Outcome-based 18/SU Course Syllabus

Course Rubric Number Section:	ABDR 2447 1001
Lecture-Lab-Credit:	2-4-4
CIP Code:	47.0603
Course Title:	Advanced Collision Repair Welding
Course Description:	Skill development in the use of advanced welding and cutting processes. Emphasizes current welding procedures and specific repair requirements for specialized metals.
Prerequisites:	
Co-requisites:	
Course Meets:	1FC1 110 LEC TH 01:00PM 02:50PM 1ARL 101 LAB T 01:00PM 04:50PM

Instructor:	Ariel Pevia
Office Phone Number:	2548674854
Email Address:	ajpevia@tstc.edu
Office Fax Number:	2548672315
Building & Office Room Number:	fentress 1ARL101
Office Hours:	Tuesday 8:00 A.M. to 12:00P.M.

Approved by:	Clint Campbell	***Date:***	2018-05-03

Course Outcomes

CO1: Use advanced processes in collision repair welding using specialized metals and/or equipment

CO2: Perform cutting processes on special metals

TSTC Grading Policy

(Grades for courses must be C or better)

Grade	Percent	Description	Grade Points
A	90-100	Excellent/Superior Performance Level	4
B	80-89	Above Required Performance Level	3
C	70-79	Minimum Required Performance Level	2
D	60-69	Below Required Performance Level	1
F	Below 60	Failure to meet Performance Requirements	0
IP	--	In Progress	
W	--	Withdrawal	0
CR	--	Credit	0
AUD	--	Audit of Course	0

See College Catalog for complete descriptions.

Competencies Rating Scale

Rating Scale Key			
6	90+	Proficient	Student consistently performs the task accurately to industry standards without supervision.

5	80-89	Proficient	Student performs the task to industry standards with no supervision.
4	70-79	Proficient	Student performs the task to industry standards with little supervision. This is the minimum performance rating for STAR skill completion.
3	60-69	Exposed/Not Proficient	Student has been introduced to the task and can perform some of the tasks to industry standards.
2	50-59	Exposed/Not Proficient	Student has been introduced to the task, but cannot perform the task to industry standards.
1	0-49		Student was absent or did not complete assignment.

Campus Standard Policies

The Student Handbook contains valuable information on campus policies and procedures.

- Student Code of Conduct
- Student Drug and Alcohol Testing Policy
- Plagiarism
- Student Grievances and Complaints

Disability Services

Any student who, because of a disability, may require special accommodations in order to meet the course requirements, should contact the Disability Services office, as soon possible, to make necessary arrangements. Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Disability Services office has been provided.

Abilene Campus
Susan Hash
Testing and Support Services
Abilene Main Campus Bldg. Rm. 112
325-734-3641

Breckenridge Campus
Lisa Langford
Testing and Advisement located in
The Main Building Rm. 106
254-559-7731

Brownwood Campus
Nicole Whitley
Testing and Advisement
Building 2 Rm. 120
325-641-5955

Fort Bend Campus
Schauna Boynton
Brazos Center Rm. 113
346-239-3394

Harlingen Campus
Corina De La Rosa
Disabilities Services
Student Support Services
Student Services Bldg. Rm. 216
956-364-4521

Marshall Campus
Annette Ellis
Administration and Admissions Rm. 150
909-923-3313

Sweetwater Campus
Misty Walden
Disability Services
Student Support Services
Lance Sears Building Rm. 140
325-236-8292

North Texas Campus
Amanda Warren
Student Services, Room 227
972-617-4724

Waco Campus
Marilyn Harren
Disabilities Services Office
Student Services Center Rm. 198
254-867-3600

Williamson County
Chemese Armstrong
Enrollment Services Rm. B113C
512-759-5907

Tutoring Statement

The Supplemental Instruction & Tutoring Program at TSTC offers free tutoring and academic support services to help you achieve your academic and career goals. You can access the Tutoring Schedule, as well as *MyTSTC Video Tutor Library,* by visiting: https://portal.tstc.edu/student/Student_Learning/Pages/Tutoring.aspx
(shortened link: goo.gl/Z9vJvY). For more information, please contact Norma A. Salazar@ 956-364-4557.

Learning Resource Center

The purpose of the TSTC Learning Resource Center is to serve the TSTC Community and support academic, advanced, specialized and emerging programs, contributing to the educational and economic development of the State of Texas. You can access the Learning Resource Center page at https://portal.tstc.edu/employee/Departments/operations/Pages/Learning%20Resource%20Center.aspx

Resources

Tools, Materials:

Item	Resource	Quantity
1	Safety Glasses	1-Pair
2	Welding Gloves	1-Pair
3	Welding Jacket	1
4	Welding Helmet (Auto Darkening)	1
5	Welding Fume Respirator	1
6	Welding Cap	1
7	High Speed Air Cut Off Tool	1
8	1/2" or 3/8" Reversiable Air Drill	1
9	Ball Peen Hammer Set 8-32oz	1 Set
10	12 pc Punch and Chisel Set	1 Set
11	Long Barrell Air Impact Hammer and Bits	1 Set
12	5" High Speed Air Sander Pistol Grip	1
13	2" Roloc 1/4" Arbor: 3M 05539 or Equivalent	1
14	Tool Box-Big Enough to house the Tools on the List	1
15	Scantrons	2-Packages
16	1/4" Milton Type Male Air Fittings to fit your tools	As many as needed
17	Pens, Sharpie (Black) Fine Point, Pencils,	2 each

Grade Scheme

Category Description	Category Value
Lecture	33.4%

Assessment Label:	Assessment Description	Assessment Value
Safety Test:	Lab Safety Test	4.77%
Test 1:	Welding Equipment Requirements Test 1	4.77%
Test 2:	Welding Preparation and Variables	4.77%
Test 3:	Automotive Aluminum MIG Welding Test Requirements	4.77%
Test 4:	Aluminum intensive vehicle repairs (ALI01)	4.77%
Test 5:	Aluminum Exterior Panel Repair and Replacement Test (APR01)	4.77%
Test 6:	Best Practices for Repairs on Advanced Automotive Steels (SPS09)	4.77%

Category Description	Category Value
Lab	33.3%

Assessment Label:	Assessment Description	Assessment Value
LAB: Vertical Butt w/Backing Thick:	Vertical Butt with Backing weld Thick 2.5mm coupons	2.08%
LAB: Vertical Lap :	Vertical Lap or Fillet weld Thin (1.0mm) on Thick (2.5mm) coupons	2.08%
LAB: Vertical Butt w/Backing Thin:	Vertical Butt with Backing weld Thin 1.0mm coupons	2.08%
LAB: Vertical Plug:	Vertical 8mm Plug weld 1.0mm coupons	2.08%
LAB: Overhead Butt w/Backing Thick:	Overhead Butt with Backing weld Thick 2.5mm coupons	2.08%
LAB: Overhead Lap :	Overhead Lap or Fillet weld Thin (1.0mm) on Thick (2.5mm) coupons	2.08%
LAB: Overhead Butt w/Backing Thin:	Overhead Butt with Backing weld Thin 1.0mm coupons	2.08%
LAB: Rail Assembly and Sectioning Procedure :	Build an Aluminum rail using OEM fastening methods and perform proper approved sectioning procedures.	2.08%
LAB: Vertical Lap MIG Brazing:	Vertical Lap MIG Brazing visual and destructive Test	2.08%
LAB: Vertical Butt w/ Backing MIG Brazing:	Vertical Butt w/ Backing MIG Brazing visual and destructive Test	2.08%
LAB: Vertical Slot MIG Brazing:	Vertical Slot MIG Brazing visual and destructive Test	2.08%
LAB: Verticle Open Butt MIG Brazing:	Vertical Open Butt MIG Brazing visual and destructive Test	2.08%
LAB: Overhead Lap MIG Brazing:	Overhead Lap MIG Brazing visual and destructive Test	2.08%
LAB: Overhead Butt w/ Backing MIG Brazing:	Overhead Butt w/ Backing MIG Brazing visual and destructive Test	2.08%
LAB: Overhead Slot MIG Brazing:	Overhead Slot MIG Brazing visual and destructive Test	2.08%

LAB: Overhead Open Butt MIG Brazing:	Overhead Open Butt MIG Brazing visual and destructive Test	2.08%

Category Description	**Category Value**
Final Exam	33.3%

Assessment Label:	**Assessment Description**	**Assessment Value**
FINAL EXAM:	Final LEC Exam	33.30%

Total Assessment Percent **100.00%**

Total Category Percent **100.00%**

A = 100-90 **B = 89-80** **C = 79-70** **D = 69-60** **F = 59-0**

Description of Graded Elements of the Course

Assessment Label	**Assessment Description/Course outcomes met**	**Assessment Value in Percent**	**% of Final Grade**
Safety Test	Lab Safety Test **Course outcomes met:** CO1	4.77	4.77%
Test 1	Welding Equipment Requirements Test 1 **Course outcomes met:** CO1, CO2	4.77	4.77%
Test 2	Welding Preparation and Variables **Course outcomes met:** CO2, CO1	4.77	4.77%
Test 3	Automotive Aluminum MIG Welding Test Requirements **Course outcomes met:** CO1, CO2	4.77	4.77%
LAB: Vertical Butt w/Backing Thick	Vertical Butt with Backing weld Thick 2.5mm coupons **Course outcomes met:** CO2, CO1	2.08	2.08%
LAB: Vertical Lap	Vertical Lap or Fillet weld Thin (1.0mm) on Thick (2.5mm) coupons **Course outcomes met:** CO1, CO2	2.08	2.08%
LAB: Vertical Butt w/Backing Thin	Vertical Butt with Backing weld Thin 1.0mm coupons **Course outcomes met:** CO1, CO2	2.08	2.08%
LAB: Vertical Plug	Vertical 8mm Plug weld 1.0mm coupons **Course outcomes met:** CO2, CO1	2.08	2.08%
LAB: Overhead Butt w/Backing Thick	Overhead Butt with Backing weld Thick 2.5mm coupons **Course outcomes met:** CO1, CO2	2.08	2.08%
LAB: Overhead Lap	Overhead Lap or Fillet weld Thin (1.0mm) on Thick (2.5mm) coupons **Course outcomes met:** CO2, CO1	2.08	2.08%
LAB: Overhead Butt w/Backing Thin	Overhead Butt with Backing weld Thin 1.0mm coupons **Course outcomes met:** CO1, CO2	2.08	2.08%
Test 4	Aluminum intensive vehicle repairs (ALI01) **Course outcomes met:** CO1, CO2	4.77	4.77%
Test 5	Aluminum Exterior Panel Repair and Replacement Test (APR01) **Course outcomes met:** CO2, CO1	4.77	4.77%
LAB: Rail Assembly and Sectioning Procedure	Build an Aluminum rail using OEM fastening methods and perform proper approved sectioning procedures. **Course outcomes met:** CO1, CO2	2.08	2.08%
Test 6	Best Practices for Repairs on Advanced Automotive Steels (SPS09) **Course outcomes met:** CO2, CO1	4.77	4.77%
LAB: Vertical Lap MIG Brazing	Vertical Lap MIG Brazing visual and destructive Test **Course outcomes met:** CO1, CO2	2.08	2.08%
LAB: Vertical Butt w/ Backing MIG Brazing	Vertical Butt w/ Backing MIG Brazing visual and destructive Test **Course outcomes met:** CO2, CO1	2.08	2.08%
LAB: Vertical Slot MIG Brazing	Vertical Slot MIG Brazing visual and destructive Test **Course outcomes met:** CO1, CO2	2.08	2.08%
LAB: Verticle Open Butt MIG Brazing	Vertical Open Butt MIG Brazing visual and destructive Test **Course outcomes met:** CO2, CO1	2.08	2.08%

LAB: Overhead Lap MIG Brazing	Overhead Lap MIG Brazing visual and destructive Test **Course outcomes met:** CO1, CO2	2.08	2.08%
LAB: Overhead Butt w/ Backing MIG Brazing	Overhead Butt w/ Backing MIG Brazing visual and destructive Test **Course outcomes met:** CO2, CO1	2.08	2.08%
LAB: Overhead Slot MIG Brazing	Overhead Slot MIG Brazing visual and destructive Test **Course outcomes met:** CO1, CO2	2.08	2.08%
LAB: Overhead Open Butt MIG Brazing	Overhead Open Butt MIG Brazing visual and destructive Test **Course outcomes met:** CO2, CO1	2.08	2.08%
FINAL EXAM	Final LEC Exam **Course outcomes met:** CO1	33.30	33.30%
		100.00	**100.00%**

Course Schedule

Unit/ Week	Unit Description/Objectives	Assessment Label:Description	Due Date
1	Week 1 Lab Safety		
		Safety Test: Lab Safety Test	First Lab Day
2	Week 2 Welding and Cutting Aluminum WCA01		
	• Identifying the differences between MIG welding steel and aluminum. • Identify the different transfer methods used when welding aluminum. • Understand the aluminum MIG welding equipment.	**Test 1:** Welding Equipment Requirements Test 1	Week 3
3	Week 3 Welding and Cutting Aluminum WCA01		
	• Identify how to properly prepare aluminum substrate for proper MIG welding. • Understand the different welding technique variables when MIG welding aluminum. • Understand how to tune a MIG welder to weld aluminum. • Identify proper weld techniques that are specific to MIG welding aluminum.	**Test 2:** Welding Preparation and Variables	Week 4
4	Week 4 Welding and Cutting Aluminum WCA01		
	• Identify aluminum weld defects along with the causes and how to correct the problem. • Understand the visual inspection of MIG welding aluminum in multiple joint fit up configurations. • Identify proper destructive testing of each MIG weld in multiple joint fit up configurations.	**Test 3:** Automotive Aluminum MIG Welding Test Requirements	Week 5
5	Week 5 WCA03 MIG Welding Test Summary		
	• Perform WCA03 Lab Test	**LAB: Vertical Butt w/Backing Thick:** Vertical Butt with Backing weld Thick 2.5mm coupons	Week 14
		LAB: Vertical Lap : Vertical Lap or Fillet weld Thin (1.0mm) on Thick (2.5mm) coupons	Week 14
		LAB: Vertical Butt w/Backing Thin: Vertical Butt with Backing weld Thin 1.0mm coupons	Week 14
		LAB: Vertical Plug: Vertical 8mm Plug weld 1.0mm coupons	Week 14
		LAB: Overhead Butt w/Backing Thick: Overhead Butt	Week 14

		LAB: Overhead Butt w/Backing Thick: Overhead Butt with Backing weld Thick 2.5mm coupons	Week 14
		LAB: Overhead Lap : Overhead Lap or Fillet weld Thin (1.0mm) on Thick (2.5mm) coupons	Week 14
		LAB: Overhead Butt w/Backing Thin: Overhead Butt with Backing weld Thin 1.0mm coupons	Week 14
6	Week 6 Aluminum Intensive Vehicle Repairs		
	• Identify different types of aluminum construction found in modern vehicles.		
7	Week 7 Aluminum Intensive Vehicle Repairs		
	• Understand different types or repair process and considerations when working with aluminum.		
8	Week 8 Aluminum Intensive Vehicle Repairs		
	• Identifying aluminum intensive vehicles attachment methods and replacement processes.	**Test 4:** Aluminum intensive vehicle repairs (ALI01)	Week 9
9	Week 9 Aluminum Exterior Panel Repair and Replacement		
	• Identify various aluminum exterior panels and repair considerations.		
10	Week 10 Aluminum Exterior Panel Repair and Replacement		
	• Identify exterior panel attachment methods from the factory and fastener used in the repair process.		
11	Week11 Aluminum Exterior Panel Repair and Replacement		
	• Understand proper finishing processes of the aluminum panels.	**Test 5:** Aluminum Exterior Panel Repair and Replacement Test (APR01)	Week 12
		LAB: Rail Assembly and Sectioning Procedure : Build an Aluminum rail using OEM fastening methods and perform proper approved sectioning procedures.	Week 14
12	Week 12 Best Practices for Repairs on Advanced Automotive Steels		
	• Understanding advanced steel repair processes and considerations during the repair planning.		
13	Week 13 Best Practices for Repairs on Advanced Automotive Steels		
	• Identifying advanced steels straightening and removal methods.		
14	Week 14 Best Practices for Repairs on Advanced Automotive Steels		
	• Identify the OEM attachment methods and proper collision repair attachment methods.	**Test 6:** Best Practices for Repairs on Advanced Automotive Steels (SPS09)	Week 14
		LAB: Vertical Lap MIG Brazing: Vertical Lap MIG Brazing visual and destructive Test	Week 14
		LAB: Vertical Butt w/ Backing MIG Brazing: Vertical Butt w/ Backing MIG Brazing visual and destructive Test	Week 14
		LAB: Vertical Slot MIG Brazing: Vertical Slot MIG Brazing visual and destructive Test	Week 14
		LAB: Verticle Open Butt MIG Brazing: Vertical Open Butt MIG Brazing visual and destructive Test	Week 14
		LAB: Overhead Lap MIG Brazing: Overhead Lap MIG	Week 14

		Brazing visual and destructive Test	
		LAB: Overhead Butt w/ Backing MIG Brazing: Overhead Butt w/ Backing MIG Brazing visual and destructive Test	Week 14
		LAB: Overhead Slot MIG Brazing: Overhead Slot MIG Brazing visual and destructive Test	Week 14
		LAB: Overhead Open Butt MIG Brazing: Overhead Open Butt MIG Brazing visual and destructive Test	Week 14
15	Final Exam		
		FINAL EXAM: Final LEC Exam	Week 15

Plagiarism:

Plagiarism is the unauthorized use of someone else's material, which is then presented as being the result of one's own research or insight. Plagiarism is intellectual theft and is unacceptable in any endeavor.

Any student/students found guilty of this offense will earn a failing grade for the course.

Acceptable Attire:

- NIOSH approved safety glasses with clear lenses will be worn at all times.
- Full-toed shoes (no slippers, sandals, flip-flops, or bare feet).
- Full length pants (must extend past ankles).
- Pants must fit around waist within 3 inches of belly button.
- Shirts (no sleeveless or tank tops).
- Shirts with and without buttons on neck opening can be worn with instructor approval.
- Clothing must be reasonably snug fitting (not excessively loose, baggy, torn).
- Inappropriate slogans on clothing are not acceptable.
- Jogging clothes, sweats, or warm-ups are not acceptable.
- Acceptable headgear: ball caps or bump caps (**No** do-rags, bandanas or shower caps)
- The **Instructor has the final authority** concerning matters of dress.

Required Attire for Welding Lab:

Safety Glasses
Welding Cap
Welding Helmet
Welding Jacket *
Welding Gloves

- A long sleeve heavy weight cotton or denim shirt without pockets, or pocket flaps that either button or snap shut, maybe substituted for a welding jacket
- Due to their potential for flammability, at no time should any clothing made of synthetic material be worn in the welding lab.
- Examples: Nylon, Rayon, Polyester, or fabric blends containing these products. Athletic Suits, Track Suits, Jogging Suits, and Windbreakers, are some of the most common items of clothing made of synthetic fabric.

Athletic foot wear is sometimes made using plastic or other synthetic materials that may also be flammable.

Safety Procedures:

Students are required to participate in a safety lecture prior to performing in the laboratory portion of the course. A written test will be given to each participating student covering the presented safety materials. Students must complete the safety test with 100% accuracy prior to receiving lab assignments.

All lecture and laboratory safety rules and regulations will be followed in every detail. Failure to comply with this policy will result in dismissal from class until further notice.

Classroom and Lab Behaviors:

- Smoking in classrooms, laboratories and shops are prohibited
- Smoking is permitted only in designated areas
- Smoking is prohibited within 20 feet of a building, when permitted
- Smoking is prohibited within the fenced area surrounding the ACM and CAT Labs.
- The consumption of drinks, candy and other food items is restricted to lounge areas
- Eating or drinking in laboratories are hazardous because of the toxic nature of lab materials being handled

- Eating or drinking in laboratories are hazardous because of the toxic nature of lab materials being handled
- No horseplay at any time
- Be responsible – Be a professional

Late Work/ Test Policies:

All students are required to be present for class. However, unexpected circumstances will occur. If a student has an excused absence, death or illness in the immediate family, the student must notify the instructor of record immediately. If a test is missed, the instructor has to give permission for make up. The missed test must be made up before the next scheduled period of instruction.

An excused absence only allows for make up of missed assignments or test. The absence is recorded.

Assignments are due at the beginning of class of the set due date. Late assignments will not be accepted and a grade of "zero" will be earned for said assignment. Students who prior contacted the instructor may be considered excused.

Pop Test:

Can be given at any time by the instructor and are not make up items.

Exemptions:

Students can be exempted from a final exam if:

A. Lecture average is 90 or above
B. Attendance is perfect
C. Assignments are completed and turned in
D. Projects are complete

Cell Phone Policy:

Cell phones may not be brought into the classroom or lab as they are unsafe and disruptive to the environment.

Anyone failing to adhere to this policy will be dismissed from class and issued a non-participation grade (absence) for that period of instruction.

Departmental Awards Ceremony/ Cleanup Policy:

Each student is expected to participate in the awards ceremony and cleanup activities once the date has been identified.

Student's final exam grade is dependent upon their participation at these functions. One half (½) of the final exam grade for the course is participation. One half (½) of the final exam grade is completing the final exam for the course.

Students with unexpected circumstances can be excused by the department chair only.

TSTC school calendar identifies the end of the semester. Student break begins the day after.