

**Linn-Benton Community College, Machine Tool Technology Department**  
**Course Syllabus**

Course name: Manufacturing Processes 2

Course number: MA3.397

Credits: 6

Days, Hours: Monday through Thursday, 9:00 to 11:50 AM (Conditions permitting, Alternate via Zoom)

Location: IB 102

Perquisite: MA3.396

Required text: Machine Tool Practices 11<sup>th</sup> Edition, ISBN-13: 978-0-13-489350-1

Required calculator: Sharp EL506 X, available at LBCC Bookstore

Required tools: None

Instructor: Ryan Powell

Phone number: 541.917.4599

Email address: powellr@linnbenton.edu

Office: IB 111A

Office hours/student meetings: By appointment, via Zoom see instructor website

Catalog description: This lecture/lab course provides continuing machine tool technology training and learning experiences at an intermediate level. Instruction will be given in the safe and efficient operation of machine tools. Theory and practical considerations are covered.

Course learning outcomes: Students successfully completing this course will be able to:

- Set-up and operate the vertical milling machine, the engine lathe, and drill press.
- Understand tool geometry as it relates to metal removal.
- Use the different accessories that are designed to be used on the lathe and milling machine.
- Understand the relationship between cutting speed, feed rate and depth of cut.
- Understand comparison measurement and the coordinate measurement system as it is used in the shop.
- Apply safe shop practices.
- Understand how to calculate the proper speed for a given machining operation

- Understand 60° thread calculations

Learning activities: This course will include lectures, quizzes, tests, demonstrations, and machine shop projects.

Assessment tasks: A student's progress will be evaluated as follows:

- Project completion 15%
- Class attendance and Participation 40%
- Homework and Quizzes 20%
- Midterm Exam 10%
- Final Exam 15%

**EACH WEEK'S ASSIGNMENTS ARE POSTED IN MOODLE AND DUE BY THE DUE DATE LISTED, NO CREDIT FOR LATE WORK**

**Course content:**

**Week 1:** Machinability and Chip Formation

**Week 2:** Speeds and Feeds for Machine Tools/Using Comparison Measuring Instruments

**Week 3:** Using Gage Blocks/Using the Offset Boring Head

**Week 4:** Sixty-Degree Thread Information and Calculations/Cutting Unified External Threads/Cutting

**Week 5:** Identification and Uses of Taps/Tapping Procedures

**MIDTERM EXAM**

**Week 6:** The Drill Press/Drilling Tools

**Week 7:** Operating Drilling Machines /Countersinking and Counterboring

**Week 8:** Reaming in the Drill Press

**Week 9:** Off-Hand Grinding/Hand Grinding of Drills on the Pedestal Grinder

Sharpen several drills and submit to your instructor for approval.

**Week 10:** Review for Final exam.

**Week 11:** FINAL EXAM

Request for Special Needs or Accommodations

Direct questions about or requests for special needs or accommodations to the LBCC Disability Coordinator, RCH-105, 6500 Pacific Blvd. SW, Albany, Oregon 97321, Phone 541-917-4789 or via Oregon Telecommunications Relay TTD at 1-800-735-2900 or 1-800-735-1232. Make sign

language interpreting or real-time transcribing requests 2-4 weeks in advance. Make all other requests at least 72 hours prior to the event. LBCC will make every effort to honor requests. LBCC is an equal opportunity educator and employer.

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Students who may need accommodations due to documented disabilities, who have medical information which the instructor should know, or who need special arrangements in an emergency should speak with their instructor during the first week of class. If you believe you may need accommodations but are not yet registered with the Center for Accessibility Resources (CFAR), please visit the CFAR Website for steps on how to apply for services or call 541-917-4789.