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

MASTER SYLLABUS

CITA152 – COMPUTER LOGIC

Created by: Judith Beider
Updated by: Stacia Smith/Thomas Burl

CANINO SCHOOL OF ENGINEERING TECHNOLOGY
DECISION SYSTEMS
FALL 2024

A. **TITLE**: Computer Logic

B. **COURSE NUMBER: 152**

C. **CREDIT HOURS (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity):**

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

Course Length (# of Weeks): 15

D. **WRITING INTENSIVE COURSE**: No

E. **GER CATEGORY:**

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

G. **COURSE DESCRIPTION:**

This course provides a foundation necessary to create structured program logic. It introduces students to programming concepts and program design through the study of a programming language with a reduced set of instructions. Topics include number systems, relational and logical operators, understanding structures, arrays, making decisions and problem solving skills used in computing.

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

a. Pre-requisite(s): None
b. Co-requisite(s): None
c. Pre- or co-requisite(s): None

I. **STUDENT LEARNING OUTCOMES:**

Course Student Learning Outcome [SLO]	***PSLO***	***GER***	***ISLO***
a. Define number systems and apply conversion rules between different number systems	1		1 [O, W], 5
b. Describe arrays and their use in programming languages	1		1 [O, W], 5
c. Examine general problem solving methods. Apply problem solving techniques to designing simple programs	5		2 [PS], 5
d. Experiment with a reduced instruction set programming language to write simple programs.	4, 5		2 [IA], 5
e. Recognize the relationship between program variables and their memory representation	5		5

f. Differentiate between arithmetic, relational and logical operators. Apply them in control expressions for loop and decision statements	5		5

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

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

If Yes, select one or more of the following categories:

Classroom/Lab___
Internship___
Clinical Practicum___
Practicum___
Service Learning___
Community Service___
Civic Engagement___
Creative Works/Senior Project___
Research___
Entrepreneurship___
(program, class, project)

K. **TEXTS:** No

L. **REFERENCES:**

Farrell, J., *Programming Logic & Design 9th Edition*, 2018, Cengage Learning

M. **EQUIPMENT:** Technology Enhanced Classroom

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

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**
- Exams
- Quizzes
- Assignments

P. DETAILED COURSE OUTLINE:

I. Number Systems
- A. How Number Systems Work
- B. The Binary Number System
- C. The Decimal Number System
- D. The Hexadecimal Number System
- E. Number System Conversions
  - a. From Decimal
  - b. To Decimal
  - c. Binary and Hexadecimal

II. The Program Development Cycle

III. Structured programming - Introduction
- A. Program design concepts and tools
- B. Variables and constants
- C. Language structures
  - a. And/Or statements
  - b. Assignment statements
  - c. Loops
  - d. Decisions
  - e. Arrays
- D. Modules and Procedures
- E. Simple programs
- F. Concepts of integrated development environment (IDE)

Q. LABORATORY OUTLINE: