

**STATE UNIVERSITY OF NEW YORK %
COLLEGE OF TECHNOLOGY %
CANTON, NEW YORK %**



MASTER SYLLABUS

CITA 221 - DATA COMMUNICATIONS AND NETWORK TECHNOLOGY LAB

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**CANINO SCHOOL OF ENGINEERING TECHNOLOGY %
DECISION SYSTEMS %
FALL 2018 %**

- A. **TITLE:** Data Communications and Network Technology Lab
- B. **COURSE NUMBER:** CITA 221
- C. **CREDIT HOURS:** (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

Credit Hours: 1 !
 # Lecture Hours: per week %
 # Lab Hours: 2 per week %
 Other: per week

Course Length: 15 Weeks

- D. **WRITING INTENSIVE COURSE:** No
- E. **GER CATEGORY:** None
- F. **SEMESTER(S) OFFERED:** Fall/Spring
- G. **COURSE DESCRIPTION:** This laboratory course is to accompany the lectures of CITA 220 Data Communications and Network Technology course. Students obtain hands-on experience on data communications and network technology throughout this course.

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

- a. Pre-requisite(s): CITA170 Computer Concepts and Operating Systems, CITA 171 Operating System Use and Administration, and MATH 106 Intermediate Algebra
 b. Co-requisite(s): CITA 220 Data Communications and Network Technology
 c. Pre- or co-requisite(s): none

I. **STUDENT LEARNING OUTCOMES:**

By the end of this course, the student will be able to:

<u>Course Student Learning Outcome [SLO]</u>	<u>PSLO</u>	<u>ISLO</u>
a. Differentiate between straight-through cable and crossover cable configurations	3. Demonstrate a solid understanding of the methodologies and foundations of IT	5
b. Use terminal programs to configure switches and routers	3. Demonstrate a solid understanding of the methodologies and foundations of IT	5
c. Illustrate the main components of network operating systems with Linux and Windows servers	3. Demonstrate a solid understanding of the methodologies and foundations of IT	5
d. Manipulate ADS / WINS / DNS / DHCP / TCP/IP configurations on Windows servers	3. Demonstrate a solid understanding of the methodologies and foundations of IT	5
e. Recognize basic network security features on Windows servers	3. Demonstrate a solid understanding of the methodologies and foundations of IT	5

J. **APPLIED LEARNING COMPONENT:** Yes X No _____

- Classroom/Lab

K. **TEXTS:** N/A

L. **REFERENCES:** N/A

M. **EQUIPMENT:** Computer networking lab

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

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**

- Lab projects
- Participation

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

Q. **LABORATORY OUTLINE:**

I. Field trip to observe the SUNY Canton IT network (server room, wiring closet, campus network infrastructure)

II. Structured Cabling: Students build and test cables to set up computer connections in the lab

III. Introduction to Switching: Comparison of repeaters and switches. Students use their cables to set up a LAN

IV. Configuring Cisco Switches

V. Configuring Cisco Routers

VI. Network Operating Systems: Overview of Linux and Windows servers (using VMware)

VII. Configuring Network Protocols and Services: ADS

VIII. Configuring Network Protocols and Services: WINS

IX. Configuring Network Protocols and Services: DNS

X. Configuring Network Protocols and Services: DHCP

XI. Configuring Network Protocols and Services: TCP/IP

XII. Configuring User and Group Accounts

XIII. Configuring Network Security

XIV. Network Monitoring and Analyzing Tools !