هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission
اعتماد
NCAAA
2024
TP-153

Course Specification
(Bachelor)

Course Title:	Data Communication and Computer Networks
Course Code:	201CCN-4
Program:	Bachelor of Science in Computer Networks
Department:	Networks and Communications Engineering
College:	Computer Science and Information Systems
Institution:	Najran University
Version:	1.0
Last Revision Date:	16/2/2025

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (.....)					
4 (3, 1, 0) [Theory, Lab, Tutorial]					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: Level 4 /Year 2					
4. Course General Description:					
Overview of Computer Networks, communication models, TCP/IP Protocol suit, Network Performance Management, Transmission Media, Network Devices, Network Addressing, Error Detection and Correction, Network Routing, Network Protocols, and optical networks					
5. Pre-requirements for this course (if any)**:**					
6. Co-requisites for this course (if any)**:**					
N/A					
7. Course Main Objective(s):					
The main objective of the course is to introduce the concept: Computer Networks, Addressing, and Data Communication					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	75	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		

No	Mode of Instruction	Contact Hours	Percentage
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity		Contact Hours
1.	**Lectures**	**[2 contact hour x 15 weeks]**	30
2.	**Laboratory/Studio**	**[2 contact hour x 15 weeks]**	30
3.	**Field**		
4.	**Tutorial**	**[1 contact hour x 15 weeks]**	15
5.	**Others (specify)**		
Total			75

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Explain the key terminologies and concepts of data communications and networking.	K2	Lecture	Tests, Quizzes, and Assignments
1.2	Illustrate the services and features of the various network layers.	K2	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.	S4	Lecture, Lab	Tests, Quizzes, Assignments , and Lab
2.2	Analyze the Network Performance Management issues.	S4	Lecture, Lab	Tests, Quizzes, Assignments , and Lab

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
2.3	Design different types of networks based on IP classes and network topologies.	S1, S6	Lecture, Lab	Tests, Quizzes, Assignments , and Lab
2.4	Setup different types of network using proper network simulator.	S2	Lecture, Lab	Tests, Quizzes, Assignments , and Lab
3.0	**Values, autonomy, and responsibility**			
3.1	Troubleshoot the network errors in real world environment.	V1	Lecture, Lab	Tests, Quizzes, Assignments , and Lab

C. Course Content

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

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	2,4,7,9	8%

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
2.	Assignments or mini project (presentation)	3,5,8,9	12%
3.	Midterm Examination	6th week	20%
4.	Lab Activities	2-14th week	10%
5.	Lab Final Examination	15th week	10%
6.	Final Examination	16th,17th week	40%
...			

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	B.A. Forouzan, Data Communications and Networking, Fifth edition, McGraw – Hill.
Supportive References	1. Tanenbanum A., Computer Networks, Seventh edition., Prentice Hall. Stallings, W., Data and computer communications, Tenth edition, Prentice-Hall.
Electronic Materials	Available in Blackboard
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Room B-57 Laboratory B-41
Technology equipment (projector, smart board, software)	data show, PCs.
Other equipment (depending on the nature of the specialty)	Routing and switching Lab

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	• Indirect (questionnaire) • University online questionnaire for

Assessment Areas/Issues	Assessor	Assessment Methods
		evaluation the course by students. **• Observing the student's opinions recorded on the college student site.** **• Appeal & suggestions box**
Effectiveness of Students assessment	**Peer reviewer**	**Direct (review of the quality of the exam done by course coordinator)**
Quality of learning resources	Faculty & students	The lecturer prepares and create the learning resources before the class begins and make them more related to the course. Questionnaire
The extent to which CLOs have been achieved	Faculty	Student assessments reviewing
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	NETWORK AND COMMUNICATIONS ENGINEERING DEPARTMENT COUNCIL
REFERENCE NO.	**14450824-0482-00014**
DATE	**5/3/2024**