WELD117 : Introduction To Welding

General Information

Author:	• Curtis G Potter
Course Code (CB01) :	WELD117
Course Title (CB02) :	Introduction To Welding
Department:	WELD
Proposal Start:	Spring 2025
TOP Code (CB03) :	(0956.50) Welding Technology
CIP Code:	(48.0508) Welding Technology/Welder.
SAM Code (CB09) :	Possibly Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000549244
Curriculum Committee Approval Date:	05/22/2024
Board of Trustees Approval Date:	07/16/2024
Last Cyclical Review Date:	05/22/2024
Course Description and Course Note:	WELD 117 consists of oxyacetylene welding, flame cutting, (manual and automatic), bronze and silver brazing and soldering. These processes are discussed and demonstrated. The student is given experience in applying the principles by individual practice on a sequence of selected plates and manipulative exercises on various metals.
Justification:	Mandatory Revision
Academic Career:	• Credit
Mode of Delivery:	
Author:	Curtis G Potter
Course Family:	

Academic Senate Discipline

Primary Discipline:	• Welding
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08)

Course is not a basic skills course.

☐ Allow Students to Gain Credit by Exam/Challenge

Course Special Class Status (CB13)

Course is not a special class.

Pre-Collegiate Level (CB21)

Not applicable.

Grading Basis

- Grade with Pass / No-Pass Option

Course Support Course Status (CB26)

Course is not a support course

General Education and C-ID

General Education Status (CB25)

Not Applicable

Transferability

Transferable to CSU only

Transferability Status

Approved

Units and Hours

Summary

Minimum Credit Units (CB07)	2
Maximum Credit Units (CB06)	2
Total Course In-Class (Contact) Hours	72
Total Course Out-of-Class Hours	36
Total Student Learning Hours	108

Credit / Non-Credit Options

Course Type (CB04)

Credit - Degree Applicable

Noncredit Course Category (CB22)

Credit Course.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Credit Course.

Funding Agency Category (CB23)

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

☐ Variable Credit Course

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	1	2
Laboratory Hours	3	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	0
Course In-Class (Contact) Hours	
Lecture	18
Laboratory	54
Studio	0

Total	72

Course Out-of-Class Hours

Lecture	36
Laboratory	0
Studio	0
Total	36

Time Commitment Notes for Students

No value

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Advisory

ENGL101 - Introduction to College Reading and Composition

Objectives

- Read, analyze, and evaluate a variety of primarily non-fiction readings for content, context, and rhetorical merit with consideration of tone, audience, and purpose.

OR

Advisory

ESL141 - Grammar And Writing IV

Objectives

- Compose a 400 to 450-word thesis-based essay which: (d) shows clear organization into an introduction, body, and conclusion.

Entry Standards

Entry Standards

Demonstrate control of verb tenses in active and passive voice, gerunds and infinitives, conditionals real and unreal, adjective, noun, and adverb clauses, and transitional expressions.

Comprehend multi-paragraph reading passages in textbooks.

Course Limitations

Cross Listed or Equivalent Course

Specifications

Methods of Instruction

Methods of Instruction	Lecture
Methods of Instruction	Laboratory
Methods of Instruction	Multimedia
Methods of Instruction	Demonstrations

Out of Class Assignments

- Lab simulations
- Written assignments (e.g. welding log)

Methods of Evaluation	Rationale
Exam/Quiz/Test	Five regularly scheduled one-hour examinations
Exam/Quiz/Test	One two-hour final examination (written and objective)
Exam/Quiz/Test	Nineteen regularly scheduled practical tests for each area covered in class

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
Bowditch, William A.	Welding Fundamentals	Goodheart-Willcox	2022	978-1-64564-693-8

Other Instructional Materials (i.e. OER, handouts)

No Value

Materials Fee

No value

Learning Outcomes and Objectives

Course Objectives

Perform oxy-fuel welding in all positions and oxy-fuel cutting and brazing, plasma arc cutting.

Identify and apply safety precautions involved in the proper use of oxy-fuel and related equipment.

Evaluate and critique the finished welding exercises.

Perform destructive and non-destructive testing on specific weld joints done in all positions.

Communicate a working knowledge of the use of general shop equipment such as: band saw, drill press, metal cutting shears, radiograph cutter, pedestal and portable grinders, electricwire brush, and various hand tools.

SLOs

Demonstrate proper safety and set-up of welding equipment when working in a welding environment. Expected Outcome Performance: 70.0

ILOs Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
WELD Welding - Certificate	complete introductory and advanced level welding projects using various techniques and procedures.
WELD Welding - A.S. Degree Major	complete introductory and advanced level welding projects using various techniques and procedures.

Identify various types of personal protection used with equipment and limitations. Expected Outcome Performance: 70.0

ILOs Core ILOs	Communicate clearly, ethically, and creatively; listen actively and engage respectfully with others; consider situational, cultural, and personal contexts within or across multiple modes of communication.
	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
WELD Welding - A.S. Degree Major	complete introductory and advanced level welding projects using various techniques and procedures.
WELD Welding - Certificate	complete introductory and advanced level welding projects using various techniques and procedures.

Perform basic manipulative techniques used in oxy-fuel welding and cutting operations. Expected Outcome Performance: 70.0

ILOs Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.

WELD Welding - A.S. Degree Major	complete introductory and advanced level welding projects using various techniques and procedures.
WELD Welding - Certificate	complete introductory and advanced level welding projects using various techniques and procedures.

Additional SLO Information

Does this proposal include revisions that might improve student attainment of course learning outcomes?

No

Is this proposal submitted in response to learning outcomes assessment data?

No

If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.

No Value

SLO Evidence

No Value

Course Content

Lecture Content

Welding Methods (4 hours)
- Methods classified as forge or fire-resistance arc, metallic arc, shielded gas, fusion

Oxyacetylene (10 hours)
- Definition and procedure
- Oxyacetylene flame and types and uses
- Torch maintenance, regulators
- Welding rods, types and alloys
- Common defects, gas inclusion, blow holes
- Various position, flat, overhead, fillets, tubing
- A.W.S. safety rules
- A.W.S. welding rod code

Thermit Welding (4 hours)
- Definition and uses
- Reaction of thermit, procedure, allowance for contraction

Total hours: 18

Laboratory/Studio Content

Unionmelt Welding (6 hours)
- Definition and uses
- Application

Welding Sheet Metal (6 hours)
- Arc welding, gas, resistance
- Fluxes, bronze welding

Spot Welding (6 hours)
- Types, procedures
- Ignition control minimum current

Electric welding (6 hours)

- Classification, electrodes, tables
- Current determination, selection of polarity, damp electrodes
- Position of the weld, types of welding joints
- Recommended safety rules
- Preparation of the work, arc blow

Welding aluminum (6 hours)
- Commercial methods and practices
- Oxyacetylene, oxy-hydrogen
- Casting, sheets

Oxyacetylene Cutting (6 hours)
- Cutting torch, cutting procedure
- Cutting cast iron, machine cutting

Brazing (6 hours)
- Definition, codes
- Process of brazing, heating methods
- Hard soldering (silver brazing)
- Induction brazing, definition

Metals (6 hours)
- Study of metals commonly used in industry
- Physical properties, tensile, elongation, elastic malleable, hardness
- Testing of plates on Power equipment

Test Plates (6 hours)
- 20 test plates in various positions

Total hours: 54

Additional Information

Is this course proposed for GCC Major or General Education Graduation requirement? If yes, indicate which requirement in the two areas provided below.

No

GCC Major Requirements

No Value

GCC General Education Graduation Requirements

No Value

Repeatability

Not Repeatable

Justification (if repeatable was chosen above)

No Value

Resources

Did you contact your departmental library liaison?

Yes

If yes, who is your departmental library liason?

Adina Lerner (Technology & Aviation, Visual & Performing Arts)

Did you contact the DEIA liaison?

Yes

Were there any DEIA changes made to this outline?

No

If yes, in what areas were these changes made:

No Value

Will any additional resources be needed for this course? (Click all that apply)

- No

If additional resources are needed, add a brief description and cost in the box provided.

No Value