

# COURSE OUTCOME MATRIX

## COURSE SYLLABUS

### PART 2 of 3

Course Number and Title	WL 264 ADVANCED GAS METAL ARC WELDING (GMAW)
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Credit Hours	3
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Course Description	Advanced topics in GMAW welding, including welding in various positions and directions on plate and pipe with .035, .045 and inner shield wire with various shielding gases. Training is provided with dual shield and submerged arc welding (SAW). The student will exhibit expertise in various welding positions on pipe; describe safety rules and equipment used; and describe the effects of welding parameters in GMAW. The student will weld various joint designs and diagnose welding problems and perform visual inspection.
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Prerequisite(s) and/or Corequisite(s)	WL 201 – Gas Metal Arc Welding (GMAW)
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**Required Textbooks/References/Course Materials:**

Modern Welding Lab Workbook	12th	Althouse, Andrew D.	Goodheart-Wilcox Co.	1635636876
Modern Welding	12th	Althouse, Andrew D.	Goodheart-Wilcox Co.	1635636868

General Education Outcomes	
1	Utilize written and verbal language to discuss and comprehend information, incorporating a variety of technologies, such as text, data, and images (written language, verbal language, and information technology).
2	Identify and interpret relevant information in order to formulate an opinion or conclusion (critical thinking).
3	Demonstrate and communicate computational methods and mathematical reasoning in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate) (quantitative literacy and fluency).
4	Communicate in appropriate ways with those who are culturally diverse (intercultural competence).

Program/Department Outcomes	
1	Prepare students to become safe and competent welders
2	Provide opportunities to possess communication and critical thinking skills
3	Demonstrate responsible professional conduct and behavior
4	Effectively communicate
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	Course Outcomes (CO)	Bloom's Domain for CO (C, A, P), Category, and Level	Program/Department Outcome(s)	Written Language	Verbal Language	Information Technology	Critical Thinking	Quantitative Literacy and Fluency	Intercultural Competence
1	Ensure that safety aspects of welding processes and practices are understood and followed	C- Understanding (2)	1,2,3,4	0	1	0	1	0	0
2	Define welding terms and contrast the various GMAW metal transfers considering arc characteristics, weld characteristics, and out of position welds	C- Understanding (2)	1,2,3,4	0	1	0	1	1	0
3	Understand and demonstrate method: T-butt using GMAW short circuit transfer (all positions), globular transfer F1 and F2, and spray transfer F1 and F2	P- Perfect (3)	1,2,3,4	0	1	0	1	1	0
4	Understand and demonstrate method: open groove weld on 4" pipe utilizing short circuit transfer 3-pass method in 6G position	P- Perfect (3)	1,2,3,4	0	1	0	1	1	0
5	Understand and demonstrate method: open groove weld on 3/8" plate in 2G, 3G, and 4G position	P- Perfect (3)	1,2,3,4	0	1	0	1	1	0
6	Distinguish between qualification and certification procedures	C- Understanding (2)	1,2,3,4	0	1	0	1	1	0
7									
8									
9									
10									

Bloom's Domain Legend

C = Cognitive  
A = Affective  
P = Psychomotor

General Education Outcome Legend

2 = Included and Measurable  
1 = Introduced and/or Minimally Addressed and Not Measurable  
0 = Not included

Approved: May 2021  
Reviewed: November 11, 2021