



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

NES442 Wireless Networks Laboratory

First Semester 2020-2021

**Course Catalog**

1 Credit Hours. A set of experiments on configuring, implementing, integrating, and testing a variety of wireless technologies. Methods and tools for network management of wireless networks such as WLAN Network Management Systems, Routers, and Switches.

**Text Book**

<b>Title</b>	A set of experiments on configuring, implementing, integrating, and testing a variety of wireless technologies. Methods and tools for network management of wireless networks such as WLAN Network Management Systems, Routers, and Switches.
<b>Author(s)</b>	James F. Kurose and Keith W. Ross
<b>Edition</b>	7th Edition
<b>Short Name</b>	Ref #1
<b>Other Information</b>	

**Instructor**

<b>Name</b>	<b>Prof. Fahed Awad</b>
<b>Office Location</b>	E1-L3
<b>Office Hours</b>	Mon : 11:30 - 13:00 Tue : 13:00 - 14:30 Wed : 11:45 - 13:15 Thu : 12:00 - 13:30
<b>Email</b>	fhawad@just.edu.jo

**Instructor**

<b>Name</b>	<b>Prof. Mohammad Al-Rousan</b>
<b>Office Location</b>	M2L2

Office Hours	Sun : 10:00 - 11:30 Mon : 11:00 - 12:30 Tue : 10:00 - 11:30 Thu : 11:00 - 12:30
Email	alrousan@just.edu.jo

Class Schedule & Room	
Section 1:	Lecture Time: Thu : 08:30 - 11:30 Room: NES03-N1L0
Section 2:	Lecture Time: Wed : 13:00 - 16:00 Room: NES03-N1L0

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

Prerequisites		
Line Number	Course Name	Prerequisite Type
1754130	NES413 Computer Networks Laboratory	Prerequisite / Study
1754410	NES441 Wireless Networks	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 2	Access Point Configuration	
Week 3	AirCheck Wi-Fi Tester	
Week 4	Wireless sensor network configuration and monitoring under Windows OS	
Week 5	Wireless sensor network configuration and monitoring under Windows OS	
Week 6	AirMagnet Spectrum XT analyzer tool	
Week 7	Midterm Exam (experimental)	
Week 8	Measuring RF signal propagation characteristics	
Week 9	AirMagnet RF Planner tool	
Week 10	Turning your PC into a Wi-Fi hotspot	
Week 11	Lab review & Free Lab Session	
	Final Exam (experimental)	

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Configure a wireless LAN access point and setup a wireless LAN network. [1SO1, 1SO2, 1SO6]	13%	mid-term exam, quizzes, labs
Configure wireless ad hoc stations and setup a wireless ad hoc network. [1SO1, 1SO2, 1SO6]	6%	quizzes, labs
Use monitoring and debugging wireless equipment such as the AirCheck tester. [1SO1, 1SO2, 1SO6]	12%	mid-term exam, quizzes, labs
Configure wireless sensor nodes and setup wireless sensor networks under Windows and Unix OSs. [1SO1, 1SO2, 1SO6]	16%	final-exam, quizzes, labs
Use RF signal analysis tools, such as Spectrum XT Analyzer, to identify noise and interference sources. [1SO1, 1SO2, 1SO6]	20%	final-exam, quizzes, labs
Design wireless networks for indoor environments using planning tools such as AirMagnet Planner. [1SO1, 1SO2, 1SO6]	12%	mid-term exam, quizzes, labs
Perform experimental radio frequency measurements in order to deduce the environmental characteristics of the wireless signal propagation. [1SO1, 1SO2, 1SO6]	17%	final-exam, quizzes, labs
Create a Wi-Fi access point using a PC and wireless adapter. [1SO1, 1SO2, 1SO6]	4%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
33.33	33.33				33.33	

Evaluation	
Assessment Tool	Weight
mid-term exam	25%
final-exam	40%
quizzes	15%
labs	20%

Policy	
Exams	<ul style="list-style-type: none"> <li>- May include: Definitions, True/False, Multiple-Choice, Analysis and Descriptive formats.</li> <li>- Use only your own tools: calculator, pens and ruler</li> <li>- Instructions on the first page of the exam are quite important.</li> <li>- Not abiding by the rules is a reason for dismissal from the exam.</li> </ul>

Attendance	<ul style="list-style-type: none"> <li>- Excellent attendance is expected.</li> <li>- According to the JUST policy, a student will receive the grade of ZERO (35%) if he misses more than 20% of the classes.</li> <li>- Attendance will be taken by calling the names or passing a sign-up sheet.</li> <li>- If you miss a class, it is your responsibility to find out about any announcements or assignments you may have missed.</li> </ul>
Workload	? Average work-load student should expect to spend is 3 hours/week
Graded Exams	- Graded exam papers will be returned within a week
Participation	<ul style="list-style-type: none"> <li>- Participation in the class will positively affect your performance.</li> <li>- Disruption and side talks will possibly result in dismissal from class.</li> <li>- No eating or chewing gums are allowed in class.</li> </ul>
Cheating	Standard JUST policy will be applied.

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