



CREDIT COURSE OUTLINE

I. COVER PAGE

(1) MFGT 271	(2) CNC OPERATOR	(3) 5
Number	Title	Units

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(12) Catalog Description:
 The course is designed to provide training in the skills needed to enter employment with local manufacturing industries with emphasis on shop safety.

II. COURSE OUTCOMES:

(Specify the learning skills the student demonstrates through completing the course and link critical thinking skills to specific course content and objectives.)

Upon completion of this course, students will be able to:

III. COURSE OBJECTIVES:

(Specify major objectives in terms of the observable knowledge and/or skills to be attained.)

In the process of completing this course, students will:

- I. Blueprint Reading
- II. Use detail and assembly drawings
- III. Read and interpret blueprint information
- IV. Precision Measurement
- V. Use precision measurement tools: a. Rulers and scales b. Vernier calipers c. Micrometers d. Protractors e. Bore gauges, fixed measurement gauges
- VI. Shop Mathematics
- VII. Be able to perform addition, multiplication, and division operations to whole numbers, fractions, and decimals
- VIII. Use mathematical formulas to determine size and shape of geometric shapes
- IX. Use formulas and charts to determine machine RPM
- X. Shop Safety
- XI. Machine Shop Operation

IV. COURSE OUTLINE:

Lecture Content:

- I. Blueprint Reading
 - A. Alphabet of lines
 - B. Working drawings
 - C. Dimensions
 - D. Tolerances
 - E. Finish symbols
- II. Precision Measurement

- A. Rulers and scales
- B. Vernier calipers
- C. Micrometers
- D. Protractors
- E. Bore gauges
- F. Fixed measurement gauges
- III. Shop Mathematics
 - A. Whole numbers
 - B. Adding, subtracting, multiplying, dividing
 - C. Fractions, decimals
 - D. Shop formulas
 - 1. Radius
 - 2. Diameter
 - 3. Conversions
- IV. Shop Safety
 - A. Hand tool safety
 - B. Shop equipment safety
 - C. Machine tool safety
 - D. CNC safety
 - E. MSD sheets
 - F. Read and interpret MSDs for safe handling and use of hazardous material
 - G. Properly and safely use machine hand tools, machine tools, and CNC equipment.
- V. Machine Shop Operations
 - A. To be able to properly set CNC machine control data and programs
 - B. Be able to safely and accurately set up the proper tool for the machine
 - C. Be able to safely and accurately set up the material to be machined
 - D. Be able to safely and properly operate manual machines including:
 - 1. Turning
 - 2. Milling
 - 3. Drilling
 - 4. Sawing
 - 5. Grinding
 - E. Demonstrate Good Work Ethics including:
 - 1. Attendance
 - 2. Attitude
 - 3. Ability to work with others
 - 4. Follow instructions

V. APPROPRIATE READINGS

Reading assignments may include but are not limited to the following:

I. Sample Text Title:

II. Other Readings

- Global or international materials or concepts are appropriately included in this course
- Multicultural materials and concepts are appropriately included in this course

If either line is checked, write a paragraph indicating specifically how global/international and/or multicultural materials and concepts relate to content outline and/or readings.

VI. METHODS TO MEASURE STUDENT ACHIEVEMENT AND DETERMINE GRADES:

Students in this course will be graded in at least one of the following four categories. Please check those appropriate. A degree applicable course must have a minimum of one response in category A, B, or C.

A. Writing	
Check either 1 or 2 below	
X	1. Substantial writing assignments are required. Check the appropriate boxes below and provide a written description in the space provided.
	2. Substantial writing assignments are NOT required. If this box is checked leave this section blank. For degree applicable courses you must complete category B and/or C.
a)	essay exam(s)
b)	term or other paper(s)
c)	laboratory report(s)
d)	written homework
e)	reading reports
f)	other (specify)
	X

Required assignments may include but are not limited to the following:

B. Problem Solving
Computational or non-computational problem-solving demonstrations, including:

	a) exam(s)		d) laboratory reports
	b) quizzes		e) field work
	c) homework problems		f) other (specify):

Required assignments may include but are not limited to the following:

C. Skill demonstrations, including:			
X	a) class performance(s)	X	c) performance exams(s)
	b) field work		d) other (specify)

Required assignments may include but are not limited to the following:

D. Objective examinations including:			
X	a) multiple choice		d) completion
X	b) true/false		e) other (specify):
X	c) matching items		

COURSE GRADE DETERMINATION:

Description/explanation: Based on the categories checked in A-D, it is the recommendation of the department that the instructor's grading methods fall within the following departmental guidelines; however, the final method of grading is still at the discretion of the individual instructor. The instructor's syllabus must reflect the criteria by which the student's grade has been determined. (A minimum of five (5) grades must be recorded on the final roster.)

If several methods to measure student achievement are used, indicate here the approximate weight or percentage each has in determining student final grades.

Does Course Require Social Facilities? No

Attached Files:

<p><u>BASIC SKILLS ADVISORIES PAGE</u> The skills listed are those needed for eligibility for English 125, 126, and Math 201. These skills are listed as the outcomes from English 252, 262, and Math 250. In the right hand column, list at least <u>three</u> major basic skills needed at the beginning of the target course and check off the corresponding basic skills listed at the left.</p> <p><u>Check the appropriate spaces.</u></p> <p>_____ Eligibility for Math 201 is advisory for the target course.</p> <p>_____ Eligibility for English 126 is advisory for the target course.</p> <p>_____ Eligibility for English 125 is advisory for the target course.</p> <p><i><u>If the reviewers determine that an advisory or advisories in Basic Skills are all that are necessary for success in the target course, stop here, provide the required signatures, and forward this form to the department chair, the appropriate associate dean, and the curriculum committee.</u></i></p>

REQUISITES
No requisites

JUSTIFICATION OF LIMITATION ON ENROLLMENT

Enrollment in courses or blocks of courses may be limited based on performance, honors, or other performance based criteria. Be mindful of the disproportionate impact the limitation will have on specific groups of students. It is important to determine if the limitation will disproportionately keep under-represented students from enrolling in the course or block of courses.

Describe the reasons for limiting the enrollment.

Course Designator: MFGT 271
Course Title(s): CNC OPERATOR

Rationale for Limiting Enrollment:

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