



Faculty: Information Technology	
Department: Computer Science	Program: Bachelor
Academic year:	Semester:

Course Plan

First: Course Information

Course No.: 1501340	Course Title: <i>Computer Networks</i>	Credit Hours: 3	Theoretical: 3	Practical: 0
Prerequisite No. and Title: - 1501221 <i>Data Structure</i>		Section No.:	Lecture Time:	
Level in JNQF	7			
Type Of Course:	<input type="checkbox"/> <i>Obligatory University Requirement</i> <input type="checkbox"/> <i>Elective University Requirement</i> <input type="checkbox"/> <i>Obligatory Faculty Requirement</i> <input type="checkbox"/> <i>Elective Faculty Requirement</i> <input checked="" type="checkbox"/> <i>Obligatory Specialization Requirement</i> <input type="checkbox"/> <i>Elective Specialization Requirement</i> <input type="checkbox"/> <i>Ancillary course</i>			
Type of Learning:	<input checked="" type="checkbox"/> <i>Face-to-Face Learning</i> <input type="checkbox"/> <i>Blended Learning (2 Face-to-Face + 1 Asynchronous)</i> <input type="checkbox"/> <i>Online Learning (2 Synchronous+ 1 Asynchronous)</i>			

Second: Instructor's Information

Course Coordinator:					
Name:		Academic Rank:			
Office Number:		Extension Number:		Email:	
Course Instructor:					
Name:		Academic Rank:			
Office Number:		Extension Number:		Email:	
Office Hours:	<i>Sunday</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>

Third: Course Description

Computer networks experienced continuous growth during the last years and are expected to provide more and more services in the near future. The development of protocols and techniques requires solving several challenging problems. This course covers theoretical issues related to computer networking and practical systems, such as Internet protocols and technology.

Fourth: Course Objectives

1. Build an understanding of the basic concepts of computer networks, reference models such as OSI and TCP/IP.
2. Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in.
3. Familiarize the student with the main taxonomy and terminology of the computer networking area.
4. Expanding the student's skills of analyzing some issues that may appear on multiaccess channels.
5. Identify the different types of computer network topologies, services, and protocols.
6. Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer.
7. Developing the student's ability and skills to connect devices and enable smooth communication and data exchange between them.
8. Guide the students to understand the OSI and TCP layers, structure/format and role of each network layer in order to make them able to design and implement various network applications such as data transmission between client and server, file transfer, etc.

Fifth: Learning Outcomes

<i>Level descriptor according to (JNQF)</i>	<i>CILOs Code</i>	<i>CILOs</i> If any CLO will not be assessed in the course, mark NA.	<i>Associated PILOs Code</i> Choose one PILO for each CILO*	<i>Assessment method</i> Choose at least two methods
Knowledge	K1	Understand the main concepts, the transmission technologies, and the scale of computer networks, and identify the main categories of the physical media.	PK1	<ul style="list-style-type: none"> • Mid-term Exam • Quiz • Final Exam
	K2	List the design issues in layers, such as collision, error control, order control and flow control, and discuss the channel allocation schemes.	PK1	<ul style="list-style-type: none"> • Mid-term Exam • Final Exam
Skills	S1	Design the main topologies of computer networks, in terms of scale, such as LAN, MAN, WAN, etc.	PS1	<ul style="list-style-type: none"> • Mid-term Exam • Final Exam
	S2	Visualize some concepts that have been theoretically discussed in the module, such as the relationship between a service, protocol, and layer based on their understanding of these concepts.	PS1	<ul style="list-style-type: none"> • Mid-term Exam • Final Exam
Competencies	C1	Develop effective communication skills needed for group collaborations.	PC1	Participation
	C2	Build an independent personality that enable student to interact and involve in the discussion that may occur during semesters' lectures	PC1	Participation

*CILOs: Course Intended Learning Outcomes; PILOs: Program Intended Learning Outcomes; For each CILO, the PILO could be the same or different.

Sixth: Learning Resources

Main Reference:	<i>Computer Networks</i>			
Author: Andrew S., Tanenbaum and David J. Wetherall	Issue No.: 5th Edition	Print:	Publication Year: 2011	
Additional Sources and Websites:	<ul style="list-style-type: none"> <i>Data and Computer Communications, William Stallings, 7 Pearson Education, Inc. Pearson Prentice Hall Pearson Education, Inc. Upper Saddle River, NJ 07458, Eighth Edition 2007.</i> 			
Teaching Type:	<input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Laboratory <input type="checkbox"/> Workshop <input checked="" type="checkbox"/> MS Teams <input checked="" type="checkbox"/> Moodle			

Seventh: Course Structure

Week	Course Intended Teaching Outcomes (CILOs)	Topics	Teaching Procedures*	Teaching Methods**	References***
1	K1	Syllabus overview + Overview and definition of a computer network	Face-to-Face	Lecture, In-class Questions	Chapter 1
2	K1 C1 C2	Overview and definition of a computer network	Face-to-Face	Lecture, In-class Questions	Chapter 1
3	K1 S1 C1 C2	Network uses and classifications + Layered architecture and the reference models	Face-to-Face	Lecture, In-class Questions	Chapter 1
4	K1 S1 C1 C2	Layered architecture and the reference	Face-to-Face	Lecture, In-class Questions	Chapter 1
5	K1 S1 C1 C2	Layered architecture and the reference	Face-to-Face	Lecture, In-class Questions	Chapter 1
6	K2 S2 C1 C2	Physical Layer Concepts: Data Rate, Communication Medium, Encoding, Modulation, Multiplexing, Switching	Face-to-Face	Lecture, In-class Questions	Chapter 2

7	K2 S2 C1 C2	Physical Layer Concepts: Data Rate, Communication Medium, Encoding, Modulation, Multiplexing, Switching	Face-to-Face	Lecture, In-class Questions	Chapter 2
8	K2 S2 C1 C2	Physical Layer Concepts: Data Rate, Communication Medium, Encoding, Modulation, Multiplexing, Switching	Face-to-Face	Lecture, In-class Questions	Chapter 2
Midterm Exams					
9	K2 S2 C1 C2	The data link layer: Protocols; stop-and-wait, sliding window, protocols over noisy channels, Connection Establishment and Release PPP	Face-to-Face	Lecture, In-class Questions	Chapter 3
10	K2 S2 C1 C2	The data link layer: Protocols; stop-and-wait, sliding window, protocols over noisy channels, Connection Establishment and Release PPP	Face-to-Face	Lecture, In-class Questions	Chapter 3
11	K2 S2 C1 C2	The data link layer: Protocols; stop-and-wait, sliding window, protocols over noisy channels, Connection Establishment and Release PPP	Face-to-Face	Lecture, In-class Questions	Chapter 3
12	K2 S2 C1 C2	The data link layer: Protocols; stop-and-wait, sliding window, protocols over noisy	Face-to-Face	Lecture, In-class Questions	Chapter 3

		channels, Connection Establishment and Release PPP			
13	K2 S2 C1 C2	Multiple Access Control: Channel allocation problem, ALOHA, Slotted ALOHA, CSMA, CSMA/CD, SCMA/CA, Ethernet	Face-to-Face	Lecture, In-class Questions	Chapter 4
14	K2 S2 C1 C2	Multiple Access Control: Channel allocation problem, ALOHA, Slotted ALOHA, CSMA, CSMA/CD, SCMA/CA, Ethernet	Face-to-Face	Lecture, In-class Questions	Chapter 4
15 16	Final Exams				

*Teaching procedures: (Face-to-Face, synchronous, asynchronous).

** Teaching methods: (Lecture, video....).

*** Reference: (Pages of the book, recorded lecture, video....)

Eighth: Assessment Methods

Methods	Online Learning	Blended Learning	Face-To-Face Learning	Specific Course Output to be assessed					
				**If any CILO will not be assessed in the course, mark NA.					
				K1	K2	S1	S2	C1	C2
First Exam									
Second Exam									
Mid-term Exam			35	✓		✓	✓		
Participation			5					✓	✓
Asynchronous Activities									
Quizzes			10	✓					
Assignments									
Group presentation									
Final Exam			50	✓	✓	✓	✓		
Total out of 100			100						

Ninth: Course Policies

- All course policies are applied to all teaching patterns (online, blended, and face-to-face Learning) as follows:
 - a. Punctuality.
 - b. Participation and interaction.
 - c. Attendance and exams.
- Academic integrity: (cheating and plagiarism are prohibited).

Approval	Name	Date	Signature
Head of Department			
Faculty Dean			