

## Pages 208-211

### WELDING

#### Purpose

The Welding School is designed to prepare the student for employment and advancement in an occupation, which requires textbook knowledge and hands on skill of welding.

#### Program Description

This program is designed to prepare the student to enter the job labor market upon successful completion. Welding theory, electrode classification and identification, blue-print reading and welding symbol interpretation, plasma and oxyacetylene cutting, and shop safety are stressed.

The student will begin with elementary welding procedures and will progress through advanced procedures. In the more advanced courses the students are taught the use of the Metal Inert Gas (MIG) Aluminum Welding and the Tungsten Inert Gas (TIG) Welding on aluminum and stainless steel for special purposes.

#### Credit-By-Examination

The Welding Program is aligned with the American Welding Society (AWS) assessment and performance standards. Students completing courses in the Welding Program are assessed to the AWS D1.1 standard. Applicants seeking college credit for prior knowledge and experience may request Credit-By-Examination (CBE) for a maximum of 29 credit hours in the Welding Program.

To request CBE credit, an applicant must provide evidence from one of the following:

1. High school graduate successfully completing a CTE secondary welding program;
2. Experienced welder with:
  - a. A minimum of 2 years direct welding experience in which the experience has been obtained within the last 18 months from the date of the request; and
  - b. 2 letters of reference from the person's employer stating level of welding proficiency achieved.
3. A successful completer of a non-credit workforce training welding certification in which the participant demonstrates readiness to pass the AWS certification exam.
4. A completer of the Jones College MIBEST Welding Program.

The following AWS D1.1 CBE exams and transcribed course equivalents are available:

1. Shielded Metal Arc. Weld, Electrode #E6010/F3 series electrodes with credit awarded for WLT 1115
2. Cutting Processes, Jones College written and performance test with credit awarded for WLT 1313
3. Shielded Metal Arc Weld, Electrode #E7018/F4 series electrodes with credit awarded for WLT 1225
4. Gas Metal Arc. Weld, flat and vertical tests credit awarded for WLT 1124
5. Flux Cored Arc Weld, vertical and overhead tests with credit awarded for WLT 1143~~6~~. Gas Tungsten Arc Weld, flat and vertical tests on steel and flat test an aluminum with credit awarded for WLT 1135
7. Completers of the Jones College MIBEST Welding Program are eligible to receive transcribed credit for the following courses: CTE 1143, WLT 1313, WLT 1115, WLT 1173, WLT 1225

#### Program Length

Two Semesters  
Three Semesters  
Four Semesters

#### Degree(s) Offered

Career Certificate  
Technical Certificate  
Associate in Applied Science

#### Admission Requirements

- Must meet all general admission requirements of the college. For some technical certificate programs, an ACT WorkKeys Career Readiness Credential may be accepted for admission purposes in place of the ACT. [See the appropriate program for more details.](#)
- Must have good manual dexterity, arm-hand steadiness, near vision, active listening, and information ordering skills.
- Receive a negative test result on drug screen test conducted by a certified laboratory approved by the college and have the results submitted directly to the college.

Applicants that do not hold a regular high school diploma or high school equivalency may qualify for the program by the following:

- Contact Dr. Brad Harrison at 601-477-4098 or brad.harrison@jcc.edu
- Schedule a time to complete the Accuplacer assessment.
- Receive a passing score on all Accuplacer tests.

**Contact**

Instructors: Billy Clark, 601-477-4177, billy.clark@jcc.edu, Ethan Wimberly, 601- 477-2310, ehtan.wimberly@jcc.edu, Steven Zugg, 601-477-5473, steven.zugg@jcc.edu; Tommy Freeman (Greene County) Phone 601-394-4423, tommy.freeman@jcc.edu, Ethan Blakney (Jasper County) 601-477-2304, ethan.blakney@jcc.edu; George Smith (Clarke County) 601-659-4659 george.smith@jcc.edu.

**WELDING**

**Career Certificate Option**

**First Year**

**Fall Semester Credit Hours**

SSP 1002 Smart Start Pathway.....	2
WLT 1313 Cutting Processes .....	3
WLT 1115 Shielded Metal Arc Welding I .....	5
WLT 1173 Introduction to Welding and Safety .....	3
WLT 1225 Shielded Metal Arc Welding II .....	5
Total Hours.....	18

**Spring Semester Credit Hours**

WLT 1124 Gas Metal Arc Welding .....	4
WLT 1232 Blueprint Reading, Welding Symbols, and Metallurgy .....	2
WLT 1143 Flux Cored Arc Welding.....	3
WLT 1911 Special Problems in Welding & Cutting .....	1
WLT 1135 Gas Tungsten Arc Welding .....	5
<del>WLT 1913 Special Problems in Welding &amp; Cutting or CTE 1143 (NCCER Core).....</del>	<del>3</del>
Approved Technical Elective .....	3
Total Hours.....	18

**WELDING**

**Technical Certificate Option**

**First Year**

**Fall Semester Credit Hours**

SSP 1002 Smart Start Pathway.....	2
WLT 1313 Cutting Processes .....	3
WLT 1115 Shielded Metal Arc Welding I .....	5
WLT 1173 Introduction to Welding and Safety .....	3
WLT 1225 Shielded Metal Arc Welding II .....	5
Total Hours.....	18

**Spring Semester Credit Hours**

WLT 1124 Gas Metal Arc Welding .....	4
WLT 1232 Blueprint Reading, Welding Symbols, and Metallurgy .....	2
WLT 1143 Flux Cored Arc Welding.....	3
WLT 1911 Special Problems in Welding & Cutting .....	1
WLT 1135 Gas Tungsten Arc Welding .....	5
<del>WLT 1913 Special Problems in Welding &amp; Cutting or CTE 1143 (NCCER Core).....</del>	<del>3</del>
Approved Technical Elective .....	3
Total Hours.....	18

**1st Summer Term**

WLT 1155 Pipe Welding.....	5
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**2nd Summer Term**

WLT 1252 Advanced Pipe Welding.....	2
<del>WLT 1162 Gas Metal Arc Aluminum Welding.....</del>	<del>2</del>
<del>WLT 1912 Special Problems in Welding &amp; Cutting.....</del>	<del>2</del>
Approved Technical Elective .....	4
Total Hours.....	11

**WELDING**

**Associate in Applied Science Option**

**First Year**

**Fall Semester Credit Hours**

SSP 1002 Smart Start Pathway.....	2
WLT 1313 Cutting Processes .....	3
WLT 1115 Shielded Metal Arc Welding I .....	5
WLT 1173 Introduction to Welding and Safety .....	3
WLT 1225 Shielded Metal Arc Welding II.....	5
Total Hours.....	18

**Spring Semester Credit Hours**

ENG 1113 English Composition I.....	3
WLT 1124 Gas Metal Arc Welding .....	4
WLT 1232 Blueprint Reading, Welding Symbols, and Metallurgy .....	2
WLT 1143 Flux Cored Arc Welding.....	3
WLT 1911 Special Problems in Welding & Cutting.....	1
WLT 1135 Gas Tungsten Arc Welding.....	5
Total Hours.....	18

**Second Year**

**Fall Semester Credit Hours**

ENG 1123 English Composition II.....	3
MAT 1313 College Algebra.....	3
Social/Behavioral Science Elective* .....	3
WLT 1155 Pipe Welding.....	5
<del>WLT 1252 Advanced Pipe Welding.....</del>	<del>2</del>
Approved Technical Elective .....	2
Total Hours.....	16

**Spring Semester Credit Hours**

SPT 1113 Public Speaking .....	3
<del>WLT 1912 Special Problems in Welding &amp; Cutting.....</del>	<del>2</del>
<del>WLT 2913 Welding Code .....</del>	<del>3</del>
<del>WLT 1922 Special Problems in Welding &amp; Cutting.....</del>	<del>2</del>
WLT 1252 Advanced Pipe Welding.....	2
Approved Technical Elective .....	6
Total Hours .....	11

**Approved Technical Electives:**

- ~~WLT 1155 Pipe Welding~~
- ~~WLT 1252 Advanced Pipe Welding~~
- WLT 2936 Structural Fabrication
- WLT 2924 Heavy Equipment Welding and Fabrication
- WLT 1162 Gas Metal Arc Aluminum Welding
- WLT 2812 Welding Metallurgy
- WLT 2913 Welding Code
- WLT 191(1-3) Special Problems in Welding and Cutting
- ~~WLT 1912 Special Problems in Welding and Cutting~~
- ~~WLT 1913 Special Problems in Welding and Cutting~~
- WLT 1921 Supervised Work Experience in Welding and Cutting Technology

## CTE 1143 NCCER Core

### WBL 191(1-5), 192(1-5), 193(1-5), 291(1-5), 292(1-5), 293(1-5) Work-Base Learning

\*Students who lack entry level skills in Math and English will be provided related studies.

Baseline competencies are taken from the high school Metal Trades program. Students who can document mastery of these competencies will not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so. Students who possess AWS Certification will not receive duplicate instruction.

\*\*Social/Behavioral Science Elective must be chosen from the following Social/Behavioral Science courses:

GEO 1113, HIS 1113, HIS 1123, HIS 2213, PSC 1113, PSY 1513, or SOC 2113.

## WELDING

**CTE 1143** - NCCER Core - this course includes basic safety, an introduction to construction math, an introduction to hand and power tools, an introduction to construction drawings, employability skills and communications. Three semester credit hours: Two hours lecture and two hours lab. Approved elective for Industrial Service Programs.

**WLT 1115** – Shielded Metal Arc Welding I– This course is designed to teach students welding techniques using E-6010 electrodes. Five semester credit hours: One hour lecture and eight hours lab.

**WLT 1124** – Gas Metal Arc Welding – This course is designed to give the student experience in various welding applications with the GMAW welder including short circuiting and pulsed transfer. Four semester credit hours: One hour lecture and six hours lab.

**WLT 1135** – Gas Tungsten Arc Welding – This course is designed to give the student experience in GTAW welding applications including aluminum and stainless steel. Five semester credit hours: One hour lecture and eight hours lab.

**WLT 1143** – Flux Cored Arc Welding – This course is designed to give the student experience in FCAW using cored wire and inert gases. Three semester credit hours: One hour lecture and four hours lab.

**WLT 1155** – Pipe Welding – This course is designed to give the student experience in basic pipe welding procedures. Five semester credit hours: One hour lecture and eight hours lab.

**WLT 1162** – Gas Metal Arc Aluminum Welding – This course is designed to give the student experience in Gas Metal Aluminum Welding. Two semester credit hours: One hour lecture and two hours lab.

**WLT 1173** – Introduction to Welding and Safety – This course is designed to give the student an introduction to the welding field. Three semester credit hours: Two hours lecture and two hours lab.

**WLT 1225** – Shielded Metal Arc Welding II – This course is designed to teach students welding techniques using E-7018 electrodes. Five semester credit hours: One hour lecture and eight hours lab.

**WLT 1232** – Blueprint Reading, Welding Symbols, and Metallurgy – This course is designed to give the student experiences in blueprint reading. Two semester credit hours: Two hours lecture.

**WLT 1252** – Advanced Pipe Welding – This course is designed to give the student advanced pipe welding techniques using shielded metal arc and gas tungsten arc welding processes. Two semester credit hours: One hour lecture and two hours lab.

**WLT 1313** – Cutting Processes – This course is designed to give the student experience in oxyfuel cutting principles and practices, air carbon cutting and gouging, and plasma arc cutting. Three semester credit hours: One hour lecture and four hours lab.

**WLT 191(1-3)** – Special Problem in Welding and Cutting – A course to provide students with an opportunity to utilize skills and knowledge gained in other Welding and Cutting Technology courses. The instructor and student work closely together to select a topic and establish criteria for completion of the project. One to three credit hours: One to three hours lecture and lab.

**WLT 1921** – Supervised Work Experience in Welding and Cutting Technology – Prerequisite: Consent of Instructor. A course which is a cooperative program between industry and education designed to integrate the student's technical studies with industrial experience. Variable credit awarded on the basis of one semester hour per 45 industrial contact hours. One semester credit hour:

**WLT 2812** – Welding Metallurgy – this course is designed to give the student experience in the concept of metallurgy and how metals react to internal and external strains and temperature changes. Two semester credit hours: One to three hours lecture and lab.

**WLT 2913** – Welding Code – This course is designed to give the student experience in the various welding codes and the experience in interpretation of these codes. Three semester credit hours: ~~One to~~ Three hours lecture ~~and lab~~.

**WLT 2924** – Heavy Equipment Welding and Fabrication -- In this course, students will learn proper safety and fundamentals of oxyfuel cutting and shielded metal arc welding gas metal arc welding, flux cored arc welding, and air carbon arc cutting as it relates to the heavy equipment repair field. Students will learn advanced concepts of industrial fabrication in the maintenance of heavy duty equipment, develop a strong understanding of metals and their applications, and have the ability to bend, heat, and apply welding techniques that will support heavy duty equipment for long term use. Four semester credit hours: Two lecture hours and four lab.

**WLT 2936** – Structural Fabrication -- A course of instruction to include the use of rulers/scales, layout and hand tools, welding joint designs, shearing and sawing materials, grinders and belt sanders and assembly projects by various welding processes. The plasma, flame tracer will be introduced. Complete a fabrication project, beginning by interpreting a set of print; developing a plan; and working to cut, prepare, fit and weld raw materials together. The fabrication project will resemble a real-world scenario related to the shipbuilding, construction, structural steel fabrication, aeronautical or related industries on a smaller scale. This welding course focuses on skills required to fabricate a project from an engineering drawing to the finished product. Emphasis is placed on interpreting engineering drawings, proper use of tools and equipment, math, proper fitting techniques and shop safety. Six semester credit hours: Two hours lecture and eight hours lab.