

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

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**INSTITUTIONAL COURSE SYLLABUS**

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

**Course Abbreviation and Number:** WLD 2270

**Credit Hours:** 3

**Course Type:** Lecture/Lab

**Course Description:** Advanced study and practice of the gas tungsten arc welding process are emphasized. Advanced joint designs are mastered on carbon steel, aluminum, and stainless steel. A required American Welding Society Workmanship sample will be fabricated and welded. Students will also weld GTAW on pipe according to ASME (American Society of Mechanical Engineers) procedures. Theory and practice of GTAW on ferrous and non-ferrous metals in all positions will be covered. Upon completion, students should be able to perform GTAW welds with prescribed electrodes and filler materials on various joint geometries.

Prerequisite: WLD 1370; 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. <ul style="list-style-type: none"><li>- Root pass</li><li>- Hot pass</li><li>- Filler pass</li><li>- Multiple pass weld</li><li>- Cover pass</li></ul>                           | - Restarting a weld bead<br>- Preheating and Postheating   |
| 2.) GTAW of Plate <ul style="list-style-type: none"><li>- Preparation<ol style="list-style-type: none"><li>a.) Weld groove</li><li>b.) Back Gouging</li><li>c.) Specimens for testing</li></ol></li></ul> | 3.) Pipe Three Inch <ul style="list-style-type: none"><li>- Preparation and fitup</li><li>- Joint Design</li><li>- Codes and standards</li><li>- Practice Welds</li><li>- 2G positions</li><li>- 5G positions</li><li>- 6G positions</li></ul> |
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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