

**JAMESTOWN COMMUNITY COLLEGE**  
**State University of New York**

---

**INSTITUTIONAL COURSE SYLLABUS**

**Course Title:** Machine Tool Tech. II

**Course Abbreviation and Number:** MCT 1300

**Credit Hours:** 3

**Course Type:** Lecture/Lab

**Course Description:** Students will gain exposure to setting up and running manual machine tools such as lathes, mills, and drill presses. In this course, the students will concentrate on more hands-on applications of set-up and machining of more complex parts using the manual equipment in the MTI lab.

Prerequisites: MCT 1240, 1270; Eligibility: MAT 1210 or higher.

---

**Student Learning Outcomes:**

Students who demonstrate understanding can:

1. Explain and demonstrate proper and safe set-up of work pieces in the manual equipment (lathes and mills).
  2. Explain and demonstrate proper machine start-up and shut-down procedures.
  3. Explain the use of digital readouts.
  4. Determine feeds and speeds of feeds and speeds.
  5. Explain the use of special tooling such as taper end mills, corner radius end mills, etc.
  6. Complete independent projects of moderate difficulty on both lathes and mills.
- 

**Topics Covered:**

- |   |  |   |
|---|--|---|
| • Review Machine Tool Set-up and Safety   | • Turn a square block  | • Sharpen Drill   |
| • Determination of Equipment for operations.  | • Milling Machines   | • Draw sketch with needed dimensions for milling and grinding |
| • Carbide Tooling <ul style="list-style-type: none"><li>○ Use and Care</li><li>○ Nomenclature</li><li>○ Grades</li><li>○ Chip Breakers</li><li>○ Speeds and Feeds</li></ul> | • Digital Readouts   | • Saw Stock   |
| • Engine Lathes   | • Special Tooling <ul style="list-style-type: none"><li>○ Taper End Mills</li><li>○ Corner Radius End Mills</li><li>○ Keyway Cutter</li><li>○ T-Slot Cutter</li><li>○ Dovetail Cutter</li><li>○ Mall End Mills</li><li>○ Boring Bars</li></ul> | • Lathe – Tailstock and alignment – turn between centers      |
| • Preparation of tool bits  | • Boring Holes   | • Lathe – Turn tapers, square, and bore holes                 |
| • Digital Readouts  | • Milling Keyways  | • Lathe – Threading – external and internal                   |
| • Internal Boring   | • Pocket Milling   | • Mills – Turn Pin  |
| • Turning Between Centers – Tapers and Precision Diameters  | • Turning in a Vertical Mill   | • Mills – Bore Holes  |
| • How to Knurl on a Lathe   | • Angle Head: Set-up and operation   | • Mills – Pocket milling                                      |
| • Threading External & Internal   | • Lab Outline and Projects   | • Pencil Holder   |
|   |  | • Dead Center   |
- 

**Information for Students**

- Expectations of Students
  - [Civility Statement](#)
  - [Student Responsibility Statement](#)
  - [Academic Integrity Statement](#)
- [Accessibility Services](#)  
Students who require accommodations to complete the requirements and expectations of this course because of a disability must make their accommodation requests to the Accessibility Services Coordinator.
- [Get Help: JCC & Community Resources](#)
- [Emergency Closing Procedures](#)

- Course grade is determined by the instructor based on a combination of factors, including but not limited to, homework, quizzes, exams, projects, and participation. Final course grade can be translated into a grade point value according to the following:

A=4.0	B+=3.5	B=3	C+=2.5	C=2	D+=1.5	D=1	F=0
-------	--------	-----	--------	-----	--------	-----	-----

- Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, VA appointments) are welcome and encouraged to communicate these to the instructor.

---

**Effective Date:** Fall 2021