Course Specifications

Course Title:	Wireless & Mobile Computing
Course Code:	CSI-531
Program:	Computer Science and Information Technology
Department:	Computer Science and Information
College:	Science at Al-Zulfi
Institution:	Majmaah

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A. Course Identification

1. Credit hours: 3	

2. Course type

a. University ☐ College ☐ Department ■ Others ☐

b. Required ☐ Elective ■

3. Level/year at which this course is offered: Level 7

4. Pre-requisites for this course (if any):**CSI 322 Computer Networks**

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	80 %
2	Blended	6	10 %
3	E-learning	..	..
4	Correspondence	..	..
5	Other	6	10 %

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	Lecture	30
2	Laboratory/Studio	-
3	Tutorial	-
4	Practical	30
	Total	**60**
Other Learning Hours*		
1	Study	30
2	Assignments	-
3	Library	-
4	Projects/Research Essays/Theses	-
5	Practical	15
	Total	**45**

*The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

This course will examine the area of wireless networking and mobile computing, looking at the unique network protocol challenges and opportunities presented by wireless communications and host or router mobility. The course will give a brief overview of fundamental concepts in mobile wireless systems and mobile computing, it will then cover system and standards issues including wireless LANs, mobile IP, ad-hoc networks, sensor networks, as well as issues associated with small handheld portable devices and new applications that can exploit mobility and location information. This is followed by several topical studies around recent research publications in mobile computing and wireless networking field.

2. Course MainObjective

1. Using group discussion through the internet with course attending students.
2. Updating the materials of the course to cover the new topics of the field.
3. Increasing the ability of the students to design and implement different network configuration that are presented in the course.

3. Course Learning Outcomes

Upon successful completion, students will have the knowledge and skills to:

CLOs		AlignedPLOs
1	**Knowledge:**	
1.1	Be able to understand wireless communication and wireless networking concepts	a1
1.2	Be able to understand wireless computer networks' standards, protocols .	
1.3	Be able to understand principles, concepts and protocols of computer network design and building	a1
1.4	Be able to understand principles, concepts and protocols of mobile network design and implementations.	
2	**Skills :**	
2.1	To recognize wireless internetworking concepts, architecture and protocols .	
2.2	To compare between alternative mobile networks design approaches with wired ones	b3
2.3	To analyze wireless network protocols designs	
3	**Competence:الكفاءات**	
3.1	Discuss various wireless network architectures and protocols.	
3.2	Elaborate on differences of protocols and architectures of wireless and wired networks.	c1
3.3	Quantify the values of protocol parameters and indicate their advantages and disadvantages in a wireless environment.	

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to wireless networks	8
2	Radio propagation .	8
3	Cellular concept	8
4	Multiple radio access	8
5	Mobile communication system	4
6	Ad hoc network	4
7	Vehicular networks	4
8	Sensor networks	4
9	Wireless LAN	8
10	IEEE 802.22 white space and cognitive radio	
Total		

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	TeachingStrategies	AssessmentMethods
1.0	**Knowledge**		
1.1	Be able to understand wireless communication and wireless networking concepts	▪ **Direct Teaching:** Lectures, PowerPoint slides and discussion.	- Homework tasks - Quiz - Midterms - Final Exam
1.2	Be able to understand wireless computer networks' standards, protocols .		
1.3	Be able to understand principles, concepts and protocols of computer network design and building	▪ **Aimed Teaching** Discovery and Oral Questions.	- E-learning - Internet search - Oral Exam
1.4	Be able to understand principles, concepts and protocols of mobile network design and implementations.		
2.0	**Skills**		
2.1	To recognize wireless internetworking concepts, architecture and protocols .	**Indirect Teaching:** Brainstorming - Free Discovery – Inquiry	- Lab Exercises - Lab Exam - Oral Exam - Presentations
2.2	To compare between alternative mobile networks design approaches with wired ones		
2.3	To analyze wireless network protocols designs		
3.0	**Competence**		
3.1	Discuss various wireless network architectures and protocols.	**Course Project: (Work group)** critical thinking and ability to seek	Introduce group project and case study approaches to enable students to
3.2	Elaborate on differences of protocols and architectures of wireless and		

Code	Course Learning Outcomes	TeachingStrategies	AssessmentMethods
	wired networks.	solutions.	have an experience in problem solving situations.
3.3	Quantify the values of protocol parameters and indicate their advantages and disadvantages in a wireless environment.		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Homework 1	2	2%
2	QUIZ 1	3	5%
3	Homework 2	4	2%
4	QUIZ 2	5	5%
5	Midterm 1	6	10%
6	Homework 3	7	2%
7	QUIZ 3	8	5%
8	Homework 4	9	2%
9	QUIZ 4	10	5%
10	Midterm 2	11	10%
11	Lab Exam/ Project Evaluation	14	12%
12	Final Exam	16	40%

*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 :

- Determine meeting appointments for the weak' students to solve their problems and give them academic advices.
- One office hour daily
- Dealing a workshops.
- Motivate students

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Mohsen Guizani, "**Wireless Networks and Mobile Computing**", Wiley Communications Technology Online ISSN: 1530-8677
Essential References Materials	**Introduction to Wireless and Mobile Systems**, 3rd Edition, Dharma P. Agrawal and Qing-An Zeng, ISBN-10: 1439062056, ISBN-13: 9781439062050
Electronic Materials	• Video and presentation are available in course page • http://faculty.mu.edu.sa/ysalem

Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classroom - Laboratory
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show – Smart Board
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	CloudGoogle App. Cloud Amazon App.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
1. Questionnaires (course evaluation) filled by the students and acquired electronically by the University 2. Students-faculty management meetings	Students	Indirect Assessment
3. Midterms and Final Exam 4. Project Evaluation	Course Coordinator Staff	Direct Assessment
5. Departmental internal review of the course.	Reviewer Committee	Final Exam Evaluation
6. Course Portfolio	External Reviewer	Course Evaluation

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

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	