هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Computer Networks 2**
Course Code:	**ITXXXX**
Program:	**Information Technology**
Department:	**Information Technology**
College:	**Computer Science and Information Technology**
Institution:	**Albaha University**
Version:	*Course Specification Version Number*
Last Revision Date:	*Pick Revision Date.*

Table of Contents:

Content	Page
A. General Information about the course	3
1. Teaching mode (mark all that apply) 2. Contact Hours (based on the academic semester)	4
B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods	5
C. Course Content	5
D. Student Assessment Activities	6
E. Learning Resources and Facilities	7
1. References and Learning Resources	7
2. Required Facilities and Equipment	7
F. Assessment of Course Qualit	7
G. Specification Approval Data	8

A. General information about the course:

Course Identification					
1. Credit hours:	3 Hours				
2. Course type					
a.	University ☐	College ☐	Department☒	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered:6th					
4. Course general Description **Lecture:** Technologies related to data communication and networking may be the fastest growing in our culture today. People use the Internet more and more every day. They use the Internet for research, shopping, airline reservations, checking the latest news and weather, and so on. This course extends the knowledge gained in Networks (1) to cover the architecture, protocols, and technologies that enables clients in different LANs to route and exchange data. It covers wired and wireless local area networks, virtual local area networks, network layer protocols, transport layer protocols, and application layer protocols. **Lab:** The lab is planned to give students practical experiments on computer networks. Students will practice various aspects about: • Viewing Wired and Wireless NIC Information • Viewing Network Device MAC Addresses • Using Wireshark to Examine Ethernet Frames • Viewing Host Routing Tables • Calculating IPv4 Subnets • Designing and Implementing a Subnetted IPv4 Addressing Scheme • Using the CLI to Gather Network Device Information					
5. Pre-requirements for this course (if any):					
6. Co- requirements for this course (if any):					
7. Course Main Objective(s) **The main objective for this course is to teach students how to:** • **Describe the role of the higher layers of a computer network.** • **Recognize the various aspects of routing process.** • **Explain the fundamentals of wired wireless, and virtual LANs.** • **Analyze the principles and operations of subnetting.** • **Explain the operation and principles of unicast and multicast routing.** • **Analyze the principles and operations of Transport Layer and Application Layer protocols.** • **Discuss concepts and techniques in oral presentations.** • **Participate in groups collaboratively.**					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	44	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	22
2.	Laboratory/Studio	22
3.	Field	
4.	Tutorial	
5.	Others (specify)	
	Total	44

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	Describe the role of the higher layers of a computer network.	K1	Lectures Lab	Midterm Exam
1.2	Recognize the various aspects of routing process.	K1	Lectures Class discussions	Homework Final Exam
2.0	Skills			
2.1	Explain the fundamentals of wired wireless, and virtual LANs.	S4	Class discussions Assignments	Homework Midterm Exam Lab Exam
2.2	Analyze the principles and operations of subnetting.	S5	Lectures Assignments Lab	Homework Lab Exam Final Exam
2.3	Explain the operation and principles of unicast and multicast routing.	S4	Lectures Assignments Lab	Lab Exam Final Exam
2.4	Analyze the principles and operations of Transport Layer and Application Layer protocols.	S5	Lectures Assignments Lab	Lab Exam Final Exam
2.5	Discuss concepts and techniques in oral presentations	S6	Case-based discussion	Homework
3.0	Values, autonomy, and responsibility			
3.1	Participate in groups collaboratively.	V1	Team-based learning	Homework

C. Course Content

No	List of Topics	Contact Hours
	Lectures	
1.	Wired LANs Ethernet	2

2.	Wireless LANs	2
3.	Virtual LANs	2
4.	Subnetting	4
5.	Unicast Routing	4
6.	Multicast Routing	2
7.	Transport-Layer Protocols	4
8.	Application-Layer Protocols	2
Total		22

Labs		
1.	Lab. 1: Viewing Wired and Wireless NIC Information	4
2.	Lab. 2: Viewing Network Device MAC Addresses	2
3.	Lab. 3: Using Wireshark to Examine Ethernet Frames	2
4.	Lab. 4: Viewing Host Routing Tables	4
5.	Lab. 5: Calculating IPv4 Subnets	4
6.	Lab. 6: Designing and Implementing a Subnetted IPv4 Addressing Scheme	4
7.	Lab. 7: Using the CLI to Gather Network Device Information	2
Total		22

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework	Week 4,7,10	15%
2.	Midterm exam	Week 6	25%
3.	Lab Exam	Week 10	20%
4.	Final Exam	Week 13	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	Forouzan, Behrouz. "Data Communications and Networking", 5th edition, Mc-Graw Hill International Edition, 2013.
Supportive References	• Computer Networks, 5th Edition by Andrew Tanenbaum and David Wetherall, Prentice Hall, 2010. ISBN 978-0132126953. • William. Stallings, "Data and Computer Communications", 10th edition, Pearson Prentice Hall, 2013. • Douglas. Comer, "Computer Networks and Internets", sixth edition. Pearson International Edition, 2014.
Electronic Materials	• Access to the Saudi Digital Library (SDL). • Using the learning management system of the university – Rafid System (https://lms.bu.edu.sa/). • IEEE/ACM Transactions on Networking • https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=90
Other Learning Materials	None

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	A classroom or lecture hall with whiteboard for 25 students.
Technology equipment (projector, smart board, software)	• A digital image projection system with connection to desktop computer or laptop computer. • High-speed Internet connection. • An instructor computer station.
Other equipment (depending on the nature of the specialty)	A laboratory with: 25 computers with Windows and Packet Tracer.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students Peer Reviewer Program Leader	Indirect: Survey Direct: Peer Review Direct: Class Visits
Effectiveness of students assessment	Exams Evaluation Committee Students	Direct: Exam Review Indirect: Survey
Quality of learning resources	Faculty Students	Indirect: Survey Indirect: Survey
The extent to which CLOs have been achieved	Faculty	Direct: Exams

Assessment Areas/Issues	Assessor	Assessment Methods
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	