Texarkana College at FCI Texarkana

Welding Technology Syllabus

**Instructor’s Information**

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4. Instructor Curriculum Vitae: MyTC Website

**Course Information**

1. Course Name: Welding Technology
2. Course Rubric and Number WLDG
   1. 1st Semester: 1323, 1428, 2443, and 1430
   2. 2nd Semester: LEAD 1100, 1413, 1317, and 2547
   3. 3rd Semester: 1391, 1434, 2435, and 2388
3. Course Description: The Texarkana College Welding program is designed to educate and train students in the field of welding so that they may obtain employment as an entry level welder in the industry. Upon completion of this course, graduates should have the ability to pass a hands-on welding test and have basic knowledge of the welding process and equipment used in the industry.
4. Course Level: Entry Level

**Grading Scale**

* A= 90+
* B= 80-89
* C= 70-79
* D= 60-69
* F= 0-59

**Resource Requirements**

1. Textbook: Modern Welding 12th edition ISBN: 978-1-63563-686-4
2. Textbook: Welding Print Reading, 7th Edition ISBN: 978-1-63563-681-9

**Academic Integrity Statement**

Scholastic dishonesty, involving but not limited to cheating on a test, plagiarism, collusion, or falsification of records will make the student liable for disciplinary action

after being investigated by the Dean of Students. Proven violations of this nature

will result in the student being dropped from the class with an “F”.

This policy applies campus wide, including TC Testing Center, as well as off-campus

classroom or lab sites, including dual credit campuses. This information can be

found in the Student Handbook at https://texarkanacollege.edu.

**WLDG 1323 Syllabus**

**Course Information**

Course Name: Welding Safety, Tools, and Equipment

Class Location: FCI Texarkana

Course Level: Entry Level

Course Description: An introductory course to familiarize students with various types of hand tools, power tools, and equipment commonly used in the field of welding. The course also covers OSHA safety practices associated with welding, cutting, and allied processes.

Student Learning Outcomes: Students should be able to identify and apply safety practices throughout the course. Students should also be able to identify and explain various welding processes, and the safety hazards associated with them.

**WLDG 1428 Syllabus**

**Course Information**

Course Name: Introduction to Shielded Metal Arc Welding

Class Location: FCI Texarkana

Course Level: Entry Level

Course Description: An introductory course designed to teach students the fundamentals, theories about arc welding, and how to effectively weld a variety of joint configurations with different types of welding rods and thicknesses.

Student Learning Outcomes: Student will select electrodes and determine correct amperage settings for various thicknesses of materials and welding positions; define principles of

arc welding; explain electrode classifications; perform SMAW operations in various positions using selected electrodes and different joint designs.

**WLDG 2443 Syllabus**

**Course Information**

Course Name: Advanced Shielded Metal Arc Welding

Class Location: FCI Texarkana

Course Level: Advanced

Course Description: An advanced course dedicated to enhancing the students’ ability to handle the shielded metal arc welding process by teaching how to weld on multiple types of metals, and thicknesses.

Student Learning Outcomes: Describe effects of preheating and post weld heating; explain precautions used when welding various metals and alloys; distinguish between

qualification and certification procedures; and discuss problems of welding

discontinuities; perform open groove welds with low carbon steel and low

alloy electrodes in all positions.

**WLDG 1430 Syllabus**

**Course Information**

Course Name: Introduction to Gas Metal Arc Welding

Class Location: FCI Texarkana

Course Level: Entry Level

Course Description: An introduction course for teaching students the fundamentals of gas metal arc welding. Students will learn the equipment, tools, and hazards associated with this process.

Student Learning Outcomes: Describe welding positions with various joint designs on plate; describe the effects of welding parameters in GMAW; apply safety rules; troubleshoot

equipment used; perform visual inspection; weld various types of structural

material; diagnosing welding problems.

**WLDG 1413 Syllabus**

**Course Information**

Course Name: Introduction to Blueprint Reading for Welders

Class Location: FCI Texarkana

Course Level: Intermediate

Course Description: Introductory course designed to teach students how to read and create welding blueprints. The course covers symbols, various metal shapes, and common types of measurement tools.

Student Learning Outcomes: Define terms and abbreviations; and identify and explain object views, lines, and dimensions. Identify, explain, and interpret weld symbols; identify

structural shapes; demonstrate the proper use of measuring devices; read

and interpret blueprints; read welding detail drawings; and calculate

dimensions and material.

**WLDG 1317 Syllabus**

**Course Information**

Course Name: Introduction to Layout and Fabrication

Class Location: FCI Texarkana

Course Level: Introduction

Course Description: Introductory course to teach students how to use measurement devices and define layout for fabricating.

Student Learning Outcomes: Students should be able to identify and use various structural shapes and materials to create metal fabricated projects by following welder’s blueprints.

**WLDG 2547 Syllabus**

**Course Information**

Course Name: Advanced Gas Metal Arc Welding

Class Location: FCI Texarkana

Course Level: Advanced

Course Description: An advanced course to further educate students in gas metal arc welding. Students will apply previously learned topics and hands-on training on more difficult welding situations.

Student Learning Outcomes: Students should be able to demonstrate proficiency in various positions, weld a multitude of different types of metal and joint configurations, and describe the effects of welding with different parameters.

**WLDG 1391 Syllabus**

**Course Information**

Course Name: Special Topics in Welding

Class Location: FCI Texarkana

Course Level: Intermediate

Course Description: Topics address recently identified current events, skills and knowledge relevant to the occupation and technology in the field of welding.

Student Learning Outcomes: Learning objectives are determined by local occupational needs and industry trends.

**WLDG 1423 Syllabus**

**Course Information**

Course Name: Introduction to Gas Tungsten Arc Welding

Class Location: FCI Texarkana

Course Level: Introduction

Course Description: Introduction of principles of gas tungsten arc welding including setup, describing safety rules and equipment, and describe the effects of welding parameters in GTAW.

Student Learning Outcomes: Describe various joint designs; describe safety rules and equipment; and describe the effects of welding parameters in GTAW; weld various structural

materials.

**WLDG 2435 Syllabus**

**Course Information**

Course Name: Advanced Layout and Fabrication

Class Location: FCI Texarkana

Course Level: Advanced

Course Description: An advanced course designed to further educate students in the field of fabrication by teaching how to calculate layouts and take offs, as well as apply mathematical concepts in the construction of projects.

Student Learning Outcomes: Students should be able to demonstrate various fabrication techniques, formulate a bill of materials, and design welding projects.

**WLDG 2388 Syllabus**

**Course Information**

Course Name: Welding Technology Internship

Class Location: FCI Texarkana

Course Level: Advanced

Course Description: A work-based learning experience that enables the student to apply specialized theory, skill, and concepts.

Student Learning Outcomes: Students will be able to apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and

interactions within and among political, economic, environmental, social, and legal

systems associated with occupation and the business/industry and will

demonstrate legal and ethical behavior, safety practices, interpersonal and

teamwork skills, and appropriate written and verbal communication skills using the

terminology of the occupation and the business/industry.