

SYLLABUS

**WLDG 2513  
WELDING USE MULTIPLE PROCESSES**

WELDING  
BRAZOSPORT COLLEGE  
LAKE JACKSON TEXAS

PREPARED BY: Ken Kaspar DATE: September 2015  
INSTRUCTOR

RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
DIVISION CHAIRMAN

RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
DEAN

*The Brazosport College District shall not discriminate against, or exclude from participation in any benefits or activities either on the staff or in the student body, any person on the grounds of sex, race, color, religion, national origin, age, or handicap.*

Brazosport College  
500 College Dr.  
Lake Jackson, Texas 77566

## **WLDG 2513 WELDING USE MULTIPLE PROCESSES**

### **COURSE DESCRIPTION:**

Instruction using layout tools and blueprint reading with demonstration and guided practices with some of the following welding processes: oxy-fuel gas cutting and welding, shield metal arc welding (SMAW), gas metal arc welding (GMAW), flux-cored arc welding (FCAW), gas tungsten arc welding (GTAW), or any other approved welding process (4 SCH, 2 lectures, 11 labs)

### **TEXT AND REFERENCES:**

NCCER Level 2 & 3

### **COURSE GOALS:**

Identify proper safety equipment and tools and identify and select the proper welding process for a given application. Demonstrate skills training using more than one approved welding process; demonstrate ability to analyze situations and make decisions using skills as taught concerning safety and electrode selections; and select the most economic and practical welding process for the given task.

Explain preheating, interpass temperature control & post heating procedures. Explain how to set up GTAW equipment for open-root V-groove welds on low alloy & stainless steel pipe. Explain how to prepare & make welding using GTAW on low alloy & stainless steel pipe in 2G, 5G, & 6G welding positions. Explain stainless steel metallurgy, how to select SMAW electrodes for stainless steel welds, & how to weld different types of stainless steel pipe. Explain how to prepare for & how to make open-root V-groove welds with GTAW equipment on low alloy & stainless steel pipe in the 2G, 5G, & 6G welding positions.

## STUDENTS WITH DISABILITIES

BC is committed to providing equal education opportunities to every student. BC offers services for individuals with special needs and capabilities including counseling, tutoring, equipment, and software to assist students with special needs. Please contact Special Populations Counselor, 979-230-3236 for further information.

## COURSE EVALUATION

Student grades will be assigned according to the following criteria:

LABS 40%

UNIT TESTS 30%

ATTENDANCE 20%

FINAL 10%

Grades of A through F will be assigned according to the chart below:

100-90 = A

89-80 = B

79-70 = C

69-60 = D

59-0 = F

## ATTENDANCE AND WITHDRAWAL POLICIES

### **CLASS WORK:**

Students are responsible for all class work assigned during any absence. Do not ask if you missed anything. If we had a class you missed something. The instructor will accept work without penalty, when, in his judgment an absence could not be avoided.

### **ABSENCES:**

Students not attending class regularly will be administratively withdrawn from class by the instructor. Students will be considered absent if not in class within the first one hour of a five hour class time. Students in this class are subject to withdrawal for accumulating 3 consecutive or 4 total semester absences. The instructor may reinstate the student after withdrawal if, in the judgment of the instructor, the absences do not jeopardize satisfactory course completion or may not reinstate the student.

### **STUDENT WILL BE DROPPED:**

**CELL PHONES** in the class room or in welding lab will no longer be allowed. If the student is caught using a cell phone 3 times it will be an automatic drop from the class.

## COURSE SCHEDULE

### **UNITS TEST**

#### MODULE

29204-09 PREHEATING AND POSTHEATING OF METALS

29305-10 GTAW LOW ALLOY & STAINLESS STEEL PIPE

29306-10 SMAW STAINLESS STEEL GROOVE WELDS

### **UNIT LAB ASSIGNMENT:**

Open Butt Welds on Pipe

1GR, 2G, 5G, and 6G

6010 5P + Root

ER70SXX Fill & Cap

## ACADEMIC HONESTY

Brazosport College assumes that students eligible to perform on the college level are familiar with the ordinary rules governing proper conduct including academic honesty. The principle of academic honesty is that all work presented by you is yours alone. Academic dishonesty including, but not limited to, cheating, plagiarism, and collusion shall be treated appropriately. Please refer to the Brazosport College Student Guide for more information. This is available online at <http://www.brazosport.edu>. Click on the CATALOGS AND SCHEDULES link under STUDENTS.

Academic dishonesty violates both the policies of this course and the Student Code of Conduct. In this class, any occurrence of academic dishonesty will be referred to the Dean of Student Services for prompt adjudication, and will, at a minimum, result in 0 for that assignment in this course. Sanctions may be imposed beyond your grade in this course by the Dean of Student Services.

**CLASS: WLDG 2513 WELDING USE MULTIPLE PROCESSES**

Class Time: \_\_\_\_\_

Instructor: \_\_\_\_\_

Phone: \_\_\_\_\_

Office Hours: \_\_\_\_\_

**ATTENDANCE POLICY**

**CLASS WORK:** Students are responsible for all class work assigned during any absence. Do not ask if you missed anything. If we had a class you missed something. The instructor will accept work without penalty, when, in his judgment an absence could not be avoided.

**ABSENCES:** Students not attending class regularly will be administratively withdrawn from class by the instructor. Students will be considered absent if not in class within the first one hour of a five hour class time. Students in this class are subject to withdrawal for accumulating 3 consecutive or 4 total semester absences. The instructor may reinstate the student after withdrawal if, in the judgment of the instructor, the absences do not jeopardize satisfactory course completion or may not reinstate the student.

**STUDENT WILL BE DROPPED: CELL PHONES** in class room or in welding lab will no longer be allowed. If the student is caught using a cell phone 3 times it will be an automatic drop from the class.

**GRADE SYSTEM: A=100-90 B=89-80 C=79-70 D=69-60 F=BELOW 59**

<b>GRADES:</b>	LAB ASSIGNMENTS (3)	40%
	UNIT TESTS	30%
	ATTENDANCE	20%
	FINAL	10%

**TOPICS:** UNITS TEST

**MODULE**

**29204-09 PREHEATING AND POSTHEATING OF METALS**

Explain preheating, interpass temperature control & post heating procedures.

**29305-10 GTAW LOW ALLOY & STAINLESS STEEL PIPE**

Explain how to set up GTAW equipment for open-root V-groove welds on low alloy & stainless steel pipe. Explain how to prepare & make welding using GTWA on low alloy & stainless steel pipe in 2G, 5G, & 6G welding positions.

**29306-10 SMAW STAINLESS STEEL GROOVE WELDS**

Explain stainless steel metallurgy, how to select SMAW electrodes for stainless steel welds, & how to weld different types of stainless steel pipe. Explain how to prepare for & how to make open-root V-groove welds with GTAW equipment on low alloy & stainless steel pipe in the 2G,5G, & 6G welding positions.

**UNIT LAB ASSIGNMENT**

- Open Butt Welds on Pipe
- 1GR, 2G, 5G, and 6G
- 6010 5P + Root
- ER705XX Fill & Cap

Required equipment Welding 2513:

Welding hood with shade 10, 11, or 12 lens

Cotton welding cap

Leather welding gloves appropriate for welding process

Clear safety Glasses (not shaded)

Leather work type shoes or boots

Long sleeve cotton shirt

Channel lock type pliers

4.5" grinder with 5/8 spline

2) 4" C-clamps

## **BRAZOSPORT WELDING TECHNOLOGY SAEFTY RULES AND PRACTICES**

Safety cannot be overly stressed, especially in the Welding Lab. The lab is very congested and each student will have to do his part by abiding by all safety rules set forth for the welding lab.

1. Clear safety glasses will be worn in the welding lab at all times.
2. Safety glasses with face shield will be worn when grinding or welding hood with flip lens.
3. Wear the proper clothes for welding. Cotton type clothing is considered the best, using long sleeves. High top shoes or boots are the safest to use. Raveled or torn clothing is a fire hazard. T-shirts as outside clothing will NOT be worn.
4. Compressed gases are dangerous. Handle carefully, and store properly. Oxygen and Acetylene should be stored a minimum of 10 ft. apart, upright, and tied or fastened to a wall or in racks. All combustible gases should be stored in this manner. Be sure all bottles are turned using. Never leave an empty bottle with the valve open.
5. There are four fire stations in the lab. Be sure to know where these stations are located.
6. Never use a piece of welding or cutting equipment until you have been orientated in the safety and proper use.
7. Check the area around you before using the cutting torch. Be sure the hose or other flammable and people are not in the way.
8. Check all grinding blades for chips or cracks before grinding.
9. Check welding helmets regularly for cracked glass or leaks.
10. Never handle hot metal with gloves. Use pliers.
11. Be sure all metal is secured in the welding stands.
12. Never weld with chapter in your book. Abide by all safety rules. Safety is everyone's business.
13. No horseplay

Each company will have their own safety program and a set of rules that govern each particular job or phase of work, and the safest rules will be carried out. Your life and the lives of others depend on safety in the lab and on the job.

I have read and understand the safety rules and will abide by all the rules set forth.

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Name

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Date

# REGISTRATION AND RELEASE FORM



Important: Type or print legibly. Any inaccuracies on this form may be reflected on student and instructor transcripts and training records.

Sponsor Name: ABC TX Gulf Coast Chapter

Check One: Student:  Instructor:

Name: \_\_\_\_\_

Social Security # \_\_\_\_\_

Job Title: \_\_\_\_\_

Company Name: \_\_\_\_\_

Company Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

I hereby authorize the NCCER Registry Department to verify information in my training records to Sponsor Representatives upon request. I release and hold harmless the National Center for Construction Education and Research for this verification process.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\*OPTIONAL

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

\*NOTE: To be entered in NCCER's National Training Registry, you must complete this Registration and Release Form. This form must either be forwarded by your Sponsor to NCCER's Registry Department, or the Sponsor may choose to maintain the Release Forms locally and provide the Registry with written notification of Trainees or Instructors, including their names and social security numbers. This written notification must include the signature of the Sponsor Representative or other authorized Officer of the Sponsors.

Return to: NCCER – Accreditation Department  
P.O. Box 141104 • Gainesville FL 32614-1104 • 352-334-0911 • Fax 352-334-0932  
3600 NW 43<sup>rd</sup> St. • Bldg. G • Gainesville FL 32606



### Acknowledgement of NCCER Policy and Award of Certification

After successful completion of a written assessment or performance verification, an individual's qualifications are tracked through NCCER's National Registry. This national registry allows organizations and companies to track the qualifications of their craft professionals and/or check the qualifications of possible new hires. The National Registry also assists craft professionals by maintaining their records in a secure database. In order to maintain this personal information, permission must be obtained from the student.

Please read the following statements regarding NCCER registry policies and sign at the bottom of this form.

- 1) I understand that any information that is needed to allow my credentials to be posted in the National NCCER Registry is **voluntary**. However, if I do not allow my testing information and/or personal identification information to be released, my credentials will **NOT** be registered in the national registry.
- 2) I understand that the \$25 charge payable to NCCER is used to purchase an NCCER wallet card. An NCCER wallet card is not representation of certification but rather proof that the card holder has been entered into NCCER's National Registry. The fee, payable to Merit Shop training, Inc., is for non-ABC member companies.
- 3) I understand that it is the student's responsibility to pick up the NCCER card from the ABC offices. Cards will not be delivered via the instructor or mail. The ABC office is located at 1400 North Velasco Blvd., Building C107, Freeport, TX.
- 4) My signature verifies that I have read and understand the statements made in this Acknowledgement.

\_\_\_\_\_  
NAME DATE

Instructor: \_\_\_\_\_ Course: \_\_\_\_\_

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*Complete this section only if you do not want your information released to the NCCER Registry:*

I, \_\_\_\_\_ do not wish to have my information released to the NCCER National Registry. I understand that my credentials will **NOT** be registered in the national registry.

\_\_\_\_\_  
SIGNATURE DATE

# Syllabus Acknowledgement Form

**Date:**

**To:** Jay Barr, Course Instructor

**Class:** WLDG 2513

Acknowledgement of Syllabus and Policies for WLDG 2513

By attaching my signature to this document, I hereby acknowledge that I have read the syllabus and the rules. Furthermore, by attaching my signature below I agree with the following statements:

- I fully understand the policies stated in this syllabus.
- I will abide by all laboratory safety rules.
- I will abide by the dress code for safety reasons.
- I will bring the needed materials to my class as I was instructed by my instructor.
- I accept and acknowledge that failure to abide by these policies may have significant academic consequences for which I am solely responsible.

Student Signature: \_\_\_\_\_

Student Name (printed): \_\_\_\_\_

Student Identification Number: \_\_\_\_\_

Date: \_\_\_\_\_