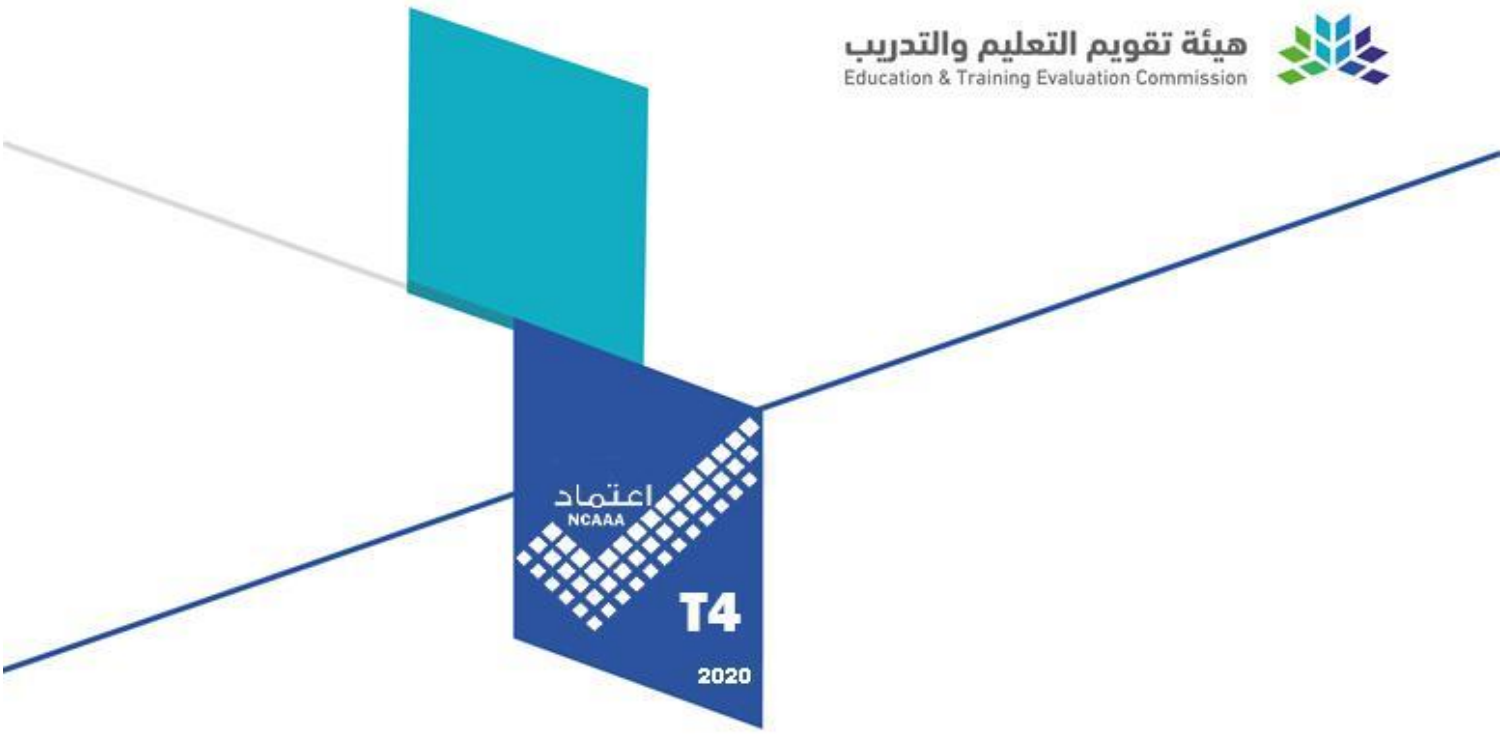
هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	Computer Networks
Course Code:	503443-4
Program:	Bachelor in Computer Engineering
Department:	Department of Computer Engineering
College:	College of Computers and Information Technology
Institution:	Taif University

Table of Contents

A. Course Identification

1. Credit hours: 4
2. Course type **a.** University ☐ College ☐ Department ■ Others ☐ **b.** Required ■ Elective ☐
3. Level/year at which this course is offered: 8/4
4. Pre-requisites for this course (if any)**:** 503311-3, 501453-3
5. Co-requisites for this course (if any)**:** None

6. Mode of Instruction (mark all that apply)

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

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	45
2	**Laboratory/Studio**	30
3	**Tutorial**	
4	**Others** (specify)	
	Total	75

B. Course Objectives and Learning Outcomes

1. Course Description

This course provides the students with an understanding of the fundamental concepts of computer networking. Important concepts related to layered architecture, wired and wireless local area networks, wide area networks, packet switching and routing, transport protocol, flow control, and congestion control are covered in this course.

2. Course Main Objective

1. Students should explain the computer network principles and paradigms.
2. The student should distinguish the network layers, and know their protocols and functionalities.
3. Students get hands on experience on computer networks.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Describe the network architecture, network features and OSI layered services.	K1
1.2	Know the mathematics, probability, and statistics required to analyze access and networking protocols.	K1
1.3	Explain network protocols for routing, flow control, and congestion control.	K1
2	**Skills :**	
2.1	analyze end-to-end network transmission	S1
3	**Values:**	

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to computer networks, features and components, OSI and Internet layered models	3
2	Physical layer: physical media types, interfaces, and modulation techniques	3
3	Data link layer (Wired LAN 802.3): framing, error control, flow control. Logical link control, medium access control	4
4	Data link layer (Wireless LAN 802.11): framing, error control, flow control	5
5	wireless medium access control	5
6	Network layer: circuit and packet switching IP protocol, addressing, subnetting and Mid Semester Exams	5
7	Routing algorithms	5
8	Transport layer: services, UDP, TCP, sockets	5
9	Flow control and congestion control algorithms.	5
10	Application Layer protocols (Web, HTTP, FTP, Email, DNS, etc) (if time permit)	5
11	Lab	30
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 and Understanding**		
1.1	Describe the network architecture, network features and OSI layered services.	Lecture Discussion Problem Solving	Written Exams Quizzes Assignments

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.2	Know the mathematics, probability, and statistics required to analyze access and networking protocols.	Lecture Discussion Problem Solving	Written Exams Quizzes Assignments
1.3	Explain network protocols for routing, flow control, and congestion control.	Lecture Discussion Problem Solving	Written Exams Quizzes Assignments
2.0	**Skills**		
2.1	analyze end-to-end network transmission	Lecture Discussion Problem Solving	Written Exams Quizzes Assignments Oral Test Practical Test
3.0	**Values**		
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignments	2,4,6,8,10	10%
2	Midterm Exam	7	20%
3	Lab Exam	15	20%
4	Final Exam	16	50%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:
Teaching staff provide at least 6 office hours for students to help them in the course as well as in any other academic issues.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Behrouz Forouzan, Data Communications and Networking, fourth edition, McGraw-Hill,
Essential References Materials	James F. Kurose and Keith W. Ross, Computer Networking: A Top-Down Approach Featuring the Internet, 06 th edition, Addison Wesley, Pearson.
Electronic Materials	

Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Traditional Classrooms, Laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	**Packet Tracer Simulation Version License**

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Extent of achievement of course learning outcomes	Students	Indirect (Survey)
Effectiveness of teaching and assessment	Students	Indirect (Survey)
Extent of achievement of course learning outcomes	Faculty	Course Report

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Computer Engineering Council / Curriculum Committee
Reference No.	16
Date	04/02/2019

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Computer Engineering Department
TU جامعة الطائف TAIF UNIVERSITY