

Advanced Gas Metal Arc Welding

WLDG-2447

Summer I 2021 Section 100 CRN-31217 4 Credits 06/07/2021 to 08/09/2021 Modified 06/01/2021

Meeting Times

Lecture/Lab

Monday, Wednesday, 7:45 AM to 12:05 PM, 1244 7th street, Bryan Texas

Contact Information

Description

3 lecture hours and 3 lab hours per week; 96 total contact hours. Credit: 4 semester hours.

Advanced topics in Gas Metal Arc Welding (GMAW). Includes welding in various positions and directions.

Requisites

Prerequisites: WLDG 1425

Core Curriculum Statement

This course is not a core curriculum course.

Outcomes

- Demonstrate proficiency in various welding positions
- Describe safety practices and equipment use
- Describe the effects of welding parameters in GMAW
- Weld various joint designs and perform appropriate inspection

Materials

National Center for Construction Education and Research (NCCER) Welding Level II, 5th Edition

Appropriate PPE required for welding in the Welding lab.

Read below under course policies

Course Requirements

Evaluation

Written Assessments

Performance Assessments

Breakdown

National Center for Construction Education and Research (NCCER) Curriculum, Welding Level 3, 5th Edition, Module 29302 and 29303.

Students will be examined on each of these two modules. Students must receive a 70 for a passing grade.

Criteria

Blinn College Policies

All policies, guidelines, and procedures in the [Blinn College Catalog \(http://catalog.blinn.edu/\)](http://catalog.blinn.edu/), [Blinn College Board Policies \(http://pol.tasb.org/Home/Index/1204\)](http://pol.tasb.org/Home/Index/1204), and the [Blinn College Administrative Regulations \(https://www.blinn.edu/administrative-regulations/\)](https://www.blinn.edu/administrative-regulations/) are applicable to this course.

[Specific information on civility, attendance, add/drop, scholastic integrity, students with disabilities, final grade appeal, alternative retailers, campus carry and proctoring arrangements and cost. \(http://www.blinn.edu/syllabus-policies/\)](http://www.blinn.edu/syllabus-policies/)

Notice of any action taken under these protocol and procedures, by Blinn College or its employees, may be delivered by hand, through the U.S. Postal Service, or electronically to the student's Blinn Buc e-mail account. Notice shall be deemed received upon actual receipt, on deposit in the U.S. Mail, or upon entering the information processing system used by Blinn College for Blinn Buc e-mail accounts, whichever first occurs.

Information about the changes Blinn has made to the May Minimester, Summer I, and Summer II semesters: [Back with Blinn \(https://www.blinn.edu/back-with-blinn/index.html\)](https://www.blinn.edu/back-with-blinn/index.html).

* Course Policies

[Please read: May Minimester, Summer I, and Summer II 2021 General Classroom Procedures. \(http://www.blinn.edu/back-with-blinn/course-policies.html\)](http://www.blinn.edu/back-with-blinn/course-policies.html)

Schedule

| When | Topic | Notes |
|---|--------------------------------------|---|
| Lecture /Lab Week 1 Day 1 06/07/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Safety review and class expectations | Lab time will include how to safely use GMAW welding equipment and thorough review of lab expectations, including expectations for cleaning and resetting lab for the next class. |

| When | Topic | Notes |
|---|--|---|
| Lecture /Lab Week 1 Day 2 06/09/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Module 29302/ Weld 1g-4g open bevel welds | Review 1G - 4G open groove welds Teach from 29302 Welding 5th edition Level 2 |
| Lecture /Lab Week 2 Day 1 06/14/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Set up an perform 1G rotated position welds according to AWS and ASME codes. | Teach on the dangers of long term exposure to Silicon and manganese which are often used in the welding field. Set up coupons in the 1G rotated position, set up and tack is required with instructor to inspect before continuing |
| Lecture /Lab Week 2 Day 2 06/16/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Practice 1G pipe welds. Continue teaching from 29302.Cut pipe coupons with the assigned bevels for performing GMAW pipe welds in the 2G position. | Go over the different codes which welders are required to adhere to within the US and around the world. |
| Lecture /Lab Week 3 Day 1 06/21/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Perform GMAW welds in the 2G fixed position using AWS test procedures. | Explain the importance all fully breaking down the walls on the root pass of a 2G rotated weld and show the class how to get full penetration, breaking down both the top and bottom walls. |
| Lecture /Lab Week 3 Day 2 06/23/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Perform a 2G fix position AWS weld test and prepare pipe coupons for welding in the 5G fixed position using AWS Weld test procedures. | Lecture on the four different modes you can Weld in GMAW, short circuit globular, spray and pulse. |

| When | Topic | Notes |
|---|--|---|
| Lecture /Lab Week 4 Day 1 06/28/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Perform a GMAW Weld in the 5G fixed position using AWS Weld test procedures. Cut pipe coupons to the assigned bevels for performing GMAW pipe welds in the 6G position | 29302 Written exam administered |
| Lecture /Lab Week 4 Day 2 06/30/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Perform a GMAW Weld in the 6G fixed position using AWS Weld test procedures | Ensure that class understands what is required to successfully test out on a pipe test with GMAW. |
| Lecture /Lab Week 5 Day 1 07/05/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Start module 29303. Develop skills through successfully perform a 5G FCAW rotated pipe Weld | Demonstrate how to successfully prep a pipe for welding both the root pass and the fill/cap on a 5G weld |
| Lecture /Lab Week 5 Day 2 07/07/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Perform FCAW Weld in the rotated position using AWS Weld test procedures | Successfully print and tack up pipe in the 5G position. After feathering the tack have your instructor grade the fit up and get ready to weld it. |
| Lecture /Lab Week 6 Day 1 07/12/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Perform FCAW weld in the 1G rotated position using AWS weld test procedures. Prep coupons for FCAW pipe and the 2G position | From personal experience, lecture on some of the difficulties the Instructor has had when welding FCAW pipe, and how he/ she overcame them. |

| When | Topic | Notes |
|---|---|--|
| Lecture /Lab Week 6 Day 2 07/14/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Perform FCAW weld in the 2G fixed position using AWS weld test procedures | Lecture on Inductance and slope and how this has an effect on different pipe schedules, and why you can use pulse when welding a 5G pipe but not with Spray Transfer |
| Lecture /Lab Week 7 Day 1 07/19/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Perform FCAW weld in the 5G fixed position using AWS weld test procedures | Cut and bevel a 6g pipe weld by hand. Tack it up and have it's quality inspected by your Instructor |
| Lecture /Lab Week 7 Day 2 07/21/2021 7:45 AM - 12:05 PM 1244 7th street, Bryan ,Texas | Perform FCAW weld in the 5G fixed position using AWS weld test procedures | Lecture on some of what the differences between 5G and 6G GMAW pipe welding are. |
| Lecture /Lab Week 8 Day 1 1244 7th street, Bryan ,Texas | Perform FCAW weld in the 6G fixed position using AWS weld test procedures | Review the first half of Module 29302. Students should have been studying this material at home following E campus instructions. |
| Lecture /Lab Week 8 Day 2 1244 7th street, Bryan ,Texas | Perform FCAW weld in the 6G fixed position using AWS weld test procedures | Continue welding 6g weld test paying particular attention to your starts and stops in the root pass |