1.	Course title	Mobile Wireless Networks
2.	Course number	1901469
3.	Credit hours (theory, practical)	3
	Contact hours (theory, practical)	45
4.	Prerequisites/corequisites	Data Structures (1901361)
5.	Program title	B.Sc. in Computer Science
6.	Year of study and semester (s)	4th year
7.	Final Qualification	
8.	Other department (s) involved in teaching the course	
9.	Language of Instruction	English
10.	Date of production/revision	18/6/2015
11.	Required/ Elective	Elective

12. Course Coordinator:

Office 117
Ext 22630
Office Hours : 11-12 pm everyday
saher@ju.edu.jo

13. Other instructors:

14. Course Description:

Wireless networks and their basic operation, different types of wireless technologies and systems, the basics of how they operate, different types of wireless voice, data and broadcast services, key commercial systems.
Wi-Fi wireless networks, Bluetooth wireless technology, GSM cellular networks, cellular internet access via
Wireless access protocol (WAP), GPRS and UMTS networks, wireless networks operating system; Symbian
OS, Palm OS. Mobile IP and Mobile routing, Transport layer over wireless networks, Mobile wireless network applications.

15. Course aims and outcomes:

A- Aims:

By the end of this course, students will be able to Identify the most common types and techniques of wireless networking. Moreover, Students should be able to appreciate the major challenges of wireless communication and their effects of protocol design and development.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to …

1. Understand wireless communication and wireless networking concepts.
2. Understand wireless computer networks' standards, protocols.
3. Understand principles, concepts and protocols of computer network design and building.
4. To recognize wireless internetworking concepts, architecture and protocols.
5. To compare between alternative mobile networks design approaches with wired ones.
6. To analyse wireless network protocols designs.
7. Discuss various wireless network architectures and protocols.
8. Elaborate on differences of protocols and architectures of wireless and wired networks.
9. Quantify the values of protocol parameters and indicate their advantages and disadvantages in a wireless environment.

16. Topic Outline and Schedule:

Topic	Week	ILOs	Program SOs[1]	TLA (teaching, learning and Assessment)
Networking Revision Dr.	1	1 + 2 + 3		Topic Quiz
Radio Waves	2 + 3	3+4		Topic Quiz
Routing in Wireless Networks	4 + 5	3 + 4 + 8 + 9		In-class discussion
Wireless Cellular Networks	6 + 7	4 + 5		Topic Quiz
Ad Hoc Networks	8	4		Take-home assignments
Multi-Layer Ad Hoc Networks	9	4 + 7		Take-home assignments
Wireless Sensor Networks	10	4		Topic Quiz
ZigBee Networks	11	4		
Radio Frequency Identification RFID	12	4 + 5		Topic Quiz
Satellite Systems	13	4		Take-home assignments
Network Performance Measurement	14	6 + 7 + 8 + 9		Take-home Quiz

[1] The ABET outcomes

Performance Metrics	15	6 + 7 + 8 + 9		Take-home Quiz
Backoff And Media Access Control	16	4 + 6 + 8		Take-home assignments

(Please mention instructors per topic if the course topics are being taught by more than one instructor)

17. Evaluation Methods and Course Requirements (Optional):

Chapter Exams.
Practical exams
Take-home assignments
Take-home Quiz

18. Course Policies:

A- Attendance policies: 15% Abs. Limit

B- Absences from exams and handing in assignments on time: Medical reports only

C- Grading policy: Online automated grading

D- Available university services that support achievement in the course: Dedicated Labs

19. Required equipment:

20. References:

Agrawal, Dharma, and Qing-An Zeng. Introduction to wireless and mobile systems. Cengage Learning, 2015.

Additional References:

1. Andrews, Jeffrey G., Arunabha Ghosh, and Rias Muhamed. Fundamentals of WiMAX: understanding broadband wireless networking. Pearson Education, 2007.

2. Ganchev, Ivan, Marília Curado, and Andreas Kassler, eds. Wireless Networking for Moving Objects:

Protocols, Architectures, Tools, Services and Applications. Vol. 8611. Springer, 2014.

3. Ad hoc wireless networks : architecture and protocols, C. Siva Ram Murhy and B. S. Manoj Prentice Hal, 2004

21. Additional information:

Date: ----------

Name of Course Coordinator: ----------Signature: ----------

Head of curriculum committee/Department: ---------- Signature: ----------

Head of Department: ---------- Signature: ----------

Head of curriculum committee/Faculty: ---------- Signature: ----------

Dean: ---------- -Signature: ----------

Copy to:
Head of Department
Assistant Dean for Quality Assurance
Course File