MOHAWK VALLEY COMMUNITY COLLEGE

UTICA-ROME, NY

COURSE OUTLINE

CNC CAPSTONE MT 297

# COURSE OUTLINE

1. CATALOG DESCRIPTION

**MT 297 CNC Capstone C-2, P-6, Cr-4**

In this capstone course students utilize and demonstrate the skills learned in the CNC/Machinist program. Students design, program, manufacture, and inspect the part they design, CAM and CAD software are utilized for design and programming purposes. The final project is manufactured and inspected to design specifications.

Corequisite: MT 296 Multi-Axis CNC Machining

### MATERIAL

Scientific Calculator

Industrial grade safety glasses or goggles (for use in lab)

1. STUDENT LEARNING OUTCOMES:

##### The student will demonstrate his/her overall knowledge of machining, manufacturing, metal cutting theory, engineering drawings, and machine operation to complete a capstone project.

1. The student will develop his/her own project to manufacture, while using CNC Lathes and CNC Milling Machines to produce the finished product.
2. The student will demonstrate the ability to use CAD, Solid Modeling software, etc. to produce engineering drawings for their project, while applying acceptable machining tolerances.
3. The student will demonstrate the ability to use CAM, or hand programming techniques, to program the CNC Machines.
4. The student will demonstrate complex setups on machines.
5. The student will demonstrate the safety procedures required to use both machine tools and hand tools.
6. The student will demonstrate the ability to write programs for the CNC milling machines and lathes.

##### 8. The student will demonstrate his/her overall knowledge and ability in CAM, CNC programming, set-up, and operation of CNC Lathes and Milling Machines.

##### 9. The student will demonstrate his/her knowledge and ability in the use of measuring and inspection tools to insure that the finished product was manufactured to the specifications of the engineering drawing.

10. The student will demonstrate the ability to completed a capstone project

# IV MAJOR TOPICS:

1. Shop safety
2. Measurement & Inspection
3. Metal cutting theory
4. CNC Milling
5. CNC Lathe
6. CAD
7. CAM
8. Capstone Project

# **COURSE NAME:\_\_\_\_\_MT 297 CNC Capstone II**

## 

## **DATE DATE FACULTY NAME CHANGE INPUT MEASUREMENT ASSESSMENT ACTION**

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| **1/11/11** | **B.Alguire** | **Eliminated header, disability statement, and grading policies per Middle States** | **MVCC faculty** | **Standardize outlines college wide** |  | **None** |
| **1/27/14** | **B.Alguire** | **Update Course Outline** | **MVCC faculty** | **Standardize outlines**  **College wide** |  | **None** |
| **10/9/19** | **B. Alguire** | **Changed credit hours from 5 to 4** | **MVCC faculty** | **Update outline** |  | **None** |
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