COURSE DESCRIPTIONS

Faculty	Business				
Department	**Management Information System**			**NQF level**	4
Course Title	**Data Communications and Networks**	**Code**	**306401**	**Prerequisite**	834101
Credit Hours		**Theory**		**Practical**	
Course Leader	Dr. Ahmad Alradaideh	**email**			
Lecturers		**emails**			
Lecture time		**Classroom**			
Semester		**Production**		**Updated**	
Awards				**Attendance**	Fulltime

ShortDescription
This course teaches the design and implementation techniques essential for engineering robust networks. Topics include networking principles, Transmission Control Protocol/Internet Protocol, naming and addressing (Domain Name System), data encoding/decoding techniques, link layer protocols, routing protocols, transport layer services, congestion control, quality of service, network services, Software Defined Networks (SDNs), programmable routers and overlay networks, wireless and mobile networking, security in computer networks, multimedia networking, and network management.
Course Objectives

Learning Outcomes
A. Knowledge - Theoretical Understanding
1. a1.. :Identifying the information sharing, flow of data, categories of network, different topologies and coding schemes.
B. Knowledge - Practical Application
1. a2.. Detect of signals and threats on network then Comparing the different transmission media.
C. Skills - Generic Problem Solving and Analytical Skills
1. b1.. Solving errors in data communications systems
D. Skills - Communication, ICT, and Numeracy
1. b2. Evaluate transmission media and transmission devices
E. Competence: Autonomy, Responsibility, and Context
c1. Design a virtual local and wide area network .

Teaching and Learning Methods
This course contains both theory and practical activities. Faculties link the theory chapters with labs and hands-on activities. Faculty must also involve students in discussions related to new developments in communication systems. The students are given ample time to do the labs associated with the course.
Assessment Methods
Attainment of course educational objectives by the student is measured by scores on examinations and quizzes, evaluation of written documentation of research activities, Labs evaluation of oral presentations, and class instruction assessment techniques.

Course Contents					
Week	**Hours**	**CLOs**	**Topics**	**Teaching & Learning Methods**	**Assessment Methods**
1	3		Introduction and Overview	Lecture, Reading Lecture notes in a class, Questions	
2	3		Application Layer	Lecture, Reading Lecture notes in a class, Questions	Tests – Quiz 1
3	3		Data Encoding and Transmission	Lecture, Reading Lecture notes in a class, Questions	
4	3		Data Link Control	Lecture, Reading Lecture notes in a class, Questions	Case Study Introduction
5-6	6		Wireless and Mobile Networks	Lecture, Reading Lecture notes in a class, Questions	Tests – Quiz 2
7-8	6		Wireless and Mobile Networks	Lecture, Reading Lecture notes in a class, Questions	Mid Exam
9	3		Transport Layer (Part 1) + Transport Layer (part2)	Lecture, Reading Lecture notes in a class, Questions	
10-11	3		Network Layer – The Data Plane + Multimedia Networking	Lecture, Reading Lecture notes in a class, Questions	Practical 1
12	3		Security in Computer Networks	Lecture, Reading Lecture notes in a class, Questions	Practical 2
14	3		Network Management	Lecture, Reading Lecture notes in a class, Questions	Final Exam

Infrastructure	
Textbook	Computer Networks (5th Edition) 5th Edition, by Andrew S. Tanenbaum, David J. Wetherall , Pearson, 2011
References	Data communication & Networking by BahrouzForouzan. Computer Networking: A Top-Down Approach 5th/6th Edition, Addison Wesley, 2010
Required reading	**https://www.amazon.com/Electronic-Networks-Crossing-Boundaries-Communities/dp/0867094540**
Electronic materials	**https://www.amazon.com/Electronic-Networks-Crossing-Boundaries-Communities/dp/0867094540**
Other	

Course Assessment Plan							
Assessment Method		**Grade**	**CLOs**				
			a1	a2	b1	b2	**c1**
First(Midterm)		30	6	6	6	6	6
Second (if applicable)							
Final Exam		50	10	10	10	10	10
Coursework							
Coursework assessment methods	Assignments						
	Case study						
	Discussion and interaction						
	Group work activities						
	Labtests and assignments						
	Presentations						
	Quizzes	20	4	4	4	4	4
Total		100	20	20	20	20	20

Plagiarism
Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone assisting another to commit plagiarism (for example by knowingly allowing someone to copy your code). Plagiarism is different from group work in which a number of individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. In order to allow proper assessment that this is indeed the case, you must adhere strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism.