

**Bergen Community College**  
**Division of Math, Science and Technology**  
**Department of Industrial & Design Technology**

**Course Syllabus**  
**MFG-222 Machine Tool Principles II**

Semester and year:  
Course Number:  
Meeting Times and Locations:

Instructor:  
Office Location:  
Phone:  
Office Hours:  
Email Address:

**COURSE DESCRIPTION:**

MFG-222 Machine Tool Principles II continues the work of Machine Tool Principles I by broadening the basic skills of a machinist by introducing intermediate and advanced topics such as milling and turning tools and their geometry, tool inserts, coolants and basic metallurgy. Students will experience these topics both in theory and hands-on in a practical laboratory setting.

2 lecture, 2 labs, 3 credits

Prerequisites: MFG 122 Machine Tool Principles I

Co-requisites: None

**STUDENT LEARNING OBJECTIVES:**

As a result of meeting the requirements in this course, students will be able to:

Student performance on these objectives will be measured by:

1. Demonstrate advanced skills in the use and operation of milling and turning processes.	Graded hands-on lab exercises and projects.
2. Recognize the interaction between metallurgical properties and machining operations.	Graded Exam.
3. Practice the interaction between tolerance and dimensioning techniques and the setup and operation of mills and turning machines.	Graded hands-on lab exercises and projects.
4. Demonstrate safety techniques and awareness in the use of all equipment.	Graded hands-on lab exercises and projects.

CONTENT:	<u>SECTION</u>	<u>TOPIC</u>
Machine Tool Practices	B.	Hand Tools
	C.	Dimensional Measurement
	D.	Materials Selection
	E.	Layout
	F.	Preparations For Machining-Operations
	G.	Sawing Machines
	H.	Drilling Machines
	I.	Turning Machines
	J&K.	Milling Machines
	L.	Grinding Machines
	M.	Intro To CNC

TEXTBOOK: Machine Tool Practices, 9<sup>th</sup> ED, Richard Kibble ISBN: 13:978-0-13-501508-7  
Shop References for Students and Apprentices. Edward Hoffman, Industrial Press Inc. 2<sup>nd</sup> Ed. ISBN: 978-0-8311-3079-4

EVALUATION:	A. Project Assignments . . . . .	35%
	B. Examination. . . . .	35%
	B. Final Examination. . . . .	20%
	C. Class Participation . . . . .	10%
	TOTAL . . . . .	100%

SPECIAL NOTES: **A final grade cannot be assigned for the course until all projects and examinations for the course have been completed.**

Make-up examinations will be administered in accordance with the instructor's and division's policy.

FACULTY ABSENCE PROCEDURE: Please note well.

A daily listing will appear in the glass case located in the main hall A bldg. which will indicate all classes which are cancelled. Students can consult this case before going to class. If students find a class cancelled which has not been listed, they should report this to the divisional dean's office (A325) or to the evening/Saturday office (L113).

CALENDAR:

<u>Class Meeting</u>	<u>Date</u>	<u>Topic</u>	<u>Section</u>
1.	_____	Dimensional Measurement	C
2.	_____	Materials Selection	D
3.	_____	Layout	E
4.	_____	Hand Tools <b>Project Assignment</b>	B
5.	_____	<b>EXAM 1</b> Preparation for Machining Operations	F
6.	_____	Sawing Machines/ Drilling Machines	G,H
7.	_____	Grinding / Machining	L
8.	_____	<b>Project Assignment</b>	
9.	_____	Turning Machines	I
10.	_____	<b>EXAM 2</b> <b>Project Assignment / Lab</b>	
11.	_____	Milling Machines	J,K
12.	_____	<b>Project Assignment / Lab</b>	
13.	_____	Intro To CNC	M
14.	_____	Open Lab	
15.	_____	<b>FINAL EXAM</b> Project Submission & Critique	

MFG222SCO

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