

University: Alexandria
Faculty: Science
Program: Computer Science

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

1- Course Data

Course Code: CS 304	Course Title: <i>Computer Network Architecture and Protocols</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"/>	

2- Course Aim	<ul style="list-style-type: none"> • This course is designed to encourage in students a sense of interest for Computer Networks concept and its application in different contexts • Provide a solid foundation in the major areas of Computer Networks • Provide education and training of high quality in Computer Networks
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3- Intended Learning Outcome

a- Knowledge and Understanding	a1. Describe the main concepts, definitions of Network systems a2. Review theories and concepts used in Computer Networks a3. Identify an understanding of the contribution and impacts of Computer Networks in scientific, social, economic, environmental, political and cultural terms. a4. Network systems and Internet protocols a5. TCP and UDP protocols a6. Client / server system
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b- Intellectual Skills	<p>b1. Manipulate and apply appropriate theories, principles and concepts relevant to Computer Networks</p> <p>b2. Critically assess and evaluate the literature within the field of Computer Networks</p> <p>b3 Deduce and interpret information from a variety of sources relevant Computer Networks</p>
c- Professional Skills	<p>c1. Plan, design and execute practical activities using techniques and procedures Appropriate to Computer Networks</p> <p>c2. Execute a piece of independent research using Computer Networks, computer media and techniques.</p>
d- General Skills	<p>d1. Develop appropriate effective written and oral communication skills relevant to the specific course of Computer Networks</p> <p>d2. Demonstrate the ability to work effectively as part of a group</p> <p>d3. Solve problems relevant to Computer Networks 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 protocols some of which are at the forefront of the discipline;</p>
4- Course Content	<ul style="list-style-type: none"> • OSI and TCP/IP layers, • Internet protocol suite, • Transmission control protocol, • User datagram protocol, • Sockets programming, Elementary TCP sockets, • Elementary, TCP client/server, • Elementary UDP sockets, • Name and address conversions, • Multicasting I/O multiplexing, • Threads, Client/server design alternatives, • Out-of-band data, Socket options, • Advanced UDP sockets.

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
b- Schedule:	Mid-Term exam... Week 10 Final exam Week 17
c- Weighing of Assessment:	Term work (exam + home works) 20% Lab exam 10% Oral exam 10% Final exam 60%
8- List of References:	Computer Networks
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