed Networks with their MAC protocols, Fast Access Technologies: such as xDSL and Cable Modems.• Integrated Service Digital Networks.• TCP/IP, TCP/UDP, SPX/IPX, WWW, e-mail, DNS.• Network Security & Firewalls, WLAN.• Explore and define the aware of factors involved in the networking and internetworking technologies, to achieve good QoS of the recommended networking and internetworking.• Understanding the definition, architecture and components of Grid Computing.
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3- Intended Learning Outcomes:

A- Knowledge and Understanding:	a2. Basics of information and communication technology (ICT). a3. Characteristics of engineering materials related to the computer science and engineering. a8. Current engineering technologies as related to computer science and engineering. a13. Engineering principles in the fields of computer organization and architectures. a16. Related research and current advances in the field of computer software and hardware.
B- Intellectual Skills	b2. Select appropriate solutions for engineering problems based on analytical thinking. b3. Think in a creative and innovative way in problem solving and design. b8. Select and appraise appropriate ICT tools to a variety of engineering problems. b15. Select, synthesize, and apply suitable IT tools to computer engineering problems. b16. Proposing various computer-based solutions to business system problems. b20. Capability of integrating computer objects running on different system configurations.
C- Professional Skills	c1. Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to solve engineering problems. c2. Professionally merge the engineering knowledge, understanding, and feedback to improve design, products and/or services. c3. Create and/or re-design a process, component or system, and carry out specialized engineering designs. c14. Use appropriate specialized computer software, computational tools and design packages throughout the phases of the life cycle of system development;
D- General Skills	d1. Collaborate effectively within multidisciplinary team. d3. Communicate effectively. d4. Demonstrate efficient IT capabilities. d9. Refer to relevant literatures.
4- Course Contents	Understanding Networking Concepts and Fundamentals, Medium Access Control for High Speed Networks, Fast Access Technologies, Integrated Service Digital Networks, TCP/IP, TCP/UDP, SPX/IPX, WWW, e-mail and DNS. Security, Firewalls, Tunnels, and Routers. Wireless LANs, Quality of Service, and Grid Computing.
5- Teaching and Learning Methods	<ul style="list-style-type: none"> - Lectures - Tutorials - Research assignments
6- Teaching and Learning Methods	<ul style="list-style-type: none"> - NA

for disable students	
7- Student Assessment	
a- Assessment Methods	- Weekly sheet exercises at class room - Quizzes - Mid term, and final exams
b- Assessment Schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no 3 - Mid-Term exam: Week no 8 - Quizz-2: Week no 11 - Final – term examination: Week no 16
c- Weighting of Assessment	- Class tutorial and quizzes: 12% - Mid-term examination: 12% - Other types of assessment: 8% - Final – term examination: <u>68%</u> Total 100%
8- List of text books and references:	
a- Course notes	Lectures notes prepared in the form of a book authorized by the department.
b- Text books	<ul style="list-style-type: none"> • W. Stallings, “Data And Computer Communications,” 5th Edition Prentice Hall,1997. • A. S. Tanenbaum, “Computer Networks,” 3rd Edition Prentice Hall,1996. • R. R. Pannko, “Business Data Network And Telecommunications,” 5th Edition Prentice Hall,2005.
c- Recommended books	<ul style="list-style-type: none"> • M. J. Martin, “Understanding the Network, A practical Guide to Internetworking,” New Rider’s, 2000. • W. Buchanan, “Mastering Networks,” Macmillan, 1999. • D.D. Chowdhury, “High Speed LAN Technology Handbook,” 2000. • D.E. Comer, “Internetworking, with TCP/IP ,” Vol.I, Prentice Hall, 1995.
d- Periodicals, Web sitesetc	<ul style="list-style-type: none"> • All the Books, Journals, and Magazines, ...etc their title deal with any of the following: Internet, TCP/IP, TCP/UDP, SPX/IPX, Networks, Networking, Internetworking, Security, Firewalls, Tunnels, Routers, Quality of Service (QoS), and Grid Computing,...etc. • All web sites which included all the titles mentioned above, • IEEE Networks, IEEE SAC, IEEE Communications, Computer Networks, ..etc.

Course contents - ILOs Matrix

Content Topics	Week	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Introduction to Networking Fundamentals.	1	a2, a3,a8,a13,a16	b2,b3,b8,b15,b16,b20	c1,c2,c3,c14	d1,d3,d4,d9
Medium Access Control.	2	a2, a3,a8,a13,a16	b2,b3,b8,b15,b16,b20	c1,c2,c3,c14	d1,d3,d4,d9
Protocols for High Speed Networks.	3	a2, a3,a8,a13,a16	b2,b3,b8,b15,b16,b20	c1,c2,c3,c14	d1,d3,d4,d9
Fast Access Technologies.	4	a2, a3,a8,a13,a16	b2,b3,b8,b15,b16,b20	c1,c2,c3,c14	d1,d3,d4,d9
Integrated Services Digital Networks(ISDN).	5-6	a2, a3,a8,a13,a16	b2,b3,b8,b15,b16,b20	c1,c2,c3,c14	d1,d3,d4,d9
TCP/IP - TCP/UDP.	7	a2, a3,a8,a13,a16	b2,b3,b8,b15,b16,b20	c1,c2,c3,c14	d1,d3,d4,d9
SPX/IPX.	8-9	a2, a3,a8,a13,a16	b2,b3,b8,b15,b16,b20	c1,c2,c3,c14	d1,d3,d4,d9
WWW, E-mail, and DNS.	10-11	a2, a3,a8,a13,a16	b2,b3,b8,b15,b16,b20	c1,c2,c3,c14	d1,d3,d4,d9
Security and Firewalls, tunnels, and Routers.	12-13	a2, a3,a8,a13,a16	b2,b3,b8,b15,b16,b20	c1,c2,c3,c14	d1,d3,d4,d9
Internet Security.	14-15	a2, a3,a8,a13,a16	b2,b3,b8,b15,b16,b20	c1,c2,c3,c14	d1,d3,d4,d9

Course coordinator:

Dr. Ehab Aziz Khalil

Date:

Head of Department:

Prof. Dr. Nawal El-Feshawy