

Linn-Benton Community College Machine Tool Technology Department
Course Syllabus

Course name: Manufacturing Processes 3

Course number: MA3.398

Credits: 6

Days, Hours: Monday through Thursday, 9:00 to 11:50 AM

Location: IB 103

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: IB 111A

Office hours/student meetings: By appointment

Catalog Description: This lecture/lab 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. Environmental awareness information is included in this course.

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

- 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.
- Use the 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
- Apply safe shop practices

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

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

- Project completion 20%
- Class attendance and participation 40%
- Homework and Review Questions 15%
- Midterm Exam 10%
- Final Exam 15%

**EACH WEEK'S HANDOUTS AND HOMEWORK ASSIGNMENTS ARE DUE BY
THE DUE DATE LISTED, NO CREDIT FOR LATE WORK**

Course Content:

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

Assignments: Read pages 574-591 and complete handout: Section L, Unit 1 **Due 10/10/2019**

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

Assignments: Read pages 592-600 and complete handouts: Section L, Units 2, and 3

Due 10/17/2019

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

Assignment: Read pages 601-608 and complete handouts: Section L, Units 4, and 5

Due 10/24/2019

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

Assignment: Read pages 609-618 and complete handouts: Section L, Units 6 and 7

Due 10/31/2019

Week 5: Alignment of Lathe Centers/ Cutting Tapers on the Lathe

Assignment: Read pages 435-437 and 472-482 and complete handouts: Section I Unit 8 and 13

Due 11/7/2019

MIDTERM EXAM

Week 6: Using Angular Measuring Instruments/ Tolerances, Fits, Geometric Dimensions, and Statistical Process Control (SPC)

Assignment: Read pages 171-188 and complete handouts: Section C Unit 7 and 8

Due 11/14/2019

Week 7: Cutting Fluids/Using Carbide and Other Tool Materials

Assignment: Read pages 272-291 and complete handouts: Section F, Units 3 and 4 **Due 11/21/2019**

Week 8: CNC Tooling

Assignment: Read pages 693-704 and complete handout: Section M, Unit 3 **Due 11/27/2019**

Week 9: Other Advanced Machining Processes

Assignment: Read pages 705-718 and complete handout: Section M, Unit 4 **Due 12/5/2019**

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.