



Course Information

Course Title	Intermediate Shielded Metal Arc Welding
Course Prefix, Num. and Title	WLDG 1457
Division	Vocational Science: Welding Technology
Department	Welding Technology
Course Type	WECM Course
Course Catalog Description	A study of the production of various fillets and groove welds. Preparation of specimens for testing in various positions.
Pre-Requisites	WLDG 1428
Co-Requisites	none

Semester Credit Hours

Total Semester Credit Hours (SCH): Lecture Hours:	4:3:4
Lab/Other Hours	
Equated Pay Hours	5
Lab/Other Hours Breakdown: Lab Hours	4
Lab/Other Hours Breakdown: Clinical Hours	Enter Clinical Hours Here.
Lab/Other Hours Breakdown: Practicum Hours	Enter Practicum Hours Here.
Other Hours Breakdown	List Total Lab/Other Hours Here.

Approval Signatures

Title	Signature	Date
Prepared by:		
Department Head:		
Division Chair:		
Dean/VPI:		
Approved by CIR:		

Additional Course Information

Topical Outline: Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

Learn the proper use of electrodes and amperage settings for various thicknesses of materials and welding positions, principles of arc welding, and interpret electrode classifications.

Course Learning Outcomes:

- Identify principles of arc welding
- Describe arc welding operations of fillet and groove joints
- Explain heat treatments of low alloy steels
- Explain weld size and profiles
- Prepare test plates
- Perform fillet welds in the overhead position
- Perform air carbon arc weld removal
- Perform bevel groove welds with backing plates in various positions
- Demonstrate use of tools and equipment
- Explain shop safety rules, safety rules for tools and equipment, and personal safety
- Explain importance of a Material Safety Data sheet (MSDS)
- Distinguish between qualification and certification procedures
- Discuss problems of welding disconnects
- Pass a bend and x-ray test as required by AWS Procedures and Standards

Methods of Assessment:

- Attend demonstrations of how to safely plan laboratory activities before starting work.
- Make oxy/acetylene cutting and beveling operations using gas equipment in preparation for arc welding.
- Apply industry standards to become familiar with certification welds.
- Understand shrinking and distortion problems that occur with certain metals.
- Prepare coupons, perform F1 (flat) open V-butt root pass, hot pass, filler and cover pass. Select proper electrode for each procedure.
- Prepare coupons, perform F2 (horizontal) open butt with 1/8" E6010 electrode root pass, hot pass, 3/32" E7018 electrode fill and cap.

- Perform F3 (vertical) T-joint 1/8" E6010 electrode root and hot pass welds uphill.
- Perform F3 (vertical) open butt welds downhill. Select proper electrode for each pass.
- Perform F4 (overhead) open V-butt.
- Prepare specimens and test welds.
- Demonstrate acquired skills of all lab assignments through a practical final examination

Required text(s), optional text(s) and/or materials to be supplied by the student:

Welding Fundamentals

Suggested Course Maximum:

20

List any specific or physical requirements beyond a typical classroom required to teach the course.

none

Course Requirements/Grading System: Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

AWS Assignments 40%
 Laboratory Assignments 40%
 Final Exam 20%
 Total 100%

Curriculum Checklist:

- Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.
- Administrative WCJC Core Course.** Attach the Core Curriculum Review Forms
 - Critical Thinking
 - Communication
 - Empirical & Quantitative Skills
 - Teamwork
 - Social Responsibility
 - Personal Responsibility
- WECM Course** -If needed, revise the Program SCANS Matrix and Competencies Checklist