Course Specifications

Course Title:	Computer Networks
Course Code:	461CIS-3
Program:	Information Systems
Department:	Information Systems
College:	College of Computer Science and Information Systems
Institution:	Najran University

Table of Contents

A. Course Identification

1. Credit hours:	**3 (2,2,1)**
2. Course type	
a.	University [ ] College [ ] Department [√] Others [ ]
b.	Required [√] Elective [ ]
3. Level/year at which this course is offered:	**Level 7 / Year 4**
4. Pre-requisites for this course (if any)**:**	
5. Co-requisites for this course (if any)**:**	

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	**75**	100%
2	**Blended**		
3	**E-learning**		
4	**Correspondence**		
5	**Other**		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	30
2	**Laboratory/Studio**	30
3	**Tutorial**	15
4	**Others** (specify)	
	Total	75
Other Learning Hours*		
1	**Study**	25
2	**Assignments**	5
3	**Library**	5
4	**Projects/Research Essays/Theses**	10
5	**Others** (specify)	
	Total	45

B. Course Objectives and Learning Outcomes

1. Course Description

This course provides general overview of Computer Networks and data communication concepts. In addition, it illustrates the network communication models, communication signals, and network classification. Moreover, it provides the students with the skills of Network analysis and design through covering the analysis and design in the following topics performance Management, Transmission Media, Network Devices, Network Addressing and Routing, Network Protocols, Networks scale, and Network security. Also, the course provides practical skills to troubleshoot the network issues.

2. Course Main Objective

Analyze and Design a computer networks based on real world environment and needs.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge:**	
1.1	Explain the key terminologies and concepts of data communications and networking.	K1
1.2	Illustrate the services and features of the various network layers.	K1
2	**Skills :**	
2.1	Classify the network protocols, devices, Mediums and types that can be used in a real-world network.	S2,S3
2.2	Analyze the Network Performance Management issues.	C3, S1
2.3	Design different types of networks based on IP classes and network topologies.	S2
2.4	Setup different types of network using proper network simulator.	S4
2.5	Troubleshoot the network errors in real world environment.	S4
3	**Competence:**	
3.1	Work with team in computer network project	C1, C2

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Data Communication And Computer Networks	4
2	Data representation and Physical structures	3
3	OSI model	6
4	TCP/IP protocol suit	6
5	Logical Addressing	6
6	Network Devices	6
7	Data and Signals	6
8	Network Transmission Media	6
9	Protocols	6
10	Routing and Switching Protocols	6
11	Network Security	6
12	Network Performance	6
13	New Topic in Data Communication And Computer Networks	6
14	Revision	2
Total		75

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	Explain the key terminologies and concepts of data communications and networking.	Lecture	Tests, Quizzes, and Assignments
1.2	Illustrate the services and features of the various network layers.	Lecture	Tests, Quizzes, and Assignments
2.0	**Skills**		
2.1	Classify the network protocols, devices, Mediums and types that can be used in a real world network.	Lecture, Lab	Tests, Quizzes, Assignments , and Lab
2.2	Analyze the Network Performance Management issues.	Lecture, Lab	Tests, Quizzes, Assignments , and Lab
2.3	Design different types of networks based on IP classes and network topologies.	Lecture, Lab	Tests, Quizzes, Assignments , and Lab
2.4	Setup different types of network using proper network simulator.	Lecture, Lab	Tests, Quizzes, Assignments , and Lab
2.5	Troubleshoot the network errors in real world environment.	Lecture, Lab	Tests, Quizzes, Assignments , and Lab
3.0	Troubleshoot the network errors in real world environment.		
3.1	Work with team in computer network project	Project	Project Presentation

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Lab activities	1-to-13	10
2	Assignment 1	4	1
3	Quiz 1	5	4
4	Test 1	7	15
5	Assignment 2	8	1
6	Quiz 2	9	4
7	Test 2	11	15
8	Final Lab	14	10
9	Final Test	15	40

E. Student Academic Counseling and Support

Office hours, and using emails. There is also an academic advisor assigned for each student.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	B.A. Forouzan, Data Communications and Networking, fourth edition, McGraw – Hill.
Essential References Materials	Tanenbanum A., Computer Networks, Seventh edition., Prentice Hall. Stallings, W., Data and computer communications, Seventh edition, Prentice-Hall.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Class Room Network Laboratory
Technology Resources (AV, data show, Smart Board, software, etc.)	data show, Cisco Packet Tracer Swoftware.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Switches, Routers, PCs

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	Indirect
Extent of achievement of course learning outcomes	Students	Indirect
Extent of achievement of course learning outcomes	instructor	Direct (CLO assessment software)
The quality of learning resources	Students	Indirect

H. Specification Approval Data

Council / Committee	Department Council
Reference No.	Session No. 10 (441-38-43300)
Date	17/02/2020