

**JAMESTOWN COMMUNITY COLLEGE**  
**State University of New York**

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**INSTITUTIONAL COURSE SYLLABUS**

**Course Title:** Adv Gas Metal Arc Welding

**Course Abbreviation and Number:** WLD 2260

**Credit Hours:** 3

**Course Type:** Lecture/Lab

**Course Description:** Advanced gas metal arc welding practices and power source technology, including programmable and pulsing constant voltage machines, will be used. Machine set-up and techniques for nonferrous metals, including aluminum and stainless steel, will be practiced. Advanced arc welding techniques will be performed in the flat, horizontal, vertical, and overhead positions on structural plate. Identifying and analyzing defects in welding joints is emphasized. Carbon steel plate is welded using Gas Metal Arc Welding (GMAW) to American Welding Society (AWS) Code. Students will develop skills necessary to make quality welds on carbon steel pipe with open root and with backing rings according to AWS, American Society of Mechanical Engineers (ASME), and American Petroleum Institute (API) code.

Prerequisite: WLD 1360; Eligibility: MAT 1590.

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**Student Learning Outcomes:**

Students who demonstrate understanding can:

1. Demonstrate an ability to make multiple pass welds in all positions.
  2. List specific types of weld joints as well as their structural application.
  3. Explain how to prepare, test, and evaluate guided bend specimens.
  4. Demonstrate an ability to make code quality welds in plate and pipe.
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**Topics Covered:**

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| 1.) Multiple pass welds.<br>- Root pass<br>- Hot pass<br>- Filler pass<br>- Multiple pass weld<br>- Cover pass | 2.) GMAW of Plate<br>- Preparation<br>a.) Weld groove<br>b.) Back Gouging<br>c.) Specimens for testing<br>- Restarting a weld bead<br>- Preheating and Postheating | 3.) Pipe<br>- Preparation and fitup<br>- Joint Design<br>- Codes and standards<br>- Practice Welds<br>- 2G positions<br>- 5G positions<br>- 6G positions |
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**Information for Students**

- Expectations of Students
  - [Civility Statement](#)
  - [Student Responsibility Statement](#)
  - [Academic Integrity Statement](#)
- [Accessibility Services](#)  
Students who require accommodations to complete the requirements and expectations of this course because of a disability must make their accommodation requests to the Accessibility Services Coordinator.
- [Get Help: JCC & Community Resources](#)
- [Emergency Closing Procedures](#)
- Course grade is determined by the instructor based on a combination of factors, including but not limited to, homework, quizzes, exams, projects, and participation. Final course grade can be translated into a grade point value according to the following:

A=4.0	B+=3.5	B=3	C+=2.5	C=2	D+=1.5	D=1	F=0
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- Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, VA appointments) are welcome and encouraged to communicate these to the instructor.
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**Effective Date:** Fall 2021