COURSE OUTLINE

CITA 441 – NETWORK MANAGEMENT LAB

Revised by: Minhua Wang
A. **TITLE:** Network Management Lab

B. **COURSE NUMBER:** CITA 441

C. **CREDIT HOURS:** 1

D. **WRITING INTENSIVE COURSE:** No

E. **COURSE LENGTH:** 15 weeks

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

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**

2 lab hours per week

H. **CATALOG DESCRIPTION:** This laboratory course is to accompany the lectures of CITA 440 Network Management course. Students obtain hands-on experience on various network management tools, protocols, applications, and systems throughout this course.

I. **PRE-REQUISITES/CO-REQUISITES:**

   a. Pre-requisite(s): CITA 221 Data Communications and Network Technology Lab
   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>
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<tbody>
<tr>
<td>a. Illustrate centralized log management</td>
<td>2. Crit. Thinking</td>
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<td></td>
<td>3. Prof. Competence</td>
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<td>b. Illustrate graphical network management</td>
<td>2. Crit. Thinking</td>
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<td>3. Prof. Competence</td>
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<td>c. Manipulate SNMP configurations</td>
<td>2. Crit. Thinking</td>
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<td></td>
<td>3. Prof. Competence</td>
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<tr>
<td>d. Interpret RIP, OSPF, ACL, and IPSEC VPN</td>
<td>2. Crit. Thinking</td>
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<td></td>
<td>3. Prof. Competence</td>
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<tr>
<td>e. Recognize basic wireless network management features</td>
<td>2. Crit. Thinking</td>
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<tr>
<td></td>
<td>3. Prof. Competence</td>
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K. **TEXTS:** N/A

L. **REFERENCES:** N/A

M. **EQUIPMENT:** NN128 network lab

N. **GRADING METHOD:** A-F
O. **MEASUREMENT CRITERIA/METHODS:**
   - Lab projects
   - Participation

P. **DETAILED COURSE OUTLINE:** N/A

Q. **LABORATORY OUTLINE:**

I. Centralized log management using syslog

II. Graphical network management utilizing SNMP and MRTG

III. A lab review of static routes and RIP

IV. Lab introduction to Open Shortest Path First (OSPF)

V. Configuring Standard Access Control Lists

VI. Configuring Extended Access Control Lists

VII. Remote network access utilizing an IPSEC VPN client

VIII. Site to site secure communications utilizing IPSEC VPN tunnels

IX. Lab introduction to standalone wireless access points

X. Setting up point to point wireless bridges