

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

Course Syllabus
MFG-230 Welding Technology II

Semester and year:

Course Number:

Meeting Times and Locations:

Instructor:

Office Location:

Phone:

Office Hours:

Email Address:

COURSE DESCRIPTION:

MFG-230 Welding Technology II expands on the concepts and applications presented in MFG-130. Further exploration of the construction of welded components and the metallurgic effects on more exotic materials will take place. Students will study the application of welding to aluminum, magnesium, copper alloys, nickel and cobalt alloys, lead and zinc. Related safety and health considerations will be addressed.

2 lecture, 2 lab, 3 credits

Prerequisite: MFG-130 Welding Technology I

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. Specify the correct welding process for a given material and configuration.	Graded lab work exercises.
2. Utilize correct safety procedures in the implementation of a welding process.	Graded lab work and assignment worksheets.
3. Identify various materials according to color, hardness, density and other physical properties.	Graded handout exercises.
4. Demonstrate correct use of welding techniques with various materials and processes.	Graded welding coupons.**
5. Demonstrate the ability to read welding blueprints and understand specifications for welded structures.	Graded lab work exercises.

** Welding Coupons – Test Materials to demonstrate mastery of task.

COURSE CONTENT:
AWS WELDING HANDBOOK

<u>CHAPTER</u>	<u>TOPIC</u>
1.	Aluminum and Aluminum Alloys
2.	Magnesium and magnesium Alloys
3.	Copper and copper alloys
4.	Nickel and cobalt alloy
5.	Safe Practices in Welding
9.	Maintenance and repair welding

Handouts

Welding Symbols and Notation
Designing for Arc Welding
Design for Welded Joints, Distortion, and Fixtures
Welded Sculpture

TEXTBOOK:

The Procedure Handbook of Arc Welding, The James F. Lincoln Arc Welding Foundation, publishers, 14th edition

AWS Welding Handbook, Materials and Applications, American Welding Society, Publishers, ISBN 0-87171-470-1

EVALUATION:

A. Worksheets, Exercises and Coupons.	35 %
B. Examinations	35 %
C. Final Examination.	20 %
D. Class Participation	10%
TOTAL	100%

Projects are due the class meeting after they are assigned unless otherwise specified by the instructor. Projects submitted after that date will be lowered one full letter grade per class meeting that they are late.

ATTENDANCE POLICY:

Attendance will be taken twice during each class period. The first attendance for the lecture portion of the class will be at the beginning of each class. The second attendance, for the laboratory portion of the class will be taken at approximately ½ hour before the end of class

If a student is absent from the lecture portion of the class, it will be recorded as an absence for the entire class period. If a student is absent from the laboratory portion of the class, it will be recorded as an absence from that portion of the class only.

A letter grade will be deducted from the class participation portion of your final grade for each absence beyond three absences from either portion of a class period.

SPECIAL NOTES:

A final grade cannot be assigned for the course until all lab work 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.

CALENDAR:

<u>Class Meeting</u>	<u>Date</u>	<u>Topic</u>	<u>Chapter</u>
1.	_____	Designing for Arc Welding	Handouts
2.	_____	Welding Notation & Symbols	Handouts
3.	_____	Welded Joints, Distortion & Fixtures	Handouts
4.	_____	Safe Practices in Welding	5 AWS Book (AWS)
5.	_____	EXAM	
6.	_____	Aluminum And Aluminum Alloys	1 AWS
7.	_____	Magnesium And Magnesium Alloys	2 AWS
8.	_____	Open Lab	
9.	_____	Copper and Copper Alloys	3 AWS
10.	_____	Nickel & Cobalt Alloys	4 AWS
11.	_____	EXAM Welding Project & Assignment	
12.	_____	Maintenance and Repair	9 AWS
13.	_____	Open Lab	
14.	_____	Welded Sculpture	Research & Handouts
15	_____	Project Submission and Critique	

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