



## Introduction to Flux Cored Arc Welding- (FCAW)-1412

Course Syllabus: Fall 2017

“Northeast Texas Community College exists to provide responsible, exemplary learning opportunities.”

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	2:30-5:00pm	2:30-5:00pm	2:30-5:00pm	2:30-5:00pm		

*The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course*

**Course Description for WLDG-1412:** Four hours credit. An overview of terminology, safety procedures, and equipment set up. Practice in performing T-joints, lap joints, and butt joints using self-shielding and dual-shield electrodes. Additional lab course fee: \$65.00. Three hours lecture and four hours lab each week.

#### Required Textbook(s):

Basic Principles and Applications, 8th edition, by Larry Jeffus

**Publisher:** Delmar, Cengage Learning

**ISBN Number:** ISBN-13: 978-1-111-03917-2. ISBN-10: 1-111-03917-8

**Recommended Reading(s):** None

#### Student Learning Outcomes:

Describe and demonstrate equipment safety checks; identify Flux Cored Arc Welding (FCAW) equipment parts, describe and demonstrate the procedures for running a continuous bead in the flat position; describe and demonstrate the procedures for welding a butt joint, a T-joint, and an outside corner joint in the flat horizontal, and overhead positions; and describe and demonstrate the procedures for making an open butt v-groove weld.

**Exemplary Educational Objectives:** N/A

**SCANS Skills:**

**Course Objectives**

Upon successful completion of this course, the student will be able to:  
 Objectives for this course are listed in the handout that covers Competencies/tasks.

**Lectures & Discussions:**

Task Code	Task Description
<b>1202.00 FAC Welding process. (F1, F5, F11, C5, C10, C18)</b>	
1202.01	Explain the FCA welding process
1202.02	Describe what equipment is needed for FCA welding
1202.03	List the advantages of FCA welding, and explain its limitations
1202.04	Tell what can cause weld porosity and how it can be prevented
1202.05	Discuss what flux can provide to the weld and how fluxes are classified
1202.06	Discuss what flux can provide to the weld and how fluxes are classified
1202.07	Describe the proper care and handling of FCAW electrodes
<b>1203.00 FAC gasses, welding angles, Metal transfer, and cover passes (F1, F5, F14, C9, C14, C18, C20)</b>	
1203.01	List the common shielding gases used, and explain their benefits
1203.02	Explain how changing the welding gun angle affects the weld produced
1203.03	Identify the methods of metal transfer and describe each
1203.04	Explain the effect electrode extension has on FCA welding
<b>1204.00 Set up FCA WLDG station, root, filler, and cover passes (F1, F11, F15, F17, C9, C15, C18, C19, C20)</b>	
1204.01	Explain the purpose of setting up the FCA weld station properly
1204.02	Demonstrate how to properly set up an FCA welding station and how to thread the electrode wire through the system
1204.03	Discuss the advantages of having to bevel a plate before welding
1204.04	Describe how to make root, filler, and cover passes in FCA welding
1204.05	Demonstrate how to properly make FCA welds in butt joints, lap joints, and tee joints, in all positions that can pass the specified standard

**Competencies/tasks.**

STUDENT NAME	Square Butt With ER71T .035-45 WIRE				Lap Joint With ER71T .035-45 WIRE				Tee Joint with ER71T .035-45 WIRE				Out-Side Corner ER71T .035-45 WIRE				Final Test All Positions			
	G1	G2	G3	G4	F1	F2	F3	F4	F1	F2	F3	F4	F1	F2	F3	F4				

**Evaluation/Grading Policy:**

The grades you will receive for this class will be based upon these areas:

- A Test and Quizzes: Hands-on Lab Practices 50%**
- B. Review Questions: At the end of each unit 10%**
- C. General Work Habits: Safety, use of lab time, materials, and 10%**

		<u>Care of equipment.</u>	
D.	Mid-term Test:	Units 22-23 Written test	10%
E.	Final Test:	Hands-on Lab All Positions Final Test	<u>20%</u>
F.			<b>Total: 100%</b>

**Tests/Exams:**

Same as the above Description

**Assignments:**

**Review Questions: At the end of the assigned units by your instructor**

**Other Course Requirements:**

Each student is required to have a welding toolkit that may be purchased from the bookstore on campus AND steel toe boots for this course. If the student does not purchase this from the bookstore they will be required to provide the necessary equipment.

**General Classroom and Lab Policies**

The Mechanical Power Technology program, like most other vocational programs, has policies that must be followed. These policies will give you, the student, a better opportunity to learn the mechanical power trade. *The general classroom and lab policies are in the Mechanical Power Technology Shop Safety Manual.* The instructor may have additional policies for their class.

**General Safety Policies**

Anyone with extremely long hair must have some way to keep it up (hair net, hat). There will be no open-toe shoes worn in the shop (sandals, flip flops). Each student will be required to have a pair of safety glasses to be at all times. *The general safety policies are in the Mechanical Power Technology Shop Safety Manual.* The instructor may have additional safety policies for their class.

**Student Responsibilities/Expectations:**

It is important to present a professional image in the work place. Therefore, students are required to wear 100% cotton long sleeve shirts. They may be purchased in the bookstore or you can purchase in town. If your employer furnishes uniform shirts, they may be worn in place of the school shirt. These shirts should be clean and neat at all times. You must have an approved uniform Welding Clothing by the second week of class. If you do not, you will not allowed to start any hands-on welding in the lab and 10 points will be deducted from your professionalism grade each class period proper welding clothing is not worn. **Shorts and sandals are not allowed. Professional appearance is part of your grade**

**NTCC Academic Honesty Statement:**

"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about

allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook."

## **Conduct of Course**

### **Attendance Policy**

Regular and punctual attendance at all scheduled classes is expected. Attendance is necessary for successful completion of course work. If you are absent, you are responsible for initiating procedures for make-up work. All course work missed, regardless of cause, is to be completed to the satisfaction of the instructor. Every time the student comes late to class will be adding deduction points into his final grade. *More than three absences is considered excessive!* It is up to you to initiate a drop in the Office of Admissions and Records. (At the discretion of the instructor, a student with no more than two absences and with an "A" average will be exempt from the final exam.)

### **Academic Ethics**

The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

### **ADA Statement:**

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to arrange an appointment with a College counselor to obtain a Request for Accommodations form. For more information, please refer to the NTCC Catalog or Student Handbook.

### **Family Educational Rights And Privacy Act (FERPA):**

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

**Other Course Policies:**

Class recognition certificates may be distributed at the end of the course. The awarding of such certificate is at the *sole discretion of the instructor*.

**LOCKERS AND TOOLS BOXES AT THE END OF EACH SEMESTER**

**Each student has to clean up his/her own locker, take all personal items out the locker box and return ALL WELDING TOOLS. IF ANY WELDING TOOL IS MISSING, HE/SHE WILL NOT RECEIVE A FINAL GRADE UNTILL ALL THEM ARE RETURNED BACK AS THEY WERE ISSUED AT THE BEGINNING OF THE SEMESTER.**

I HAVE READ THE SYLLABUS FOR THIS COURSE AND UNDERSTAND WHAT IS REQUIRED TO

PASS. I UNDERSTAND THE EVALUATION AND GRADING POLICIES IN THIS COURSE.

I WILL FOLLOW ALL SAFETY AND CLASSROOM POLICIES BOTH WRITTEN AND VERBAL.

ALL QUESTIONS I HAD WERE ANSWERED BY THE INSTRUCTOR TO MY SATISFACTION.

COURSE WLDG 1412.

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Student Signature

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Date