Jordan University of Science and Technology
Faculty of Computer & Information Technology
Network Engineering And Security Department

NES441 Wireless Networks
First Semester 2020-2021

Course Catalog
3 Credit Hours. Basic concepts of Wireless Networks: Wireless Personal Area Networks (WPAN), Wireless Local Area Networks (WLAN), and Wireless Wide Area Networks (WWAN). Physical layer standards, medium access control, building and securing WLAN, Wide Area Networks including cellular networks and cellular data networks.

Text Book	
Title	Mobile Communications
Author(s)	Jochen Schiller
Edition	2nd Edition
Short Name	Ref#1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref#2	Computer Networks: A Top-Down Approach Featuring the Internet	James F. Kurose and Keith W. Ross	6th Edition	
Ref#3	Data Communications & Networking	Behrouz A. Forouzan	4th Edition	

Instructor	
Name	**Prof. Fahed Awad**
Office Location	E1-L3
Office Hours	Mon : 11:30 - 13:00 Tue : 13:00 - 14:30 Wed : 11:45 - 13:15 Thu : 12:00 - 13:30

Email	fhawad@just.edu.jo

Instructor	
Name	**Dr. ABDALLAH ALMA'AITAH**
Office Location	-
Office Hours	Sun : 10:30 - 11:30 Mon : 10:30 - 12:30 Tue : 13:00 - 14:00 Wed : 11:30 - 12:30 Thu : 11:30 - 12:30
Email	ayalmaaitah@just.edu.jo

Class Schedule & Room

Section 1:
  Lecture Time: Mon, Wed : 08:30 - 10:00
  Room: منصة الكترونية
 	
Section 2:
  Lecture Time: Mon, Wed : 10:00 - 11:30
  Room: منصة الكترونية
 	
Section 3:
  Lecture Time: Sun, Tue : 14:30 - 16:00
  Room: منصة الكترونية

Teaching Assistant
Eng. Ghadeer Sawaqed(Sections 1, 2, 3)

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
1753120	NES312 Fundamentals Of Computer Networks	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2	Definition of wireless and mobile networks and their characteristics	From **Ref#1**, From **Ref#2**
Weeks 3, 4	The challenges of wireless and mobile networking and their possible solutions.	From **Ref#1**, From **Ref#2**
Weeks 5, 6, 7	Introduction to RF transmission and propagation.	From **Ref#1**, From **Ref#3**
Weeks 8, 9, 10, 11, 12	The architecture and operation of WLAN technologies	From **Ref#1**
Weeks 13, 14, 15	The architecture and operation of WWAN technologies.	From **Ref#1**

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Use the basic computer networking terminology to describe the different components, services, and applications provided for the wireless networks. [1SO1]	11%	Midterm Exam, Final Exam
Apply the principles of radio wave (RF) transmission and signal propagation to design a wireless network. [1SO2, 1SO5]	10%	Midterm Exam, Quizzes and Assignments, Final Exam
Analyze the RF power loss and gain and estimate the transmit power budget. [1SO1, 1SO2]	11%	Midterm Exam, Quizzes and Assignments, Final Exam
Compare the main characteristics of RF signal and identify the proper types of antennas to be used. [1SO1, 1SO2]	7%	Midterm Exam, Quizzes and Assignments, Final Exam
Identify the special challenges that face the wireless and mobile networking technologies such as mobility, signal fading, and security. [1SO1]	11%	Midterm Exam, Quizzes and Assignments, Final Exam
Assess the existing solutions used to mitigate the impact of the wireless networking challenges on the performance. [1SO1]	8%	Midterm Exam, Quizzes and Assignments, Final Exam
Explain the roles of the major components of the wireless networks such as the access points, base stations, bridges, and gateways. [1SO1]	7%	Midterm Exam, Quizzes and Assignments
Describe the operation of the major wireless local area networking (WLAN) protocols and standards such as the IEEE 802.11a, b, and g [1SO1]	17%	Midterm Exam, Quizzes and Assignments, Final Exam
Describe the operation of the major wireless wide area networking (WWAN) protocols and standards such as the GSM and IS-136 cellular technologies [1SO1]	18%	Final Exam

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
81	14			5		

Evaluation	
Assessment Tool	**Weight**
Midterm Exam	30%
Quizzes and Assignments	20%
Final Exam	50%

Policy

Makeups	Makeup exam should not be given unless there is a valid excuse.
Drop Date	Last day to drop the course is before the 12th week of the current semester.
Cheating	Standard JUST policy will be applied
Attendance	- Excellent attendance is expected. -According to the JUST policy, a student will receive the grade of ZERO (35%) ?failed for absence? if he misses more than 20% of the classes. -Attendance will be taken by calling the names or passing a sign-up sheet. -If you miss a class, it is your responsibility to find out about any announcements or assignments you may have missed.
Workload	Average work-load student should expect to spend is 8 hours/week.
Graded Exams	Graded exam papers will be returned within two weeks.
Participation	? Participation in the class will positively affect your performance. ? Disruption and side talks will possibly result in dismissal from class. ? No eating or chewing gums are allowed in class.

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