MOHAWK VALLEY COMMUNITY COLLEGE

UTICA-ROME, NY

COURSE OUTLINE

INTRODUCTION TO MACHINING MT 291

1. CATALOG DESCRIPTION

**MT 291 Introduction to Machining C-2, P-6, Cr-4**

This course introduces fundamental concepts of machining. Topics include safety, blueprint reading, precision measurement tools, machining a work piece to drawing specification, use of manual machines (milling, lathe, etc.), proper tooling and work-holding methods, and how to determine sequential machining operations of complex parts.

### MATERIAL

Scientific Calculator

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

1. STUDENT LEARNING OUTCOMES:
2. The student will demonstrate the ability to complete a manual machining Project and inspect to blueprint specifications.
3. The student will demonstrate the understanding of different Line Styles and Types associated with engineering drawings.
4. The student will demonstrate the understanding of different types of third angle projection views, such as front, top, right side, bottom, and etc.
5. The student will demonstrate the understanding of the main parts of an engineering drawing including title block, revisions block, bill of materials, notes list, and etc.
6. The student will demonstrate how to use dial calipers, micrometers, height gages, and indicators for inspection purposes.
7. The student will demonstrate the understanding of calculating cutting speeds and feed rates.
8. The student will demonstrate the difference of working with ferrous and non-ferrous materials.
9. The student will demonstrate the selection of tooling for different types of machining operations.

1. The student will demonstrate work piece setups on manual machines (lathes, mills, surface grinder, bandsaws, drill press, arbor press, and etc.).
2. The student will demonstrate the safety procedures required to use both machine tools and hand tools.

##### The student will demonstrate his/her overall knowledge and ability in Manual Machining, set-up, and operation.

1. The student will demonstrate the understanding of conventional and climb milling operations.

# IV MAJOR COURSE TOPICS:

1. Shop safety
2. Careers in machining
3. Blueprint reading
4. Shop math
5. Measurement & Inspection
6. Bench work
7. Metal cutting theory
8. Turning
9. Milling
10. Grinding
11. Drill Press
12. Shaper
13. Band saw
14. Broaching
15. C-Clamp Project

# **COURSE NAME:\_\_\_\_\_MT 291 Introduction to Machining \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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## **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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