



# **INSTRUCTIONAL PACKAGE**

WLD 106

Gas and Arc Welding

Effective Term

Fall 2024/Spring 2025/Summer 2025

## **PART I: COURSE INFORMATION**

Effective Term: Fall 2024/Spring 2025/Summer 2025

COURSE PREFIX: WLD 106

COURSE TITLE: Gas and Arc Welding

CONTACT HOURS: 8.0

CREDIT HOURS: 4.0

### **RATIONALE FOR THE COURSE:**

WLD 106 is a required course in the Advanced Welding Technology Program. WLD 106 will cover safety procedures and cutting techniques for Oxyfuel Cutting and welding techniques associated with the Shielded Metal Arc Welding process.

### **COURSE DESCRIPTION:** WLD 106 – Gas and Arc Welding

This course covers the basic principles and practices of oxyacetylene welding, cutting, and electric arc welding. Emphasis is placed on practice in fundamental position welding and safety procedures.

### **PREREQUISITES/CO-REQUISITES:**

COMPASS Reading 54, and Compass Pre-Algebra 40 Accuplacer Reading Comp032 and Accuplacer Arithmetic 043 or Accuplacer Elementary Algebra 057

**\*Online/Hybrid** courses require students to complete the DLI Online Student Orientation prior to completing an online course. The DLI Online Student Orientation can be found in WaveNet, under the My Student tab.

### **REQUIRED MATERIALS:**

Textbook required (Welding Principles and Applications 8<sup>th</sup> edition By Larry Jeffus). Welding Equipment tool kit.

Please visit the Bookstore online site for most current textbook information. Use the direct link below to find textbooks.

[BOOKSTORE.](#)

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

### **ADDITIONAL REQUIREMENTS:**

Basic writing supplies, computer access on and off campus. You must be able to have access to D2L and check it regularly. I will use this platform to communicate with you regarding classroom conversations, schedule and more. Class cancellation, assignment due dates and class updates will always be posted on D2L.

### **TECHNICAL REQUIREMENTS:**

Access to Desire2Learn (D2L), HGTC's learning management system (LMS) used for course materials.

Access to myHGTC portal for student self-services.

College email access – this is the college's primary official form of communication.

## **STUDENT IDENTIFICATION VERIFICATION**

Students enrolled in online courses will be required to participate in a minimum of one (1) proctored assignment and/or one (1) virtual event to support student identification verification. Please refer to your Instructor Information Sheet for information regarding this requirement.

## **CLASSROOM ETIQUETTE:**

No cell phones, iPads or computers unless instructed to use them for a project in class. You will be asked to leave if you can't abide by these rules, and if you are asked to leave, it will be counted as a half absence.

## **Part II: Student Learning Outcomes**

### **COURSE LEARNING OUTCOMES and ASSESSMENTS\*:**

List Assessments and Learning Outcomes for each module.

1. During all laboratory periods each student will apply the safety procedures associated with welding, cutting, and related activities as described in the ANSI Z49.1 Safety in Welding, Cutting.
2. Each student will perform safety inspections of their personal protective equipment and clothing, welding equipment and accessories, required tools and the work area prior to beginning lab activities.
3. Make minor repairs to Oxyfuel cutting equipment, shielded metal arc welding equipment and accessories.
4. Set up equipment for Oxyfuel cutting and shielded metal arc welding operations.
5. Clean and prepare base metal for cutting and welding.
6. Set the Oxyfuel to correct pressures and the welding machine on the correct polarity for Shielded Metal Arc Welding
7. Produce Oxyfuel straight line, bevel cuts and produce surface welds on carbon steel in the flat, horizontal, vertical and overhead positions using E-6010, and E-7018 electrodes.

Surface welds to be evaluated by visual inspection methods to comply with American Welding Society weld inspection standards.

Without the use of references, each student will accomplish the following objectives with a minimum of 80% accuracy.

8. Identify safety hazards associated with Oxyfuel cutting and shielded metal arc welding related operations.
9. Identify and explain Oxyfuel gases and welding electrical current.
10. Identify and explain Oxyfuel cutting equipment and arc welding machines.
11. Explain setting up Oxyfuel equipment and arc welding equipment.
12. Identify and explain tools for cutting weld cleaning metal.
13. Identify and explain AWS/ASME filler metal classification system.
14. Identify and explain different types of filler metal.
15. List the purposes of electrode coverings/fluxes.

16. Identify and explain the relationship of filler metal classification to welding current.
17. Explain considerations for selecting electrodes.
18. Explain the storage and control of filler metals.
19. Explain filler metal traceability requirements.
  
20. Explain how to use applicable code requirements.
21. Explain the effects of the following variables/essentials on a weld:
  - \* Oxyfuel Cutting Equipment
  - \* Amperage
  - \* Speed of Travel
  - \* Arc Length
  - \* Electrode Angle
  - \* Travel/Lead Angle
  - \* Work Angle

**RECOMMENDED READING AND LAB ASSIGNMENTS:**

(Instructor may modify schedule as required to meet the course objectives)

Welding Principles and Applications, Textbook

Section One: Safety in Welding

Lecture/ Read Chapter 2: Safety in Welding

Section Six: Oxyfuel Processes

Lecture/Read Chapter 31: Oxyfuel Welding and Cutting Equipment, Setup and operation.

Section Two: Shielded Metal Arc Welding

Read Chapter 3: Shielded Metal Arc Equipment, Set-up, and Operation

Week 1-2      Orientation / Safety in Welding

Week 3        **SAFETY TEST**

Week 3 - 6      Oxyfuel Torch Setup/ Oxyfuel Straight Line, bevel cuts /1F surface welds E6010, E7018 stringer beads

Week 7        **1F TEST**

Week 7- 10    2F E6010/ E7018 surface beads

Week 10       **2F TEST**

Week 11 -15   3F / 4F E6010 / E7018 surface beads

**3F / 4F TEST**

*\*Students – please refer to the Instructor’s Course Information sheet for specific information on assessments and due dates.*

**INSTRUCTOR’S COURSE INFORMATION SHEET**

**Instructor Information**

<b>Instructor Name:</b>	<i>Brian Muldowney</i>
<b>Campus Phone Number:</b>	<i>843-349-3639</i>
<b>College Email Address:</b>	<i>Brian.muldowney@hgtc.edu</i>
<b>Office Location:</b>	<i>124 2000c</i>
<b>Office Hours/Availability:</b>	<i>TBD</i>

## Part III: Grading and Assessment

### EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS\*

Students' performance will be assessed and the weight associated with the various measures/artifacts are listed below.

Lab Assignments                    **100%**

***\*Students, for the specific number and type of evaluations, please refer to the Instructor's Course Information Sheet.***

### GRADING SYSTEM:

State the College's or departmental grading system as delineated in the Catalog. Please note the College adheres to a 10 point grading scale A = 100 – 90, B = 89- 80, C = 79 – 70, D = 69 – 60, F = 59 and below. You must have your Dean's approval if changes in the scale are made.

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the academic calendar for deadlines for add/drop ([ACADEMIC CALENDAR](#)). You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

## Part IV: Attendance

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of eighty percent (80%) of his or her classes in order to be eligible to receive credit for any course. However, due to the varied nature of courses taught at the College, a more rigid attendance policy may be required by individual instructors. At a minimum, a student may be withdrawn from a course(s) after he or she has been absent in excess of ten percent (10%) of the total contact hours for a course. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

**For online and hybrid courses**, check your Instructor's Course Information Sheet for any required on-site meeting times. Please note, instructors may require tests to be taken at approved testing sites, if you use a testing center other than those provided by HGTC, the center may charge a fee for its services.

## Part V: Student Resources



### The Student Success and Tutoring Center (SSTC)

The SSTC offers to all students the following **free** resources:

1. **Academic coaches** for most subject areas, **Writing Center Support**, and **college success skills**.
2. **On-line student success and academic support resources**.

Visit the [Student Success & Tutoring Center](#) website for more information. To schedule tutoring, contact the SSTC at [sstc@hgtc.edu](mailto:sstc@hgtc.edu) or self-schedule in the Penji iOS/Android app or at [www.penjiapp.com](http://www.penjiapp.com). Email [sstc@hgtc.edu](mailto:sstc@hgtc.edu) or call SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455, or go to the [Online Resource Center](#) to access on-demand resources.



### . STUDENT INFORMATION CENTER: TECH Central

TECH Central offers to all students the following **free** resources:

1. **Getting around HGTC:** General information and guidance for enrollment, financial aid, registration, and payment plan support!
2. Use the [Online Resource Center \(ORC\)](#) including Office 365 support, password resets, and username information.
3. **In-person workshops, online tutorials and more services** are available in Desire2Learn, Student Portal, Degree Works, and Office 365.
4. **Chat with our staff on TECH Talk**, our live chat service. TECH Talk can be accessed on the student portal and on TECH Central's website, or by texting questions to (843) 375-8552.

Visit the [Tech Central](#) website for more information. Live Chat and Center locations are posted on the website. Or please call (843) 349 – TECH (8324), Option #2.

**Student Testing:** (If course is offered in multiple format include this section, delete if only F2F sections are offered.)

Testing in an **online/hybrid** course may be accomplished in a variety of ways:

- Test administered within D2L
- Test administered in writing on paper
- Test administered through Publisher Platforms

Further more tests may have time limits and/or require a proctor.

Proctoring can be accomplished either face-to-face at an approved site or online through RPNOW, our online proctoring service. To find out more about proctoring services, please visit the [Online Testing](#) section of the HGTC's Testing Center webpage.

The **Instructor Information Sheet** will have more details on test requirements for your course.

## **Disability Services**

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to HGTC's [Accessibility and Disability Service webpage](#). The Accessibility and Disability Services staff will review documentation of the student's disability and, in a confidential setting with the student, engage in an interactive process to develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided. Students will need to reach out to the Accessibility and Disability Services staff each semester to renew their accommodations.

## **COUNSELING SERVICES:**

HGTC Counseling Services strives to optimize student success through managing personal and academic concerns that may interfere with achieving educational goals. Staff are available to every student for assistance and guidance on personal matters, academic concerns and other areas of concern. HGTC offers free in-person and telehealth counseling services to students. For more information about counseling services, please reach out to [counseling@hgtc.edu](mailto:counseling@hgtc.edu) or visit the website the [Counseling Services webpage](#).

## **STATEMENT OF EQUAL OPPORTUNITY/NON-DISCRIMINATION STATEMENT:**

Horry-Georgetown Technical College shall not discriminate in employment or personnel decisions or in student admissions or in student decisions, or in all other segments of the College community on the basis of race, color, sex, national or ethnic origin, age, religion, disability, marital or family status, veteran status, political ideas, sexual orientation, gender identity, or pregnancy, childbirth, or related medical conditions, including, but not limited to, lactation, in the educational programs and activities which it operates, and the college is prohibited from discrimination in such manner by applicable laws. Practices and requirements for nondiscrimination extend to the enrollment of students in programs and activities of the College and employment by the College.

All inquiries regarding the federal laws as they relate to discrimination on the basis of sex may be directed to Tamatha Sells, Title IX Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107B, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5218, [tamatha.sells@hgtc.edu](mailto:tamatha.sells@hgtc.edu) or to the US Department of Education Office of Civil Rights. (Telephone: 800-421-3481/Email: [OCR@ed.gov](mailto:OCR@ed.gov)).

Other employee and applicant inquiries concerning the federal laws and their application to the

College may be directed to Jacquelyne Snyder, Vice President, Human Resources and Employee Relations & the College's Affirmative Action/Equal Opportunity Officer, Horry-Georgetown Technical College, Building 200C, Room 205B, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5212, [jacquelyne.snyder@hgtc.edu](mailto:jacquelyne.snyder@hgtc.edu).

Other student and prospective student inquiries concerning the federal laws and their application to the College or any student decision may be directed to Dr. Melissa Batten, Vice President, Student Affairs, Section 504 & Title II Coordinator Horry-Georgetown Technical College, Building 1100C, Room 107A, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5228, [melissa.batten@hgtc.edu](mailto:melissa.batten@hgtc.edu).

## **TITLE IX REQUIREMENTS:**

Title IX of the Education Amendments of 1972 protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination.

HGTC prohibits the offenses of domestic violence, dating violence, sexual assault, and stalking and will provide students, faculty, and staff with necessary information regarding prevention, policies, procedures, and resources.

Any student, or other member of the college community, who believes that they have been a victim of sexual harassment, domestic violence, dating violence, sexual assault, or stalking may file a report with the college's Title IX Coordinator or campus law enforcement\*.

\*Faculty and Staff are required to report these incidents to the Title IX Coordinator when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

For more information, contact Tamatha Sells, Title IX Coordinator, Conway Campus, Building 1100C, Room 107B, 843-349-5218, [tamatha.sells@hgtc.edu](mailto:tamatha.sells@hgtc.edu).

## **PREGNANCY ACCOMMODATIONS**

Under Title IX, colleges must not exclude a pregnant student from participating in any part of an educational program. Horry-Georgetown Technical College is committed to ensuring that pregnant students receive reasonable accommodations to ensure access to our educational programs.

Students should advise the Title IX Coordinator of a potential need for accommodations as soon as they know they are pregnant. It is extremely important that communication between student, instructors, and the Title IX Coordinator begin as soon as possible. Each situation is unique and will be addressed individually.

Title IX accommodations DO NOT apply to Financial Aid. Financial Aid regulations do not give the College any discretion in terms of Financial Aid eligibility.

Certain educational programs may have strict certification requirements or requirements mandated by



outside regulatory agencies. Therefore, in some programs, the application of Title IX accommodations may be limited.

To request pregnancy accommodations, please complete the [Pregnancy Intake Form](#).