



# **INSTRUCTIONAL PACKAGE**

WLD106

Gas and Arc Welding

Effective Term

Fall 2022/Spring 2023/Summer 2023

# INSTRUCTIONAL PACKAGE

## Part I: Course Information

Effective Term: Fall 2022

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:**

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 Orientation Video](#) prior to enrolling in an online course.

### **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.

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

### **ADDITIONAL REQUIREMENTS:**

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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 student portal for course materials.  
myHGTC and college email access.

### **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\*:**

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

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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.

#### **EVALUATION\***

Lab Assignments **100%**

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

### **GRADING SYSTEM:**

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. 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 80 percent (80%) of their classes in order to receive credit for any course. Due to the varied nature of courses taught at the college, some faculty may require up to 90 percent (90%) attendance. Pursuant to 34 Code of Federal Regulations 228.22 - Return to Title IV Funds, once a student has missed over 20% of the course or has missed two (2) consecutive weeks, the faculty is obligated to withdraw the student and a student may not be permitted to reenroll. **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, and 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 tutors** for most subject areas, **Writing Center support**, and **college success skills**.
2. Online **tutoring** and academic support resources.
3. Professional and interpersonal communication **coaching** in the EPIC Labs.

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 #1.

## **STUDENT TESTING:**

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 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 staff will review documentation of the student's disability and, in a confidential setting with the student, 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.

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

Horry-Georgetown Technical College prohibits discrimination and harassment, including sexual harassment and abuse, 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 educational programs and/or activities.

## **TITLE IX REQUIREMENTS:**

All students (as well as other persons) at Horry-Georgetown Technical College are protected by Title IX—regardless of their sex, sexual orientation, gender identity, part- or full-time status, disability, race, or national origin—in all aspects of educational programs and activities. Any student, or other member of the college community, who believes that he/she is or has been a victim of sexual harassment or sexual violence may file a

report with the college's Chief Student Services Officer, campus law enforcement, or with the college's Title IX Coordinator, or designee.

\*Faculty and Staff are required to report incidents to the Title IX Coordinators 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).

## **INQUIRIES REGARDING THE NON-DISCRIMINATION/TITLE IX POLICIES:**

**Student and prospective student** inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Vice President for Student Affairs.

**Dr. Melissa Batten, VP Student Affairs**

*Title IX Coordinator*

Building 1100, Room 107A, Conway Campus

PO Box 261966, Conway, SC 29528-6066

843-349-5228

[Melissa.Batten@hgtc.edu](mailto:Melissa.Batten@hgtc.edu)

**Employee and applicant** inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Vice President for Human Resources.

**Jacquelyne Snyder, VP Human Resources**

*EEO and Title IX Coordinator*

Building 200, Room 212A, Conway Campus

PO Box 261966, Conway, SC 29528-6066

843-349-5212

[Jacquelyne.Snyder@hgtc.edu](mailto:Jacquelyne.Snyder@hgtc.edu)