

ILLINOIS VALLEY COMMUNITY COLLEGE



COURSE OUTLINE

DIVISION: Workforce Development

COURSE: CNC 1202 - CNC Milling Machine Operations

Date: Spring 2015

Credit Hours: 3

Prerequisite(s): CNC-1200 with a grade of C or better.

Delivery Method:

<input checked="" type="checkbox"/> Lecture	2 Contact Hours (1 contact = 1 credit hour)
<input type="checkbox"/> Seminar	0 Contact Hours (1 contact = 1 credit hour)
<input checked="" type="checkbox"/> Lab	2 Contact Hours (2 contact = 1 credit hour)
<input type="checkbox"/> Clinical	0 Contact Hours (3 contact = 1 credit hour)
<input type="checkbox"/> Online	
<input type="checkbox"/> Blended	

Offered: Fall Spring Summer

IAI Equivalent – **Only for Transfer Courses**–go to <http://www.itransfer.org>:

CATALOG DESCRIPTION:

In this course, students will learn about the basic and advanced features of CNC milling machines, including controls and programming. They will learn how to read blueprints and use G&M codes to write programs. Students will also learn how to select tools, speeds and feeds for different operations and materials. They will also learn how to download and upload files from a computer.

GENERAL EDUCATION GOALS ADDRESSED

[See the last page of this form for more information.]

Upon completion of the course, the student will be able:

[Choose those goals that apply to this course.]

- To apply analytical and problem solving skills to personal, social and professional issues and situations.
- To communicate orally and in writing, socially and interpersonally.
- To develop an awareness of the contributions made to civilization by the diverse cultures of the world.
- To understand and use contemporary technology effectively and to understand its impact on the individual and society.
- To work and study effectively both individually and in collaboration with others.
- To understand what it means to act ethically and responsibly as an individual in one's career and as a member of society.
- To develop and maintain a healthy lifestyle physically, mentally, and spiritually.
- To appreciate the ongoing values of learning, self-improvement, and career planning.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals.]

Upon completion of the course, the student will be able to:

Students who successfully complete the above have demonstrated the skills to accomplish the following objectives:

- 1.0 The student will demonstrate production machining.
- 2.0 A program restart will be performed by the student.
- 3.0 The student will demonstrate program editing.
- 4.0 The student will demonstrate circular interpolation machining.
- 5.0 The student will demonstrate drilling, boring and tapping canned cycles.

COURSE TOPICS AND CONTENT REQUIREMENTS:

1. Safety
2. DVD/Videotape instruction
3. Sequence of operation
4. Composition of program
5. Program loading
6. Reading and interpreting action codes
7. Verification and editing programs
8. Routine maintenance

INSTRUCTIONAL METHODS:

1. Lecture
2. DVD/Demonstration
3. Videotape instruction
4. Practical applications
5. Individualized instrumentation
6. Hands-on lab work.
7. Master Task on-line lectures/test

INSTRUCTIONAL MATERIALS:**STUDENT REQUIREMENTS AND METHODS OF EVALUATION:**

1. Problem solving
2. Skill proficiency
3. Technical knowledge

OTHER REFERENCES

1. Operations Manual, Okuma MC4VA
2. Operations Manual, Bridgeport E-Z TRAK
3. Mastertask

Other References:

1. Introduction to Computer Numerical Control ISBN: 0-13-217603-3
2. Computer Numerical Control Operation and Programming
3. Machinist Ready Reference ISBN: 0970339801
4. Example Programs

“This workforce solution was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timelines, usefulness, adequacy, continued availability, or ownership. This solution is copyrighted by the institution that created it. Internal use, by an organization and/or personal use by an individual for non-commercial purposes, is permissible. All other uses require the prior authorization of the copyright holder.”

Course Competency/Assessment Methods Matrix

CNC 1202; CNC Milling Machine Operations	Assessment Options																															
For each competency/outcome place an "X" below the method of assessment to be used.	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D							
1.0 The student will demonstrate production machining.				X	X	X		X	X		X				X				X													
2.0 A program restart will be performed by the student.			X	X	X		X							X					X													
3.0 The student will demonstrate program editing			X	X	X		X	X	X					X					X													
4.0 The student will demonstrate circular interpolation machining.			X	X	X		X	X						X					X													
5.0 The student will demonstrate drilling, boring and tapping canned cycles.			X	X	X		X	X						X					X													