

Linn-Benton Community College Machine Tool Technology Department
Course Syllabus

Course name: Manufacturing Processes 3

Course number: MA3.398

Credits: 6

Days, Hours: Online format, weekly ZOOM meeting Monday at 9AM, live demos TBA

Location: Online via ZOOM

Prerequisite: Manufacturing Processes 2 (MA3.397)

Required text: Machine Tool Practices 10th Edition, ISBN-13: 978-0-13-291265-5

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 Location: **Electronic meetings only**, LBCC campus is currently closed to all visitors

Office hours/student meetings: By appointment, email me, we can chat via ZOOM if needed

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

Course Learning Outcomes: Students successfully completing this course will be able to:

- Understand concepts related to the set-up and operate the vertical mill, the engine lathe, metal cutting saws and drill press in a safe manner.
- Understand tooling technology as it relates to metal removal.
- Understand the use of different accessories that are designed to be used on the lathe and the milling machine.
- Understand further concepts related to machining practices and machine operation
- Understand how to apply safe shop practices

Learning Activities: This course will include lectures, quizzes, tests, and demonstrations.

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

- ZOOM meeting and ZOOM Demo attendance and participation 15%
- Homework and Review Questions 65%
- Midterm Exam 10%
- Final Exam 10%

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

Each assignment will be released on Moodle at the beginning of the corresponding week, the due date for each assignment will be assigned at that time.

Course Outline by week (subject to change as dictated by learning environment):

Week 1: Grinding and Abrasive Machining Processes/Selection and Identification of Grinding Wheels

Week 2: Truing, Dressing, and Balancing of Grinding Wheels/Grinding Fluids

Week 3: : Horizontal Spindle Reciprocating Table Surface Grinders/ Work Holding on the Surface Grinder.

Week 4: Using the Surface Grinder/Problems and Solutions in Surface Grinding

Week 5: Additional Thread Forms/Cutting Acme Threads on the Lathe

MIDTERM EXAM

Week 6: Alignment of Lathe Centers/ Cutting Tapers on the Lathe

Week 7: Using Angular Measuring Instruments/ Tolerances, Fits, Geometric Dimensions, and Statistical Process Control (SPC)

Week 8: Sawing Machines/Using Reciprocating and Horizontal Band Cutoff Machines/Abrasive and Cold Saws

Week 9: Cutting Fluids/Using Carbide and Other Tool Materials

Week 10: CNC Tooling/ Other Advanced Machining Processes

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.

LBCC Comprehensive Statement of Nondiscrimination

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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.