King Fahd University of Petroleum and Minerals
College of Computer Sciences and Engineering
Department of Computer Engineering

COE 547/CSE 552 Network Management (3-0-3)

Instructor:	Dr. Marwan Abu-Amara
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Term:	141 (1st term 2014–2015)
Day & Time:	MW 05:00 PM – 06:15 PM
Prerequisite:	(COE 540 and (ICS 431 or Equivalent)) or Consent of Instructor.
Textbook:	*Network Management: Principles and Practices*, M. Subramanian, Pearson Education, 2nd Edition, 2011.
Office Hours:	MW 11:15 AM – 12:00 PM or by appointment
Web Site:	http://faculty.kfupm.edu.sa/COE/marwan

Catalog Description:
Network Management Standards and Models. Network Management Protocols. Network Management Applications. Network Management Tools and Systems. Abstract Syntax Notation One (ASN.1). Structure of Management Information (SMI). Management Information Base (MIB). Simple Network Management Protocol (SNMP). SNMPv2 and SNMPv3. Remote Monitoring (RMON). RMON 1 and 2. Web-Based Management. Recent Network Management Advances.

Tentative Grading Policy:
- Homeworks & Quizzes **20%**
- Project **30%**
- Midterm ....**20%** (Week 09 - Wednesday November 12, 2014, 05:00 PM)
- Final Exam.................................**30%** (*Comprehensive* – Wednesday December 31, 2014, 7:00 PM)

IMPORTANT NOTES:
- All KFUPM regulations and standards will be enforced. Attendance will be checked each class. The KFUPM rule pertaining to a DN grade will be strictly enforced (i.e. **> 6 absences** will result in a DN grade).
- If you are late to the class for more than 10 minutes (i.e. arrive after 05:10 PM), you will **NOT be allowed to enter** the classroom and you will be considered absent for that class.
- Only university approved/certified excuses will be accepted.
- Use of cell phones, smart phones, and tablets during class period and during exams is absolutely **prohibited**.
- Homeworks are to be submitted **in class** on the due date during the class period. Late homeworks will **NOT be accepted**.
- You have up to the next class period to object to the grade of a homework, a quiz, or a major exam from the end of the class time in which the graded papers have been distributed back. If for some reason you cannot contact me within this period, send me an email requesting an appointment. The email should be sent before the next class period.
- **NO make up exams**. ALL homeworks and quizzes will be counted towards your grade.
- Final exam is **comprehensive**.

Tentative schedule

Week	Topic
1	***Data Communications and Network Management Overview (Ch. 1):*** ➤ Analogy of Telephone Network Management. ➤ Communications Protocols and Standards. ➤ Case Histories on Networking and Management. ➤ Network Management Functions. ➤ Network and System Management.
2-3	***Basic Foundations: Standards, Models, and Language (Ch. 3 & 11):*** ➤ Network Management Standards. ➤ Network Management Models. ➤ Organization Model. ➤ Information Model. ➤ Communication Model. ➤ Functional Model. ➤ Network Management Applications. ➤ Abstract Syntax Notation One: ASN.1. ➤ Encoding Structure.
4-6	***SNMPv1 Network Management (Ch. 4-5):*** ➤ History of SNMP Management. ➤ Internet Organizations and Standards. ➤ SNMP Model. ➤ Organization and Information Models. ➤ Communication and Functional Models.
	Eid Vacation (September 28th, 2014 – October 11th, 2014)
7-8	***SNMP Management: SNMPv2 (Ch. 6):*** ➤ Major Changes in SNMPv2. ➤ SNMPv2 System Architecture. ➤ SNMPv2 Structure of Management Information. ➤ SNMPv2 Management Information Base. ➤ SNMPv2 Protocol.
9-10	***SNMP Management: SNMPv3 (Ch. 7):*** ➤ SNMPv3 Key Features. ➤ SNMPv3 Documentation Architecture. ➤ SNMPv3 Applications. ➤ SNMPv3 Management Information Base. ➤ SNMPv3 User-based Security Model. ➤ Access Control.
11-12	***SNMP Management: RMON (Ch. 8):*** ➤ Remote Monitoring. ➤ RMON SMI and MIB. ➤ RMON1. ➤ RMON2. ➤ A Case Study on Internet Traffic.
13-14	***Current Network Management Topics:*** ➤ Broadband Network Management. ➤ Web-Based Network Management. ➤ XML-Based Network Management. ➤ Distributed Network Management. ➤ Reliable & Fault Tolerant Network Management. ➤ Other topics.
15	***Project Presentations:*** More details will be posted on the course web site about the project.

* Week 1 begins on ***August 31, 2014***