

Linn-Benton Community College, Machine Tool Technology Department

Course Syllabus

Course name: Manufacturing Processes I

Course number: MA3.396B 04

Credits: 2

Prerequisite: none

Days, Hours: Friday, 1:00pm to 3:50pm

Location: IB 103

Instructor: Chris Berry

Student hours: Wednesday 4:00-5:00pm, Thursday 5:00-6:00pm

Student hours link: [CLICK FOR ZOOM](#). PASSWORD 123456

Phone number: Office 541-917-4509 / Cell 503-931-7728 (Text Only)

Email address: berryc@linnbenton.edu

Personal Protective Equipment: In this course you will be operating industrial machinery in a controlled setting. To ensure the safest possible environment the following Personal Protective Equipment (PPE) must be worn at all times in the shop:

- Safety Glasses (provided)
- Sturdy closed-toed shoes
- Full length leg coverings (pants, skirt, dress, etc.)

Classroom requirements for all students and faculty due to COVID-19: Linn-Benton Community College has established rules and policies to make the return to the classroom as safe as possible. It is required for everyone to follow all of the campus rules and policies. To participate in this class, LBCC requires all students to comply with the following:

- Masks are required at all times in the classroom/machine shop
- Wear a mask or face covering indoors at all times. Your mask or face covering must be properly worn (fully covering nose and mouth and tight-fitting). Mesh masks, face shields, or face covering that incorporates a valve designed to facilitate easy exhalation are not acceptable.
- If you have a medical condition or a disability that prevents you from wearing a mask or cloth face covering, you must obtain an accommodation from CFAR (Center for Accessibility Resources) to be exempt from this requirement.

- State guidelines do not limit class size. Physical distancing accommodations can be made upon request and cleaning supplies are also available for personal use.

Description: This course provides training and learning experiences in basic machining operations. Students will be using lathes and milling machines to complete projects. Skills for successful employment are emphasized.

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

- Set-up and operate the vertical milling machine and the engine lathe.
- Apply safe shop practices.
- Understand the relationship between cutting speed, feed rate and depth of cut.
- Make accurate measurements with a ruler, micrometer and caliper.
- Understand tolerances and clearances as they relate to an assembly.
- Demonstrate precision lay-out skills.

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

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

- Attendance 70%
- Class participation and quizzes 15%
- Midterm Exam 5%
- Project Completion 10%

Course Content

The following topics will be covered in this course (subject to change):

- Machine shop safety
- Measuring tools including rulers, calipers and micrometers
- Cutting speed formula
- Practical considerations related to speed, feed and depth of cut
- Safe operation and set-up of vertical milling machines
- How to set a vise parallel to the X axis using a dial test indicator
- How to use an edgefinder
- Drilling and tapping holes
- Tooling for the mill
- Safe operation and set-up of engine lathes
- Turning a part to a precise specification
- Using a live center
- Drilling using the tailstock
- Lathe tooling
- How to achieve a good sliding fit between two parts of an assembly
- Basic blueprint interpretation
- Precision lay out at the surface plate using a height gage

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

LBCC prohibits unlawful discrimination based on race, color, religion, ethnicity, use of native language, national origin, sex, sexual orientation, gender, gender identity, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws. For further information see [Board Policy BP-1015](#). Title II, IX, & Section 504: Scott Rolen, CC-108, 541-917-4425; Lynne Cox, T-107B, 541-917-4806, LBCC, Albany, Oregon. To report:

linnbenton-advocate.symplicity.com/public_report

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.