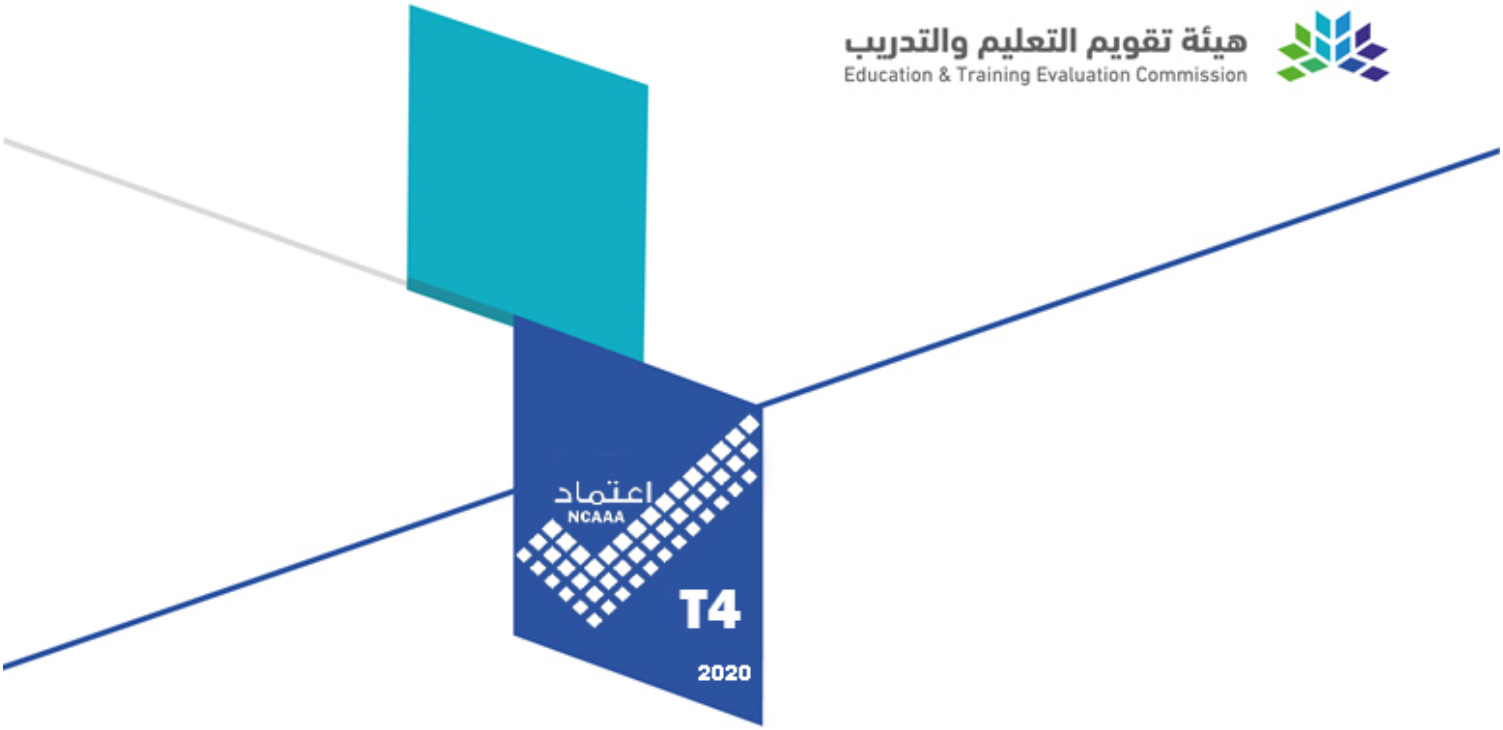
هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	Data Transmission and Computer Networks
Course Code:	IT 321
Program:	Information Technology & Computer Science
Department:	Information Technology
College:	College of Computer and Information Sciences
Institution:	Majmaah University

Table of Contents

A. Course Identification

1. Credit hours:	**3 (3,0,1)**
2. Course type	
a.	University ☐ College ☒ Department ☐ Others ☐
b.	Required ☒ Elective ☐
3. Level/year at which this course is offered:	Level 8
4. Pre-requisites for this course (if any)**: CS240-Operating System**	
5. Co-requisites for this course (if any)**: NIL**	

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	44	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	33
2	**Laboratory/Studio**	
3	**Tutorial**	11
4	**Others** (specify)	
	Total	44

B. Course Objectives and Learning Outcomes

1. Course Description

In this course students will develop a deeper understanding of modern compiler techniques applied to general purpose programming languages. It will give students a working knowledge of the foundations, tools, and engineering approaches used in developing formal language translators.

2. Course Main Objective

This course aims to provide a theoretical as well as experimental background of Computer Network with a focus on the following:

Introduction to computer networks, Network architecture, OSI reference model, Transmission media, Transmission Impairments, Data encoding; Data Link: Error Detection, Medium Access control Protocols and standards, MAC Addressing, Link layer Switches, LAN standards & Devices: Ethernet and IEEE standards for LANs,

Wireless networks; Network Layer: Virtual circuit and Datagram Networks, Router Structure, The Internet Protocol (IP), Routing Algorithms, Broadcasting and Multicasting; Transport Layer: TCP and UDP services, designs, and performance, Principles of Reliable Data Transfer; Application layer: The Web and HTTP, FTP, Electronic Mail, and DNS.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1		
1.2		
1.3		
1...		
2	**Skills :**	
2.1	CLO1: Understand and analyze the structure of an abstract layered protocol model (OSI, TCP/IP) and Transmission Media	S1,
2.2	CLO2: Understand and implement data link (DL) layer protocols	S1
2.3	CLO4: Understand and implement the principles of Delivery, Forwarding, and Routing	S3
2...		
3	**Values:**	
3.1	CLO3: Understand the principles of Network Layer Services	V1
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to computer networks, Network architecture, OSI reference model	3
2	Transmission media, Transmission Impairments	3
3	Data encoding; Data Link: Error Detection	3
4	Medium Access control Protocols and standards ,MAC Addressing	3
5	Link layer Switches, LAN standards & Devices, Ethernet and IEEE standards for LANs	3
6	Network Layer: Virtual circuit and Datagram Networks	3
7	Router Structure, The Internet Protocol (IP), Routing Algorithms Broadcasting and Multicasting	3
8	Transport Layer: TCP and UDP services	3
9	Designs, and performance of TCP, Principles of Reliable Data Transfer	3
10	Application layer Protocol: The Web and HTTP	3
11	FTP, Electronic Mail, and DNS Protocol	3
Total		33

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	Students will learn, understand and explain the main techniques and algorithms used in compilers.	Lectures, Discussions	Exams, Assignments, Participation
1.2			
…			
2.0	**Skills**		
2.1	CLO1: Understand and analyze the structure of an abstract layered protocol model (OSI, TCP/IP) and Transmission Media	Classroom Teaching	Class Test, Mid Exam, Final Exam
2.2	CLO2: Understand and implement data link (DL) layer protocols	Classroom Teaching	Class Test, Mid Exam, Final Exam
2.3	CLO4: Understand and implement the principles of Delivery, Forwarding, and Routing	Oral /Written Communication, Seminar	Group Assignments, Mini Project
2.4	CLO5: Understand principles of Transport Layer Services & design principles of Transport Protocols (UDP & TCP) and application layer services	Classroom Teaching Mini Project, Lab Exercises	Class Test, Mid Exam, Final Exam Lab based Assignments, Mini Project
3.0	**Values**		
3.1	CLO3: Understand the principles of Network Layer Services	Mini Project, Graduation Project, Lab Exercises	Oral or Written Communication, Seminar
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	**Midterm Examination:**	**Week 6**	**20%**
2	**Final Examination**	**Week 11**	**40%**
3	**Quiz**	**All Weeks**	**15%**
4	**Exercises / Assignments / Homework:**	**All Weeks**	**15%**
5	**Lab based Assignments**	**All Weeks**	**5%**
7	**Attendance / Participation**	**All Weeks**	**5%**
8			

***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 : Every faculty will be assigned 10 students in the corresponding department for academic advising. Students can meet the faculty during advising hours or whenever the faculty is in the office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	**Data Communications, Networking, 5th Edition, Behrouz, Forouzan, McGraw-Hill 2012**
Essential References Materials	Tanenbaum, Computer Networks, 5th Edition, Prentice Hall, 2010. James F. Kurose, and Keith W Ross, Computer Networking: A Top-Down Approach, Addison-Wesley, 2012. Larry Patterson and Bruce Davis, Computer Networks: A systems Approach, Morgan Kaufmann, 2011.
Electronic Materials	• http://www.sdl.edu.sa • http://lms.mu.edu.sa
Other Learning Materials	CISCO Packet tracer

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Class Room. Lab.
Technology Resources (AV, data show, Smart Board, software, etc.)	PC or Laptop with Windows/Linux, Smart Board, Projector
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Internet Connection

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Final Exam Answer Scripts Verification	Peer faculty members	Review
Course Feedback	Students	Survey

Evaluation Areas/Issues	Evaluators	Evaluation Methods

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 Science Department
Reference No.	
Date	

College of Computer and Information Sciences
كلية علوم الحاسب والمعلومات

جامعة المجمعة
Majmaah University

COURSE SYLLABUS

DEPARTMENT OF COMPUTER SCIENCE

SPRING 2022

Course Code	Course Title
IT332	Ethics & Professional Practice

Course Credit : 2 (2,0,0)
Pre-requisite :
Instructor : Dr. Badr Almutairi
Computer Science Department
College of Computer and Information Sciences
Majmaah University
Email: b.algoian@mu.edu.sa
Course Time(s) : Tue 10:00 AM- 11:50 AM
Location(s) : Room 6
Office Hours : Tue 11:45 AM- 12:10 PM,

Final Exam : As per schedule --- (Comprehensive)
Textbook(s) : Joseph M. Kizza: "Ethical and social issues in Information Age" 5th Edition Springer 2013.

Course Requirements and Grading Policy:

1-	Attendance and Participation in class discussion	10%
2-	Assignments	20%
3-	Midterm Examination: Week # 8	20%
4-	In Class Test: Week # 11	10%
5-	Final Examination: (as per schedule)	40% (COMPREHENSIVE)
	Total	**100%**

Grades:

A+	:	95 to 100 %
A	:	90 to < 95%
B+	:	85 to < 90%
B	:	80 to < 85%
C+	:	75 to < 80%
C	:	70 to < 75%
D+	:	65 to < 70%
D	:	60 to < 65%

F : Below 60 %

Tests: 30 %

- Midterm Exam	:	Week 8	20%
- In-class test / Exercise / Lab	:	Week 11	10%

Final Examination: 40 %

Final Exam: As per schedule (COMPREHENSIVE)

Course Description:

This course will develop the ethical foundations of good professional practice in information technology. It will provide the necessary background of ethical theories and practices, and discuss the role of professional organizations in maintaining such practice, specifically in the information technology industry. Also, It considers legislation that applies in the information technology industry, including major areas of ethical related in information technology, such as, software ownership, data privacy, and computer cracking

Course Learning Outcomes:

1. Understand ethical theories: authoritarian, intuitionist, egoist, utilitarian, and deontologist.
2. Understand origin and purpose of professions, internal regulation versus external regulation, dimensions of professional responsibility, professional organizations: ethics and codes of conduct.
3. Recognize computer hacking, computer cracking, and difficulties with traditional legal concepts.
4. Understand the meaning of privacy, computer data and human dignity, the problematic status of information stored on computers.
5. Understand the Theories of property and ownership: Patent, Copyright, and trade secrets, and Ownership of computer software

Course Outlines:

Week	Course Topics	Book's Chapter	Event Name	Week Due
1	Morality and the Law	Chapter 2 Textbook		
2	Ethics and Ethical Analysis	Chapter 3 Textbook		
3	Ethics and Professions	Chapter 4		

		Textbook		
4	Ethics and Professions	Chapter 4 Textbook		
5	Anonymity	Chapter 5 Textbook	Assignment	
6	Security and Privacy	Chapter 5 Textbook		
7	Intellectual Property Rights and Computer Technology	Chapter 6 Textbook		
8	**Midterm Exam**			
9	Computer Crimes	Chapter 9 Textbook		
10	Ethics in Cyperspace	Chapter 12 Textbook		
11	Ethics in Cyperspace	Chapter 12 Textbook		
12	Ethical, Privacy, and Security Issues in the Online Social Network Ecosystems	Chapter 13 Textbook	Quiz/test Assignment	
13	Mobile Systems and Their Intractable Social, Ethical and Security Issues	Chapter 14 Textbook		
14	Review Week			
15	Review Week			
16	**FINAL EXAMS**			

Attendance and Participation in Class Discussion:

- Attendance is necessary but not sufficient which means that you must attend mentally as well as physically.
- Regular classroom attendance and regular participation in the class discussion and solving in class problems are essential.
- Successful learning requires good communication between students and instructors.
- This is a Course Name course, covered in 15 weeks, to be successful in this class, you should plan to arrive on time and participate in class discussion, ask questions, make use of the resources available in the library, and complete all homework.
- You should expect to spend several hours a week outside of class time for practice problems, homework, etc.
- Your contribution is to participate in the class activities within the frame work established in the class syllabus.
- You are responsible for your own attendance. If you miss a class, you are responsible for finding the notes and assignments from a classmate.
- If a student is absent for a class due to an acceptable excuse (like death in first family member, accident, hospitalization) or any other strong reason which makes it impossible to attend class, his excuse will be considered under the condition that the

student submits the supportive documents within Maximum a Week after his absence.

Homework, Quizzes and Chapter Tests:

- The homework assignments are problems from each section in the text book.
- Take time to include all the steps when working your homework problems.
- Doing so will organize your thinking and avoid computational errors.
- It will also give you complete step-by-step solutions of the exercises that can be used to study for exams.
- Writing down all the steps and keeping your work organized may also give you a better chance to receive partial credit
- Solution in the exam is the mirror image of your homework.
- NO ACCEPTENCE FOR UNORGANIZED & UNNEAT ASSIGNEMETS.
- Before each class, please complete the homework assigned in the previous class and it is important to study the previous class material to be able to follow and understand the present class.
- Be ready any time for a Quiz as a problem from the Homework.

General Notes:

- PLEASE TURN CELL PHONES OFF DURING CLASS!!! Cell phones, blackberries, iPods, etc. may not be accessed during class.
- The Final Exam will be comprehensive, covering all the material presented in the course
- NO MAKE UP EXAMS (except for what is stated under the "Regulations for Accepting Excuses for Not Attending Exams" section).
- Last day to drop: **()**
- Last day to withdraw without grade penalty: **()**
- Please note fire exits.
- The syllabus is subject to change.
- For any questions, please email me through my MU Email.

Regulations for Accepting Excuses for Not Attending Exams:

1. If Student is absent for Final Exam, Midterm Exam or Class Test due to a strong (like death in first family member, Accident, Hospitalization) or any other strong reason which makes impossible to attend Exam will be considered and student should submit the supportive documents to Vice Dean office within Maximum a Week after completion of the Examination.
2. If a Student is absent in Class Test the Instructor take decision to accept or reject the Excuse submitted by the Student.
3. For Midterm Exam, the decision will be taken by the Vice-Dean for Academic Affair.
4. For Final Exam College Council approval is required.

Learning Environment: MU is a place for learning and growing. You should feel safe and comfortable anywhere on campus. To meet this objective, you should:

1. let your Instructor, Vice-Dean or Dean know if any unsafe, unwelcome or uncomfortable situation arises that interferes with the learning process;
2. inform the instructor within the first two weeks of classes if you have special needs that may affect your performance in this course.

Academic Dishonesty: When College officials award credit, degrees, and certificates, they must assume the absolute integrity of the work you have done; therefore, it is important that you maintain the highest standard of honor in your scholastic work. The College does not tolerate academic dishonesty. Students who are not honest in their academic work will face disciplinary action along with any grade penalty the instructor imposes. Procedures for disciplinary measures and appeals are outlined in the Student Handbook. In extreme cases, academic dishonesty may result in dismissal from the College. Academic dishonesty, in general, involves one of the following acts:

1. Cheating on an examination or quiz, including the giving, receiving, or soliciting of information and the unauthorized use of notes or other materials during the examination or quiz.
2. Buying, selling, stealing, or soliciting any material purported to be the unreleased contents of a forthcoming examination, or the use of such material.
3. Substituting for another person during an examination or allowing another person to take your place.
4. Plagiarizing means taking credits for another person's work or ideas. This includes copying another person's work either word for word or in a substance without acknowledging the source.
5. Accepting help from or giving help to another person to complete an assignment, unless the instructor has approved such collaboration in advance.
6. Knowingly furnishing false information to the college; forgery and alteration or use of College documents or instruments of identification with the intent to defraud.