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

Course Syllabus
MFG-122 Machine Tool Principles I

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

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

COURSE DESCRIPTION:

MFG-122 Machine Tool Principles I introduces students to the basic hands-on and theoretical skills necessary of a machinist. Machining processes such as drilling, milling, turning, and grinding will be studied and developed. Theoretical skills such as machine terminology, speeds and feeds, uses of machinery handbook, and safety issues are also included. It would be beneficial if incoming students had some exposure to basic machining principles and equipment.
2 lecture, 2 labs, 3 credits
Prerequisites: None
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. Discuss effectively in machinist's language and terminology.	Graded Exams.
2. Apply data resources, such as the Machinery Handbook, to make real time project decisions based upon documented facts and information.	Graded hands-on lab projects.
3. Organize and operate typical machine shop tools and equipment.	Graded hands-on lab projects.
4. Demonstrate awareness and use of safety equipment and techniques appropriate to the machine shop environment.	Graded Exams.

COURSE CONTENT:
Basic Machine Shop Theory

CHAPTER	TOPIC
1.	Machinist Terminology
2.	Cutting Tools
3.	Speeds and Feeds
4.	Intro to Turning
5.	Intro to Drilling
6.	Intro to Milling
7.	Intro to Grinding
8.	Hand Tools and Threading
9.	Intro to Computer Numerical Control
10.	*Use of Shop Reference Handbook

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

EVALUATION:

A. Project Assignments	35%
B. Examinations	35%
C. Final Examination.	20%
D. 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:

Class Meeting	Date	Topic	Chapter
1.	_____	Basic Metallurgy	1
2.	_____	Fundamentals of Metal Cutting	2
3.	_____	Drills and Reamers	5
4.	_____	Milling Cutters	6
5.	_____	Milling Demo and **Project Assignment**	--
6.	_____	**EXAM 1** Chip Cutting Theory	3
7.	_____	Single Point Cutting Tools	4
8.	_____	Lathe Demo & Operations	4
9.	_____	Lathe **Project Assignment**	--
10.	_____	**EXAM 2** Open Lab	10
11.	_____	Principles of Grinding	7
12.	_____	Screw Threads and Taps	8
13.	_____	Machinery Handbook Applications/ **Individual Project Assignment**	10 (Students Shop Ref. book)
14.	_____	Intro To CNC / Open Lab	9
15	_____	**FINAL EXAM** Project Critique	--