

Chemeketa Community College
4000 Lancaster Drive NE
PO Box 14007
Salem, Oregon 97309

Course Outline

Course Identification CAM130 **Credits** 4 **Date** 01/06

Course Title: CNC Machine Setup/Operation

Total Instructional Hours, for Course, per Term:

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|-----------|------------------|---|----------|-----------|
| <u>22</u> | Lecture Hours | = | <u>2</u> | Credit(s) |
| <u>66</u> | Laboratory Hours | = | <u>2</u> | Credit(s) |

Prerequisite Course(s):

None

Required Text(s):

Quesada, Robert, *Computer Numerical Control: Machining and Turning Centers*, 2004, Prentice Hall, ISBN 0130488674

Course Description:

Focuses on application of the Computer Numerical Control (CNC) systems used in today's manufacturing environment. Includes hands-on experiences with both personal and manufacturing specific (CNC) computers to establish basic operational skills.

Performance Based Learner Outcomes:

Upon successful completion of the course, students should be able to:

1. Identify machine construction and control systems.
2. Identify basic program format structures for different CNC systems.
3. Apply CNC operating systems in the manufacturing environment.
4. Demonstrate the use of tooling on CNC machines.
5. Setup and operate CNC mills and lathes.
6. Identify and apply safety guidelines for running CNC machines.
7. Input and retrieve CNC data.
8. Demonstrate industrial accepted positive work ethics and habits to include teamwork, honesty, responsibility, punctuality, attendance, personal appearance, cooperation, positive attitude and effective interaction skills.

Course Content Outline:

- I. Machine Nomenclature, Construction and Control Systems
- II. Coordinate Systems
- III. Program Formats
- IV. Electronic Communications, RS232C, Networks, Internet
- V. Mills: Setup, Operation and Documentation
- VI. Lathes: Setup, Operation and Documentation
- VII. Tooling
- VIII. Programming Languages
- IX. Industrial Applications