



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

NES470 Network Management
Second Semester 2020-2021

Course Catalog
3 Credit Hours. This course introduces the network management protocols that specify the monitoring, configuring, and controlling of network devices. Topics include introduction to network management and the functions of network management, data modeling languages for the definition of data sent over network management protocols (e.g., SMI and YANG), the organization and operation of network management protocols (e.g., SNMP, RESTCONF, and NETCONF), and encoding of the actual data inside the messages of the network management protocols.

Text Book	
<b>Title</b>	Network Management: Principles and Practice
<b>Author(s)</b>	Subramanian, M.
<b>Edition</b>	2nd Edition
<b>Short Name</b>	Ref. #1
<b>Other Information</b>	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Ref. #2	Network Programmability with YANG: The Structure of Network Automation with YANG, NETCONF, RESTCONF, and gNMI	Benoit Claise, Joe Clarke, Jan Lindblad	1st Edition	

Instructor	
Name	Dr. Ahmad Al-Hammouri
Office Location	N2 L0
Office Hours	
Email	hammouri@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 11:30 - 13:00 Room: منصة الكترونية
Section 2: Lecture Time: Sun, Tue : 13:00 - 14:30 Room: منصة الكترونية

Teaching Assistant
Mais Tawalbeh(Sections 1, 2)

Prerequisites		
Line Number	Course Name	Prerequisite Type
1754150	NES415 Networking Protocols	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Introduction	From <b>Ref. #1</b> , From <b>Ref. #2</b>
Weeks 2, 3, 4	SNMP: The Organization Model and The Information Model	From <b>Ref. #1</b>
Weeks 5, 6, 7, 8, 9	SNMPv2: The Communication Model, Messages and Hands-on	From <b>Ref. #1</b>
Weeks 10, 11	The YANG Data Modeling Language	From <b>Ref. #2</b>
Week 12	Miscellaneous Topics In Python	From <b>Ref. #2</b>
Weeks 13, 14	The RESTCONF Protocol	From <b>Ref. #2</b>

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Describe what network management is and what its various constituent functions are [1SO4]	5%	Midterm Exam
Use network management's data modeling languages, e.g., SMI and YANG, to define data models, e.g., MIB documents and YANG models [1SO1]	25%	Midterm Exam, Assignments, Final Exam
Understand, explore and use standardized data models, e.g., standard MIB documents and standard YANG models, in network management [1SO4]	10%	Midterm Exam, Assignments, Final Exam
Describe the organization and operation of network management protocols, e.g., SNMP, RESTCONF, and NETCONF [1SO4]	15%	Midterm Exam, Final Exam

Use the appropriate messages of the network management protocols to retrieve data from (monitor) and modify data on (configure or control) network and end-host devices and systems [1SO6]	30%	Midterm Exam, Assignments, Final Exam
Describe and perform encoding and decoding operations of the messages of the network management protocols [1SO1, 1SO6]	15%	Midterm Exam, Final Exam

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
32.50			30		37.50	

Evaluation	
Assessment Tool	Weight
Midterm Exam	25%
Assignments	25%
Final Exam	50%

Policy	
Exams	May include: Definitions, True/False, Multiple-Choice, Analysis and Descriptive formats. only your own tools: calculator, pens and ruler Instructions on the first page of the exam are quite important. Not abiding by the rules is a reason for dismissal from the exam.
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.
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
Workload	Average work-load student should expect to spend is 6 hours/week.

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