

WELD125 : Advanced Welding Procedures

General Information

Author:	<ul style="list-style-type: none">Curtis G Potter
Course Code (CB01) :	WELD125
Course Title (CB02) :	Advanced Welding Procedures
Department:	WELD
Proposal Start:	Spring 2025
TOP Code (CB03) :	(0956.50) Welding Technology
CIP Code:	(48.0508) Welding Technology/Welder.
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000591483
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 125 is advanced welding procedures and practices for experienced students or industrial workers who wish to improve and update their manipulative skills or prepare for a specific certification in shielded metal arc welding (SMAW), tungsten inert gas, or metal inert gas welding.
Justification:	Mandatory Revision
Academic Career:	<ul style="list-style-type: none">Credit
Mode of Delivery:	
Author:	Curtis G Potter
Course Family:	

Academic Senate Discipline

Primary Discipline:	<ul style="list-style-type: none">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)** 1**Maximum Credit Units (CB06)** 1**Total Course In-Class (Contact) Hours** 54**Total Course Out-of-Class Hours** 0**Total Student Learning Hours** 54**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.

 Variable Credit Course**Funding Agency Category (CB23)**

Not Applicable.

 Cooperative Work Experience
 Education Status (CB10)
Weekly Student Hours

	In Class	Out of Class
Lecture Hours	0	0
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	0
Laboratory	54
Studio	0
Total	54

Course Out-of-Class Hours

Lecture	0
Laboratory	0
Studio	0
Total	0

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

Prerequisite

WELD117 - Introduction To Welding (in-development)

Objectives

- Perform oxy-fuel welding in all positions and oxy-fuel cutting and brazing, plasma arc cutting.
- Perform destructive and non-destructive testing on specific weld joints done in all positions.

OR

Prerequisite

WELD121 - Occupational Welding I (in-development)

Objectives

- Perform manipulative skills in oxy-fuel welding, cutting, brazing, and shielded metal arc welding, and plasma arc cutting.
- Demonstrate a working knowledge of oxy-fuel, welding and cutting equipment, shielded metal arc welding equipment, plasma arc cutting equipment and their theories.
- Critique and evaluate weldments after properly performing a series of destructive tests on the samples.
- Demonstrate proper safety precautions in the use of oil oxy-fuel and shielded metal arc welding equipment.
- Write and compile a general welding notebook to be used as a reference guide for related classes.
- Show a general knowledge of basic metallurgy, welding terms and metal identification.

Entry Standards

Entry Standards

Course Limitations

Cross Listed or Equivalent Course

Specifications

Methods of Instruction

Methods of Instruction Lecture

Methods of Instruction Laboratory

Methods of Instruction Demonstrations

Methods of Instruction Guest Speakers

Out of Class Assignments

- Write an essay describing the process used to complete final project
- Final project (e.g. 3/8 vee-groove in the flat position)
- Peer analyze welding assignments

Methods of Evaluation

Rationale

Exam/Quiz/Test	Ongoing weld specimen testing procedure designed to produce quality weldments of certification status
Exam/Quiz/Test	Tensile testing, guided bend testing, and visual examination by the instructor
Exam/Quiz/Test	Written final examination
Exam/Quiz/Test	Final project (e.g. 3/8 vee-groove in the vertical position)

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
William A. Bowditch, Kevin E. Bowditch, Mark A. Bowditch	Welding Fundamentals	G-W	2022	9781645646938
Other Instructional Materials (i.e. OER, handouts)				
No Value				
Materials Fee				
No value				

Learning Outcomes and Objectives

Course Objectives

Perform manipulative welding exercises necessary to update skills in that area of concentration, welding process.

Simulate a certification test in the specific welding process, start to finish testing procedures.

Evaluate the performance test through testing and weld analysis.

Explain and employ safety equipment and protocols for welders.

SLOs

Examine and perform safely while evaluating personal performance in testing and weld analysis.

Expected Outcome Performance: 70.0

ILOs
Core ILOs

Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.

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.

Choose appropriate techniques or processes necessary to update welding skills.

Expected Outcome Performance: 70.0

ILOs
Core ILOs

Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.

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

demonstrate the skills necessary to read engineering drawings, solve technical mathematics problems as they relate to welding tasks.

WELD demonstrate the skills necessary to read engineering drawings, solve technical mathematics problems as they relate to
Welding - Certificate welding tasks.

Evaluate personal performance in weld testing and weld analysis.

Expected Outcome Performance: 70.0

ILOs
Core ILOs Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.

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

Practice ethical and responsible behavior within personal, academic, professional, social, and societal contexts; recognize and welcome diverse lifestyle choices that promote physical, intellectual, psychological, and social well-being.

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

demonstrate the skills necessary to read engineering drawings, solve technical mathematics problems as they relate to welding tasks.

WELD
Welding - A.S.
Degree Major demonstrate the skills necessary to read engineering drawings, solve technical mathematics problems as they relate to welding tasks.

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

No value

Laboratory/Studio Content

Oxyacetylene Welding Processes (10 hours)

- Flame cutting
- Brazing
- Welding procedures

Metallic Arc Welding Processes (13 hours)

- Machine and accessories
- Electrodes
- Electrode manipulation

Tungsten Inert Gas Welding Processes (13 hours)

- Machine and Accessories
- Tungsten electrodes

- Inert gases (Shielding gases)

Metal Inert Gas Welding Procedures (10 hours)

- Machine and accessories
- Electrode wires
- Electrode manipulation and procedures

Certification Procedures for Structural Steel (8 hours)

- Written examinations,
- Practical welding examination information and practice

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?

No

If yes, who is your departmental library liaison?

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

Did you contact the DEIA liaison?

No

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