Course Specifications

Course Title:	Computer Networks
Course Code:	**CSI 322**
Program:	**Computer Sciences and Information**
Department:	**CSI**
College:	**Science in AL Zulfi**
Institution:	**Majmaah University**

Table of Contents

A. Course Identification

1. Credit hours: 3
2. Course type **a.** University ☐ College ☐ Department ☑ Others ☐ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: 6th Level
4. Pre-requisites for this course (if any)**:** Computer architecture CSI 313
5. Co-requisites for this course (if any)**:** NA

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	48	80 %
2	**Blended**	6	10 %
3	**E-learning**	3	5 %
4	**Correspondence**		
5	**Other**	3	5%

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	30
2	**Laboratory/Studio**	20
3	**Tutorial**	10
4	**Others** (Presentations & group discussions)	
	Total	60
Other Learning Hours*		
1	**Study**	20
2	**Assignments**	15
3	**Library**	10
4	**Projects/Research Essays/Theses**	5
5	**Others** (seminars)	
	Total	50

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

The goal of this course is to introduce computer networks, and discuss the three main aspects of networking i.e. architecture, algorithms, and implementation with focus on performance. Topics include: •Introduction: overview of computer networks •Fundamentals of data transmission: wired/wireless media, digital vs. analog transmission, data coding. •Multi-user

communication and multiplexing •LAN technology and data link protocols: point-to-point links and sliding window flow control, Ethernet and CSMA/CD, switched and carrier Ethernet, Wireless LAN and CSMA/CA, cellular networks and advanced multi-user communication.

2. Course Main Objective

1. Encouraging using modern technology in presenting teaching course
2. Updating the study material of the course in order to incorporate the new research in the field.
3. Use online resources and animations to help students to enhance knowledge about the topics that are presented in the course

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge:**	
1.1	Understand the main abstract concepts related to the layered communication architecture	a1
1.2	Students will develop an understanding of the core concepts of computer network and network protocols such as OSI and TCP/IP	b3
1.3	Explain the technology infrastructure and network requirements for local LAN.	a1, c1
2	**Skills :**	
2.1	Select, configure, and operate the principal components of Internet and network infrastructure and tools, safely and effectively.	b3
2.2	Implement computer network infrastructures.	c1
2...		
3	**Competence:**	
3.1		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Switching Methods, Network Services, Layered Protocol Architecture	8
2	Physical Layer: Transmission Media, Modulation, Encoding	4
3	Data Link Layer: Framing, Error Detection and Correction, ARQ Protocols, Data Link Layer Protocols	8
4	Local Area Networks: Multiple Access Protocols, Local Network Topologies, LAN protocols (CSMA/CD, Token Bus, Token Ring)	12
5	Network Layer: Packet Switching, Routing Algorithms, Traffic Control	8
6	TCP/IP Networking: Internet Protocols, Address Resolution, Name Resolution, IP, Transport Protocols: UDP and TCP	12
7	Application Layer: HTTP server, World-Wide-Web	8
Total		60

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge**		
1.1	Understand the main abstract concepts related to the layered communication architecture	Lectures, Lab demonstrations Case studies Individual presentations	Written Exam Homework assignments Class & lab Activities Quizzes
1.2	Students will develop an understanding of the core concepts of computer network and network protocols such as OSI and TCP/IP	Lectures Lab demonstrations Case studies Individual presentations Team work Exercises	Written Exam Homework assignments Lab assignments Class Activities Quizzes
1.3	Explain the technology infrastructure and network requirements for local LAN.		
1.4	Understand the legal, ethical, and managerial requirements of internet usage		
2.0	**Skills**		
2.1	Select, configure, and operate the principal components of Internet and network infrastructure and tools, safely and effectively.	Lectures. Lab demonstrations. Case studies. Individual presentations. Brainstorming.	Written Exam Homework assignments Lab assignments Class Activities Quizzes
2.1	Implement computer network infrastructures.		
2.2	Developing strong technical skills in combination with the of network management.		
3.0	**Competence**		
3.1	Work in groups and learn how to manage the time.	Small group discussions.	Written Exam Homework
3.2	Present short report in a written form orally using an appropriate scientific language.		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	First written mid-term exam	6	10%
2	Second written mid-term exam	12	10%
3	Presentation, class activities, and group discussion	Every week	10%
4	Homework assignments	After Every chapter	10%

#	Assessment task*	Week Due	Percentage of Total Assessment Score
5	Practical exam	15	20%
6	Final exam	16	40%
	Total		100%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

Office hours: Sun: 1-3, Mon. 12-1, Wed. 12-1
Office call: Sun. 12-1 and Wed 9-10
Email: yaserabdalla@yahoo.com

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Computer Networks 5th Ed. Andrew S. Tanenbaum, Pearson Prentice Hall, 2010
Essential References Materials	Data and Computer Communication 9th Ed., William Stallings. Pearson Prentice Hall, 2011.
Electronic Materials	https://www.coursera.org/
Other Learning Materials	Video and presentations that available with the instructor

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and Laboratories are available at the college of science at Al-Zulfi.
Technology Resources (AV, data show, Smart Board, software, etc.)	Smart Boards, software, data shows and AV technological resources are available.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	N/A

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	