



**HOUSATONIC**  
**COMMUNITY COLLEGE**

*Advanced Manufacturing  
Technology Center*

**Course Title: Introduction to Machine Technology**

**Course Number - MFG 150**

**Credits: 4**

Course description: Introduction to Machine Technology introduces the student to the fundamentals of Metal Machining Technology. The student is introduced to the basic metal machining equipment including Lathe, Miller, Drill Press, Saw, and Grinding Wheels. Students will perform basic lathe operations, which will consist of facing, center-drilling, chuck turning, turning between centers, boring, grooving, tapers, knurling, and single point threading. Students will identify the major parts of the vertical & horizontal mill, align a vise, use an indicator, edge finder, and boring head, determine speeds and feeds, perform simple indexing, mill flat, square surfaces and slots, drill, bore, and tap holes.

Course Objectives: At the conclusion of this course students will be able to...

- **Demonstrate an understanding of Personal Protective Equipment [PPE].**
- **Demonstrate an understanding of lockout/tag-out safety systems.**
- **Demonstrate an understanding of Machine Guarding Mechanisms.**
- **Demonstrate an understanding of Confined Space Entry.**
- **Demonstrate a basic understanding of Drill Press, Saw, and Grinding equipment.**
- **Demonstrate a basic understanding of the Lathe.**
- **Demonstrate a basic understanding of Milling Centers.**

Course content: Students will learn to...

- **Setup and operate a drill press.**
- **Drill, counterbore, ream, and countersink using the drill press.**
- **Setup and operate a vertical & horizontal band saw.**
- **Grind drills using the pedestal grinder.**
- **Plan sequences of lathe operations; Sets up machine; Mount and true a work piece in jaw chucks; Align centers; and Calculate & Set speeds, feeds, and depth of cut.**
- **Correctly center drill the ends of a work-piece.**
- **Plans sequence of milling operations; Sets up machine; Align work piece, work holding devices, jigs, and fixtures; Calculate and set speeds, feeds, and depth of cut.**
- **Understand the use of different cutting tools and cutter holders for the vertical milling machine.**
- **Understand the use of arbor driven milling cutters for the horizontal milling machine.**
- **Mill surfaces flat and square to each other.**