**MOHAWK VALLEY COMMUNITY COLLEGE**

**UTICA AND ROME, NEW YORK**

**COURSE OUTLINE**

**CI 272 Graphical User Interface Programming** **C-2, P-2, Cr-3**

**Course Description:**

This course introduces object-oriented programming techniques and covers the fundamentals of event driven programming by using an integrated development environment (IDE). Emphasis is placed on planning, programming, and debugging Graphic User Interface (GUI) applications using modern programming techniques and practicing good layout design. Prerequisite: CI130 Programming in C++.

**Student Learning Outcomes:**

At the conclusion of the course, the students will be able to:

1. Understand the basic constructs of the GUI programming environment using an industry standard integrated development environment (IDE).

2. Apply the object-oriented approach to problem solving and developing programs in a GUI environment.

3. Analyze problems and evaluate available tools to determine the best GUI components to use in program development.

4. Create fully functional GUI applications using polymorphic methods, utilizing the tools introduced in the course.

5. Produce new or original GUI applications as part of project-based final assessments.

**Major Topics:**

Introduction to the Object-Oriented Approach to Thinking About Problem Solving, and an Introduction to the GUI Programming environment.

Encapsulation, Abstraction, Defining Classes

Instances, Class Instances, Behaviors

Inheritance, Binding

Object-Oriented Tools: Addition, Refinement, and Replacement

Multiple Inheritance, Memory Allocation, Notion of Equality

Polymorphism and Polymorphic Techniques.

Information Hiding

Printer object, Screen Object, Object Variables

File processing: Random, Sequential, and Binary

Database Accessing, data control, data manager, and data bound controls

OLE fundamentals. Using the OLE control, accessing OLE objects

Creating Active-X servers, Active-X controls. Developing Active-X documents. Adding Third Party controls to an application

**Revised 3/24**