هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

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Course Specification

Course Title:	Network Support
Course Code:	253 CIS-4
Program:	**Technical support**
Department:	**Computer Department**
College:	**Applied College**
Institution:	Najran University
Version:	**T -104 2022**
Last Revision Date:	**25-8-2023**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	**4 (2+2)hours**				
2. Course type					
a.	University ☐	College ☐	Department√	Track☐	Others☐
b.	Required √	Elective☐			
3. Level/year at which this course is offered: Level :4 - year :2nd					
4. Course general Description This course introduces an advanced topic in design and analysis of computer networks. Topics include: WAN technologies, Introduction to Routers, Routing algorithms, Basic router troubleshooting, Error and control messages, Switching Concepts, Overview on VPN networks, Introduction to Network Administration and Overview on Wireless Networks and Mobile Networks					
5. Pre-requirements for this course (if any): 165 CIS-3					
6. Co- requirements for this course (if any): No					
7. Course Main Objective(s) • Introduce the main concepts of WAN, WAN technologies and routers • Analyze and implement some of the routing algorithms, router troubleshooting and error and control messages • Understand basics and principles of computer networks (VPN, wireless networks, mobile networks)					

1. Teaching mode **(mark all that apply)**

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	90	100%
2.	E-learning		
3.	Hybrid • Traditional classroom • E-learning		
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	60
3.	Field	
4.	Tutorial	
5.	Others (specify)	
	Total	90

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

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Explain the concepts of WAN technologies ,routing and Switching	K2	Lecture Discussion	Exam • Assignments • Quizzes
1.2	Understand basics and principles of new generation of computer networks (VPN, wireless networks, mobile networks…)	K1	Lecture Discussion	Exam • Assignments • Quizzes
…				
2.0	Skills			
2.1	Analyze and implement some of the most advanced routing algorithms	S2	Lecture • Discussion • Lab work • Brainstorming	Exam • Assignments • Quizzes
2.2	Develop problem-solving and critical thinking skills with physical hardware and the Cisco Packet Tracer Network Simulator tool.	S2	Lecture • Discussion • Lab work • Brainstorming	Exam • Assignments • Quizzes
2.3	Improve network performance with multiprotocol path	S3	Lecture • Discussion • Lab work • Brainstorming	Exam • Assignments • Quizzes

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	redistribution and conditional routing			
3.0	Values, autonomy, and responsibility			
3.1	Work in a group to practice laboratory activities, delivers presentations	V2	Discussion • Project	Assignments • Report
3.2				
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Wired LANs: Ethernet	2 (Theory) +4 (Lab)
2.	Wireless LANs	2 (Theory) +4 (Lab)
3	Connecting LANs, Backbone Networks, and VirtuaL LANs	2 (Theory) +8 (Lab)
4	Wireless WANs: Cellular Telephone and Satellite Networks	2 (Theory) +4 (Lab)
5	SONETISDH	2 (Theory) +4 (Lab)
6	Virtual-Circuit Networks: Frame Relay' and ATM	2 (Theory) +4 (Lab)
7	Network Layer	4 (Theory) +4 (Lab)
8	Network Layer: Internet Protocol	4 (Theory) +4 (Lab)
9	Network Layer: Address Mapping, Error Reporting, and Multicasting	4 (Theory) +4 (Lab)
10	Network Layer: Delivery, Forwarding, and Routing	4 (Theory) +2 (Lab)
11	Process-fa-Process Delivery: UDP, TCP, and SeTP	4 (Theory) +4 (Lab)
12	Congestion Control and Quality of Service	2 (Theory) +4 (Lab)
13	Domain Name System	2 (Theory) +4(Lab)
Total		90

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Assignment	2,4,8	10%
2.	Monthly Exam	8	20%
3.	Practical exam	15	20%
4.	Final exam	17	50%
5.			
...			

*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	Behrouz A. Forouzan, Data communications and networking, 5th Edition, McGraw-Hill
Supportive References	Computer Networks 5th Ed. Andrew S. Tanenbaum, Pearson Prentice Hall, 2010
Electronic Materials	Najran University E.Library • Saudi Digital Library
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Computer Lab, A Lecture room
Technology equipment (projector, smart board, software)	Network Simulators, Software to manage networks
Other equipment (depending on the nature of the specialty)	Networks cabling tools, Switches and routers

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	***Student***	***Questioners***
Effectiveness of students assessment	Staff committee	Cross checking
Quality of learning resources	Faculty Administration	Review and check the results
The extent to which CLOs have been achieved	Quality management in the department	A review of the measurement of learning outcomes
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE