



**MFG 110 Manufacturing Processes I**  
**3 Credits**  
**College Now/CTE**  
**Student Outcomes Checklist**  
[cocc.edu/departments/college-now/](http://cocc.edu/departments/college-now/)

Student's Name \_\_\_\_\_

Student's Signature \_\_\_\_\_ Completion Date \_\_\_\_\_

High School Teacher's Signature \_\_\_\_\_

Recommended Grade \_\_\_\_\_ High School \_\_\_\_\_

COCC Review Instructor's Signature \_\_\_\_\_

**COURSE DESCRIPTION:** Overview of manufacturing theory and manual operation of machine tools. Includes safety, using hand tools, band saw, drill press, lathe and milling machine operations.

**REQUIRED TEXT:** Welding Principles and Packages 4<sup>th</sup> Edition by Edward Bohnart

**INSTRUCTIONS TO THE TEACHER:** You may access video lectures, student quizzes, tests, PowerPoint slides, the final exam and answer keys through Blackboard. Call the College Now office at 541.504.2930 for access.

**REQUIRED DOCUMENTATION:** When the student has successfully completed all outcomes and tests, the high school teacher will mail or deliver the following documents to: College Now Office, Central Oregon Community College, 2600 NW College Way, Bend, OR 97703.

1. The completed student grading sheets detailing the student scores (pages 1, 2 and 5 of this document).
2. The signed final grade roster for the course.

**GRADING:**

A	4.0	Outstanding Performance
A-	3.7	Superior
B+	3.3	Excellent
B	3.0	Very good
B-	2.7	Good
C+	2.3	Better than satisfactory
C	2.0	Satisfactory
D	1.0	Passing (NOTE- DOES NOT COUNT TOWARD MATC GRADUATION)
F	0.0	Not passing

**See Grading Policy at**

[cocc.edu/departments/college-now/forms/files/grading\\_policy.pdf](http://cocc.edu/departments/college-now/forms/files/grading_policy.pdf)

## MATC Grading Standards

### ASSESSMENT GRADE:

Portfolio	10%
Cognitive Assessment	40%
Authentic Assessment	<u>50%</u>
<b>TOTAL</b>	<b><u>100%</u></b>

Teacher's Signature \_\_\_\_\_

**RECOMMENDED GRADE** \_\_\_\_\_  
Record here and on page 1

### OUTCOMES:

The student will demonstrate how to...

- Safely setup and operate a band saw.
- Safely setup and operate the drill press.
- Correctly identify and utilize common manufacturing hand tools.
- Safely setup and operate a milling machine.
- Safely setup and operate an engine lathe.

# MFG 110

## MANUFACTURING PROCESS I

### STUDY GUIDE

#### ➤ SAFETY: Week 1 & 2

Workplace safety: Precision Machining Technology 2<sup>nd</sup> edition: Read section 2, unit 1, pages 42 to 62 and do review questions.

Introduction to Machining: Precision Machining Technology 2<sup>nd</sup> edition: Read section 1, unit 1, pages 3 to 19 and do review questions.

Workplace Skills: Precision Machining Technology 2<sup>nd</sup> edition: Read section 2, unit 4, pages 28 to 40 and do review questions.

See instructor for tests: Workplace safety, Introduction to Machining and Workplace skills.

#### ➤ MEASUREMENT: Week 3

Precision Machining Technology 2<sup>nd</sup> edition: Read section 2, unit 4, pages 98 to 146 and do review questions.

Watch videos: <http://youtu.be/zv6NUyFbWEQ> and <https://youtu.be/ffq101Wkp4k>

Do measurement exercises: Shaft, Hole and caliper.

See instructor for test.

#### ➤ HAND TOOLS AND CARE: Week 4

Precision Machining Technology 2<sup>nd</sup> edition: Read section 3, unit 3, pages 250 to 265 and do review questions.

Watch video: <https://youtu.be/4o0tqF0jDdo>

See instructor for test.

#### ➤ SAWS AND CUTOFF MACHINES: Week 5

Precision Machining Technology 2<sup>nd</sup> edition: Read section 3, unit 4, pages 266 to 282 and do review questions.

Do Horizontal Band Saw Identification and safety test

Do Vertical Band Saw Identification

Do cutting project:

See instructor for test.

➤ **OFFHAND GRINDING: Week 6**

Precision Machining Technology 2<sup>nd</sup> edition: Read section 3, unit 5, pages 283 to 292 and do review questions.

Do Lathe Cutter Grinding exercise

See instructor for test.

➤ **DRILL PRESS: Week 7**

Precision Machining Technology 2<sup>nd</sup> edition: Read section 4, unit 1, 2 and 3, pages 313 to 353 and do review questions.

Do Drill Press safety test

See instructor for test.

Do drill plate exercise.

➤ **MILLING MACHINE: Week 8**

Precision Machining Technology 2<sup>nd</sup> edition: Read section 6, unit 1, pages 461 to 475 and unit 3, pages 497 to 500.

Watch SME FUNDAMENTALS MANUFACTURING PROCESSES, MILLING & MACHINING CENTERS video (check out from tool room).

Precision Machining Technology 2<sup>nd</sup> edition: Read section 6, unit 3, pages 504 to 505 (check out from tool room).

Do all review questions.

Do Manual Milling Machine safety test

Precision Machining Technology 2<sup>nd</sup> edition: Read section 6, unit 3, pages 510 to 513 and do skill as outlined in your text book.

See instructor for test.

➤ **ENGINE LATHE: Week 9**

Precision Machining Technology 2<sup>nd</sup> edition: Read section 5, unit 1 and unit 3.

Do review questions.

Do Manual Lathe test

Watch SME FUNDAMENTALS MANUFACTURING PROCESSES, TURNING & THE LATHE (check out from tool room).

Do hammer project.

See instructor for test.

➤ **FINAL SKILLS TEST FOR MFG 110**

**MFG 110**  
**MANUFACTURING PROCESSES I**  
**GRADE SHEET**

**STUDENT NAME:** \_\_\_\_\_ **TERM:** \_\_\_\_\_

<b>TASK</b>	<b>TEST SCORES</b>	<b>INSTRUCTOR</b>	<b>SKILL</b>
<b>1. <u>SAFETY TEST:</u></b> <b><u>MACHINE TOOL DEMO:</u></b>			
<b>2. <u>MEASUREMENT TEST:</u></b> <b><u>O.D. SKILL</u></b> <b><u>I.D. SKILL:</u></b> <b><u>CALIPER SKILL:</u></b>			
<b>3. <u>HAND TOOLS TEST:</u></b>			
<b>4. <u>SAWS &amp; CUTOFF SAWS TEST:</u></b> <b><u>HORIZONTAL TEST:</u></b> <b><u>VERTICAL TEST:</u></b> <b><u>CUTOFF SAW TEST:</u></b>			
<b>5. <u>OFF HAND GRINDING TEST:</u></b> <b><u>PEDESTAL</u></b> <b><u>BELT:</u></b> <b><u>HAND:</u></b>			
<b>6. <u>DRILL PRESS TEST:</u></b> <b><u>DRILL PLATE PROJECT:</u></b>			
<b>7. <u>MILLING MACHINE TEST:</u></b> <b><u>TRAMMING MILLING HEAD:</u></b> <b><u>SQUARING VISE:</u></b> <b><u>FINDING EDGES:</u></b> <b><u>SQUARING 1-2-3 BLOCKS:</u></b>			
<b>8. <u>LATHE TEST:</u></b> <b><u>HAMMER PROJECT:</u></b>			
<b>9. <u>SKILLS ASSESMENT FINAL:</u></b> <b><u>WILL COVER ALL THE ABOVE:</u></b>			

**MANUFACTURING APPLIED TECHNOLOGY CENTER  
COURSE SYLLABUS**

**COURSE TITLE:** MANUFACTURING PROCESS I

**COURSE NUMBER:** MFG 110

**COURSE DATE:** Fall, Winter, Spring and Summer Terms   **CONTACT HOURS:** 90  
Self Paced Program, classroom and lab  
schedule per MATC open hours

**CREDIT HOURS:** 3

**COURSE LOCATION:** Building #3 Redmond Campus Rm 317

**INSTRUCTOR:** MATC INSTRUCTORS AS DESIGNATED

**COURSE DESCRIPTION:** Overview of manufacturing theory and manual operation of machine tools. Includes safety, using hand tools, bandsaw, drill press, lathe and milling machine operations.

**PREREQUISITES:** MFG 100 MATC Orientation and Instructor's Approval

**REQUIRED TEXT:** **PRECISION MACHINING TECHNOLOGY 2<sup>nd</sup> EDITION**

**REQUIRED EQUIPMENT BY STUDENT:** Safety glasses, calculator.

**OUTCOMES:** The student will demonstrate how to...

- Safely setup and operate a band saw.
- Safely setup and operate the drill press.
- Correctly identify and utilize common manufacturing hand tools.
- Safely setup and operate a milling machine.
- Safely setup and operate an engine lathe.

**INSTRUCTIONAL METHODS:** This course is taught using various methods including video topic presentations, open class discussions, hands on lab practice and safety, visual inspection of machining practice samples, computer quizzes, mid-term and final.

**MATC SUPPLIED TEXTBOOK AND MATERIALS:** MATC supplied Manufacturing I Tooling Cart.

## TOPICS:

- Measuring tool use
- Band saw setup and operation
- Drill press setup and operation
- Hand tool use
- Milling machine setup and operations
- Milling processes
- Manual lathe set up and operations
- Turning operations

## ASSESSMENT GRADING:

See Department Grading Standards

## POLICIES:

The following course and college policies apply to each student enrolled in this course.

Student rights and responsibilities	Please read the Students Rights and Responsibilities handbook available at: <a href="http://cocc.edu/policies/general-procedures-manual/student/student-rights-and-responsibilities.aspx">cocc.edu/policies/general-procedures-manual/student/student-rights-and-responsibilities.aspx</a>
Americans with disabilities	Students with documented disabilities who may need accommodations, who have any emergency medical information the instructor should know of, or who need special arrangements in the event of evacuation, should make an appointment with the instructor as early as possible, no later than the first week of the term. Students may also wish to contact the COCC Disability Services Office in the Boyle Education Center at (541) 383-7583.
Non-discrimination policy	Central Oregon Community College is an affirmative action, equal opportunity institution. It is the policy of the Central Oregon Community College Board of Directors that there will be no discrimination or harassment on the basis of age, disability, gender, marital status, national origin, race, religion, sexual orientation, or veteran status in any educational programs, activities or employment. Persons having questions about equal opportunity and non-discrimination, please contact Human Resources for referral to the appropriate personnel, (541) 383-7236.
Student insurance	Students are not covered by medical insurance while on campus or involved in college classes and activities. Students are responsible for their own medical and dental insurance coverage.

Disruptive behavior	Students and faculty each have responsibility for maintaining an appropriate learning environment. Disruptive behaviors that interfere with the learning or teaching process will not be tolerated. Examples include, but are not limited to: talking in class, cell phone use or text messaging, sleeping, or in any other way not engaging in class activities, arriving late or leaving early without informing the instructor, or any other behavior that in any way negatively impacts the learning environment. Students exhibiting this behavior will be given a warning and then asked to leave the class if the behavior persists. All disruptive behavior will be reported to the Director of Student Life and could result in dismissal from the class.
Cheating and plagiarism	Students are expected to practice the highest standards of academic honesty. Acts of plagiarism or cheating are unacceptable and will result in a failing grade on the assignment and could end in dismissal from the course. Plagiarism is using, borrowing or stealing someone else's words or ideas without giving credit to the source. This includes copying definitions and sentences from textbooks, periodicals, and other student's papers, the Internet or any other resource. Cheating on any assignment or test in any form is also unacceptable. Students are expected to complete all assignments independently, unless it is designated as a group assignment. All acts of cheating or plagiarism will be reported to the Director of Student Life and disciplinary actions may result.
Final exam policy	The MATC is a self paced learning environment. The Final Exam for this course may be taken at any time once the student has completed all necessary assignments as required by the Skill Accomplishment Record and received written approval to take the exam from the Instructor of Record. Final Exams are closed book, closed note. Students must turn in their portfolio to the MATC Curriculum Room prior to taking the exam. Depending on the course, a student may be given their exam in electronic or paper form. In some courses, the Final Exam may consist of a hands-on project that will be completed in a lab. The last day to take the Final Exam for will be clearly posted on the white boards in the MATC classroom several weeks before finals week. Because of the flexible nature of the MATC program, there should be ample time to plan course completion and taking of the Final Exam. Makeup or special exams dates are not granted. However, if a student has been approved for a Final Exam and special circumstances prevent the taking of the exam by the end of the term, students should see their instructor of record in advance to arrange for an "I" grade so they can take the exam as soon as possible in the following term. If a student in this situation does not take the exam during the following term, COCC "I" grade policies will be applied and the course grade will become an "F".

**PHYSICAL CONTACT STATEMENT:**

Due to the nature of MATC courses, students are advised that physical contact between the instructor and student, or student to student may occur during some lab assignments. If you have concerns about these situations, you are encouraged to discuss these with the instructor prior to the next class session to determine if appropriate alternatives exist. If you do not think you will be able to participate to the extent required by the course, you are encouraged to drop the course within the appropriate deadlines in order to obtain a refund.