



CREDIT COURSE OUTLINE

I. COVER PAGE

(1) MFGT 40	(2) FUNDAMENTALS OF WELDING - OXY-ACETYLENE	(3) 2
Number	Title	Units

(4) Lecture / Lab Hours:	(8)Classification:	
Course Hours		
Weekly Lec hours: 1.17	Degree applicable:	X
Weekly Lab hours: 2.78	Non-degree applicable:	
Total Contact hours: 71.10	Basic skills:	
Lec will generate __ hour(s) outside work.	(9)RC Fulfills AS/AA degree requirement: (area)	
Lab will generate __ hour(s) outside work.	General education category:	
(5) Grading Basis: Grading Scale Only X	Major:	
Pass/No Pass option	Certificate of:	
Pass/No Pass only	Certificate in:	
(6) Advisories:	(10)CSU Baccalaureate:	X
(7) Pre-requisites (requires C grade or better):	(11)Repeatable: (A course may be repeated three times)	0
Corequisites:	(12)C-ID:	
	Proposed Start Date:	Spring 2012

(12) Catalog Description:
 Basic shop welding practices in oxy-acetylene fusion welding on plate, pipe and tubing of mild steel (M.S.), stainless steel and cast iron; brazing on M.S. and cast iron; soft and hard soldering on ferrous and nonferrous materials. Basic shop oxy-acetylene cutting practices using hand torch.

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:

- I. select and properly use tools encountered in the welding field.
- II. perform fusion welds on plates, pipes and tubing with the oxy-acetylene torch, and be able to braze both mild steel and cast iron.
- III. perform cutting operations on mild steel plate and pipe using the oxy-acetylene cutting torch.

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. demonstrate safe use of welding equipment.
- II. demonstrate knowledge of tip selection, pressure settings and welding techniques required for various welding applications.
- III. demonstrate hand-eye motor skills and welding techniques required to satisfactorily complete assigned welding projects.

IV. COURSE OUTLINE:

Lecture Content:

- A. Oxy-acetylene Welding
 1. General theory
 2. Oxy-acetylene safety
 3. Oxy-acetylene welding processes
 4. Oxy-acetylene cutting processes
- B. Basic Skills of O/A welding
 1. Setting up welding system
 2. Adjusting pressures
 3. Lighting torch
 4. Adjusting torch
 5. Torch manipulation
 6. Rod manipulation

7. Welding exercises

C. Basic Skills of O/A cutting

- 1. Cutting pressures
- 2. Cutting exercises
- 3. Mechanical cutting

D. Basic Skills of Brazing

- 1. Torch adjustment
- 2. Torch and rod manipulation
- 3. Brazing exercises

V. APPROPRIATE READINGS

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

I. Sample Text Title:

- 1. Recommended - William A. Bowditch & Kevin E. Bowditch *Welding Technology Fundamentals*, Goodheart-Willcox , 2005,
- 2. Recommended - - *Machinery's Handbook* , ed. 28th Industrial Press , 2008,

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)		d) written homework
	b) term or other paper(s)		e) reading reports
	c) laboratory report(s)		f) other (specify)

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

B. Problem Solving			
Computational or non-computational problem-solving demonstrations, including:			
X	a) exam(s)		d) laboratory reports
X	b) quizzes	X	e) field work
X	c) homework problems		f) other (specify):

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

Sample questions:

- 1. Specific skill building task oriented projects.
- 2. Reading and interpreting diagrams and drawings.
- 3. Completing skill demonstration projects using diagrams and drawings.
- 4. Completion of projects requiring the combining of several problem-solving tasks.

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:

1. Satisfactory completion of assigned skill building tasks.
2. Demonstration of the ability to safely set-up and operate various welding equipment.
3. Demonstration of the ability to properly use tools found in the welding trade.

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

VII. EDUCATIONAL MATERIALS

For degree applicable courses, the adopted texts, as listed in the college bookstore, or instructor-prepared materials have been certified to contain college-level materials.

Validation Language Level (check where applicable):

College-Level Criteria Met

YES NO

Textbook	<u> X </u>	<u> </u>
Reference materials	<u> X </u>	<u> </u>
Instructor-prepared materials	<u> </u>	<u> X </u>
Audio-visual materials	<u> </u>	<u> X </u>

Indicate Method of evaluation:

Used readability formulae (grade level 10 or higher)	<u> </u>
Text is used in a college-level course	<u> X </u>
Used grading provided by publisher	<u> </u>
Other: (please explain; relate to Skills Levels)	<u> </u>

Computation Level (Eligible for MATH 101 level or higher where applicable)

 X

Content

Breadth of ideas covered clearly meets college-level learning objectives of this course	<u> X </u>	<u> </u>
Presentation of content and/or exercises/projects:		
Requires a variety of problem-solving strategies including inductive and deductive reasoning.	<u> X </u>	<u> </u>
Requires independent thought and study	<u> X </u>	<u> </u>
Applies transferring knowledge and skills appropriately and efficiently to new situations or problems.	<u> X </u>	<u> </u>

List of Reading/Educational Materials

Recommended - William A. Bowditch & Kevin E. Bowditch *Welding Technology Fundamentals*, Goodheart-Willcox , 2005,
Recommended - - *Machinery's Handbook* , ed. 28th Industrial Press , 2008,

Comments:

 This course requires special or additional library materials (list attached).

 X This course requires special facilities:
lecture and welding laboratory

Attached Files:

BASIC SKILLS ADVISORIES PAGE 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 three major basic skills needed at the beginning of the target course and check off the corresponding basic skills listed at the left.

Check the appropriate spaces.

- Eligibility for Math 201 is advisory for the target course.
- Eligibility for English 126 is advisory for the target course.
- Eligibility for English 125 is advisory for the target course.

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.

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 40

Course Title(s): FUNDAMENTALS OF WELDING - OXY-ACETYLENE

Rationale for Limiting Enrollment:

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