



Course Specifications

Institution:	Majmaah University, College of Science at Az Zulfi
Academic Department :	Department of Computer Science and Information.
Programme :	Computer Science and Information Program
Course :	Wireless & Mobile Computing (CSI-531)
Course Coordinator :	Dr. Yaser Abdalla
Programme Coordinator :	Dr. Yousry Azzam
Course Specification Approved Date :	22./ 12 / 1435 H

A. Course Identification and General Information

1 - Course title :	Wireless and Mobile Computing	Course Code:	CSI-531
2. Credit hours :	(3)		
3 - Program(s) in which the course is offered:	Computer Science and Information		
4 – Course Language :	English		
5 - Name of faculty member responsible for the course:	Dr. Yaser Abdalla		
6 - Level/year at which this course is offered :	8th level		
7 - Pre-requisites for this course (if any) :	<ul style="list-style-type: none"> Computer Networks (CSI 322) 		
8 - Co-requisites for this course (if any) :	<ul style="list-style-type: none"> N/A 		
9 - Location if not on main campus :	N/A		
10 - Mode of Instruction (mark all that apply)			
A - Traditional classroom	<input checked="" type="checkbox"/>	What percentage?	80 %
B - Blended (traditional and online)	<input checked="" type="checkbox"/>	What percentage?	10 %
D - e-learning	<input type="checkbox"/>	What percentage? %
E – Correspondence	<input type="checkbox"/>	What percentage? %
F - Other	<input checked="" type="checkbox"/>	What percentage?	10 %
Comments :		

B Objectives

<p>What is the main purpose for this course?</p> <p>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.</p> <p>Briefly describe any plans for developing and improving the course that are being implemented :</p> <ol style="list-style-type: none"> Using group discussion through the internet with course attending students. Updating the materials of the course to cover the new topics of the field. Increasing the ability of the students to design and implement different network configuration that are presented in the course.

C. Course Description

1. Topics to be covered

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

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30	-	-	30	-	60
Credit	30	-	-	15	-	45

3. Additional private study/learning hours expected for students per week.

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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Be able to understand wireless communication and wireless networking concepts.	Lectures, Lab demonstrations, Case studies, and Individual presentations.	Written Exam, Homework, assignments Lab assignments, Class Activities, and quizzes.
1.2	Be able to understand wireless computer networks' standards, protocols.		

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.3	Be able to understand principles, concepts and protocols of computer network design and building.		
1.4	Be able to understand principles, concepts and protocols of mobile network design and implementations.		
2.0	Cognitive Skills		
2.1	To recognize wireless internetworking concepts, architecture and protocols.	Small group discussion Whole group discussion Brainstorming Presentation	Written Exam, Homework, assignments Lab assignments, Class Activities, and quizzes.
2.2	To compare between alternative mobile networks design approaches with wired ones.		
2.3	To analyze wireless network protocols designs.		
3.0	Interpersonal Skills & Responsibility		
3.1	Discuss various wireless network architectures and protocols.	<ul style="list-style-type: none"> • Discussion with students • Making students aware about time management in completing their assignments. • Counsel students how to make a good presentation in wireless computing • Encourage students to help each other. 	<ul style="list-style-type: none"> • Respecting deadlines. • Showing active class participation. • Helping other students to understand tasks in the class. • Giving clear and logical arguments • Performing seriously on midterms and final exams
3.2	Elaborate on differences of protocols and architectures of wireless and wired networks.		
3.3	Quantify the values of protocol parameters and indicate their advantages and disadvantages in a wireless environment.		
4.0	Communication, Information Technology, Numerical		
4.1	Communicate with teacher, ask questions, solve problems, and use computers.	<ul style="list-style-type: none"> • Exercises • Problem solving • oral quizzes • Essay questions Encourage students to Implement a real wireless computing system.	<ul style="list-style-type: none"> • Write reports • Exercises related to specific topics
4.2	work cooperatively in a small group environment.		
4.3	Save time and space in each task.		
5.0	Psychomotor: N/A		

5. Schedule of Assessment Tasks for Students during the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	First written mid-term exam	6	15%
2	Second written mid-term exam	12	15%
3	Presentation, class activities, and group discussions	Every week	10%
4	Homework assignments	After Every chapter	10%
5	Implementation of wireless computing systems	Every two weeks	10%
6	Final written exam	16	40%
7	Total		100%

D. Student Academic Counseling and Support

Office hours: Sun: 10-12, Mon: 10-12, Wed: 10-12

Office call: Sun: 12-1 and Wed: 12-1

Email: y.salem@mu.edu.sa

E. Learning Resources

1. List Required Textbooks :

Mohsen Guizani, "Wireless Networks and Mobile Computing", Wiley Communications Technology Online ISSN: 1530-8677.

2. List Essential References Materials :

- Introduction to Wireless and Mobile Systems, 3rd Edition, Dharma P. Agrawal and Qing-An Zeng, ISBN-10: 1439062056, ISBN-13: 9781439062050.

3. List Recommended Textbooks and Reference Material :

Bruce A. Black, Philip S. DiPiazza, Introduction to Wireless Systems, ISBN-10: 0132782243 • ISBN-13: 9780132782241 ©2008 • Prentice Hall

4. List Electronic Materials :

- Video and presentation are available in course page
- <http://faculty.mu.edu.sa/ysalem/>

5. Other learning material :

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F. Facilities Required

1. Accommodation <ul style="list-style-type: none"> • Classrooms and Labs, as those that are available at college of science at AzZulfi.
2. Computing resources <ul style="list-style-type: none"> • Education console • Smart Board
3. Other resources <ul style="list-style-type: none"> • None.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching: <ul style="list-style-type: none"> • Questionnaires (course evaluation) achieved by the students and it is electronically organized by the university. • Student-faculty management meetings.
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor : <ul style="list-style-type: none"> • Discussion within the staff members teaching the course • Departmental internal review of the course.
3 Processes for Improvement of Teaching : <ul style="list-style-type: none"> • Periodical departmental revision of methods of teaching. • Monitoring of teaching activates by senior faculty members. • Training course.
4. Processes for Verifying Standards of Student Achievement <ul style="list-style-type: none"> • It is planned to:- • Check marking of a sample of student work by an independent faculty member. • Exchange periodically, and remark a sample of assignments with a faculty member in one of distinguished institutes .
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement : <ul style="list-style-type: none"> • Assessment and evaluation of the level of achieving the course outcomes through a continuous improvement process (part of a quality assurance system established by the university) • Consequently, actions are to be taken to improve the course delivery when necessary. • Review of the course objectives, outcomes and curriculum at about 2 years span

Course Specification Approved

Department Official Meeting No (.....) Date ... / / **H**

Course's Coordinator

Department Head

Name : Dr. Yaser Abdalla

Name : Dr. Yousry Azzam

Signature :

Signature :

Date : / ... / **H**

Date : / ... / **H**