COURSE OUTLINE

CITA 440 - NETWORK MANAGEMENT

Revised By: MINHUA WANG
A. **TITLE:** Network Management

B. **COURSE NUMBER:** CITA 440

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE:** No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
   3 lecture hours per week

H. **CATALOGUE DESCRIPTION:** An advanced study of network management concepts, architectures, protocols, models, tools, systems, and applications. The course concentrates on the implementation of the Simple Network Management Protocol (SNMP). Students are also introduced to the use of the Desktop Management Interface (DMI) standard and Web-based Management.

I. **PRE-REQUISITES/CO-REQUISITES:**
   a. Pre-requisite(s): CITA 220 Data Communications and Network Technology
   b. Co-requisite(s): none

J. **GOALS (STUDENT LEARNING OUTCOMES):**
   By the end of this course, the student will be able to:

<table>
<thead>
<tr>
<th>Course Objective</th>
<th>Institutional SLO</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Classify the broad range of network management concepts into manageable descriptions</td>
<td>2. Crit. Thinking 3. Prof. Competence</td>
</tr>
<tr>
<td>c. Exhibit an NMS that focuses on the fundamentals of network management</td>
<td>2. Crit. Thinking 3. Prof. Competence</td>
</tr>
<tr>
<td>d. Specify how to access, compile and use MIBs</td>
<td>2. Crit. Thinking 3. Prof. Competence</td>
</tr>
<tr>
<td>e. Interpret SNMP message formats</td>
<td>2. Crit. Thinking 3. Prof. Competence</td>
</tr>
</tbody>
</table>


L. **REFERENCES:** N/A
M. **EQUIPMENT:** computer classroom with virtual machine software installed

N. **GRADING METHOD:** A-F

O. **MEASUREMENT CRITERIA/METHODS:**
   - Exams
   - Quizzes
   - Participation

P. **DETAILED TOPICAL OUTLINE:**

I. Basics of Network Management
   A. Networking Components
   B. Overview of Network Management
   C. Network Management Strategies
   D. Configuration: Client/Server Components
   E. Configuration: Infrastructure Components

II. SNMP Management
   A. MIB, ASN.1, and BER
   B. SNMPv1
   C. SNMPv2
   D. SNMPv3
   E. RMON1
   F. RMON2

III. Network Management Tools, Systems, and Applications
   A. Network Management Tools and Systems
   B. Network Management Applications
   C. Desktop Management
   D. Web-Based Management

Q. **LABORATORY OUTLINE:** N/A