

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



MASTER SYLLABUS

CITA 171 – Operating Systems Use and Administration

CIP Code: 11.0103

Created by: Minhua Wang
Updated by: Tatsuhito Koya

School: Canino School of Engineering Technology
Department: Decision Systems
Implementation Semester/Year: Fall 2025

- A. TITLE: Operating Systems Use and Administration
- B. COURSE NUMBER: CITA 171
- C. CREDIT HOURS (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity):

# Credit Hours per Week	3
# Lecture Hours per Week	3
# Lab Hours per Week	
Other per Week	

- D. WRITING INTENSIVE COURSE:

Yes	
No	x

- E. GER CATEGORY: N/A

Does course satisfy a GER category(ies)? If so, please select all that apply.

[1-2] Communication	
[3] Diversity: Equity, Inclusion & Social Justice	
[4] Mathematics & Quantitative Reasoning	
[5] Natural Science & Scientific Reasoning	
[6] Humanities	
[7] Social Sciences	
[8] Arts	
[9] US History & Civic Engagement	
[10] World History & Global Awareness	
[11] World Languages	

- F. SEMESTER(S) OFFERED:

Fall	
Spring	
Fall and Spring	x

- G. COURSE DESCRIPTION:

This project-intensive course focuses on current operating systems, with a primary emphasis on the GNU/Linux operating system. Through hands-on projects, students will gain an overview of operating systems and delve into their major aspects. This course serves as an ideal starting point for students aiming to achieve industrial certification in modern operating systems.

H. PRE-REQUISITES: N/A
 CO-REQUISITES: N/A

I. STUDENT LEARNING OUTCOMES:

Course Student Learning Outcome [SLO]	Program Student Learning Outcome [PSLO]	GER	ISLO & Subsets
a. Analyze the architecture of an operating system	Documents and Information		5
b. Evaluate the use of virtual machine technology.	Documents and Information		5
c. Describe the function of an operating system and its interaction with various hardware components.	Documents and Information		5
d. Compare the various types of file systems and their directory structures.	Documents and Information		5
e. Execute file management commands from the shell command line.	Tools		5
f. Demonstrate how to monitor system performance.	Tools		5
f. Develop script files to automate tasks.	Tools		5

KEY	<u>Institutional Student Learning Outcomes</u> [ISLO 1 – 5]
ISLO #	ISLO & Subsets
1	Communication Skills Oral [O], Written [W]
2	Critical Thinking <i>Critical Analysis [CA], Inquiry & Analysis [IA], Problem Solving [PS]</i>
3	Foundational Skills <i>Information Management [IM], Quantitative Lit, /Reasoning [QTR]</i>
4	Social Responsibility <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i>
5	Industry, Professional, Discipline Specific Knowledge and Skills

J. APPLIED LEARNING COMPONENT:

Yes	X
No	

If yes, select [X] one or more of the following categories:

Practicum (Non-Clinical Placement)	X	Community Service	
Internship		Civic Engagement	
Clinical Practicum		Creative Works/Senior Project	
Practicum		Research	
Service Learning		Entrepreneurship [program, class, project]	

K. TEXTS:

Smith, Roderick W. Linux Essentials. Indianapolis, Ind: Wiley, 2012.

L. REFERENCES:

M. EQUIPMENT:

Computer classroom with virtual machine software installed

N. GRADING METHOD:

A-F

O. SUGGESTED MEASUREMENT CRITERIA/METHODS:

Discussion Boards, Quizzes, Labs, Exams

P. DETAILED COURSE OUTLINE:

I. Operating Systems and Computer Virtualization

- A. Operating Systems
- B. Hypervisors and Virtual Machines

II. Linux and Linux Distributions

- A. Unix
- B. Linux
- C. Linux Distributions

III. Command-Line Interface

- A. Terminal
- B. Command-Line Interface Operations
- C. Basic Commands

IV. File Systems

- A. Disks
- B. Partitions
- C. Linux and Windows File Systems
- D. File System Command-Line Commands

- V. File Ownership and Permissions
 - A. File and Directory Owners
 - B. File and Directory Permissions
 - C. Ownership and Permission Management Command-Line Commands

- VI. Process Control
 - A. Processes
 - B. Process Ownership and Permissions
 - C. Process Management Command-Line Commands

- VII. Shell Scripting
 - D. Computer Programs
 - E. Compiled Programs, Scripts, and Macros
 - F. Bash Scripts
 - G. Script Automation

Q. LABORATORY OUTLINE:
N/A