Linn-Benton Community College
Machine Tool Technology Department
Course Syllabus

Course Name: CNC LATHE

Course Number: MA3.421 01/02

Hours, Days: 1:00-3:50 PM (01) or 6:00-8:50 PM (02) Wednesday and Thursday

Credits: 4

Required Text: *Haas Lathe Programming Workbook* (free download)

Required Calculator: Sharp EL506X, or any calculator with trigonometry functions

Location: IB 112

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, LBCCrequires 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 accomodations can be made upon request and cleaning supplies are also available for personal use.

Course Description:

This course provides training in the safe operation and part programming of the CNC Turning Center. Students gain hands-on skills and knowledge of NC code by completing a series of assignments. Manual, Manual Data Input (MDI) and Memory modes of operation on the Fanuc control will be covered.

Course Objectives:

Students successfully completing this course will be able to:

- Read, write and edit NC code for two axes turning.
- Understand and follow Safety Procedures for CNC Machine Tools.
- Set Workshift, Wear and Geometry Offsets.
- Plan a logical order of operations and tool changes.
- Demonstrate hands on skills when performing routine machine operator tasks.

Methods of Instruction:

A combination of Lectures, Demonstrations, Programming Exercises, Quizzes, a Midterm Exam and a Final Exam are used to guide students to a series of competencies.

General Class Format:

- Lecture and Discussion; practical considerations on a topic are covered.
- The instructor demonstrates the application of the lecture topic at the Turning Center.
- Students study the information that relates to the topic as necessary.
- Following the directions in the Programming Exercise students draw the part and write the part program
- After the procedure for proving a new part program has been performed, the part is turned.
- The drawing and a copy of the student's program are submitted for grading.

Methods of Evaluation:

Student's progress will be assessed with a series of skills tests and laboratory assignments. Midterm and Final examinations will be given. Students are required to keep an organized notebook; the notebook factors into the final grade.

Skills tests = 15%
Lab assignments =35%
Midterm exam = 10%
Final Exam = 25%
Notebook = 15%

Course Content:

The following topics will be covered in this course. (Subject to change at instructor's discretion)

- Start up and initialization procedures
- Manual operation
- Manual Data Input
- Automatic operation
- Setting Workshift
- Setting Geometry and Wear Offsets
- Reading, writing and editing G&M machine code
- Safety in regard to proving part programs

- Safety in regard to machine operation
- Right angle trigonometry as it applies to tool path
- Tool Nose Radius Compensation
- Canned cycles and Repetitive Cycles
- Tool Identification
- Machine operator skills

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.