### http://kingsriverlife.com/wp-content/uploads/2014/10/reedleycollege.jpg

###  *Spring 2021*

### MAG 41

### Introduction to Agricultural Welding

### Syllabus

**Instructor:** Robert Calvert

**Office Hours:** By appointment only.

E-mail: robert.calvert@reedleycollege.edu ***or*** rcalvert@selmausd.org

**Class Meeting: 2/1/21 – 5/21/21 (Census Date: 2/22; Drop date: 3/24)**

**Lecture:** Monday & Wednesday 5:00pm-6:05pm, Industrial Technology, Room 17

**Lab:** Monday & Wednesday 6:20pm-7:50pm, Industrial Technology, Room 19

**Units:** 03

**Course Description:** This course provides and introduction into the welding industry as it relates to the agricultural mechanics. Instruction in the areas of safety, welding processes, equipment and the properties of metal will be covered.

**Course Goals:**

Upon completion of this course student will be able to:

* *Demonstrate the welding processes as they relate to the agricultural field*
* *Demonstrate the ability to properly and safely use an oxyacetylene apparatus to cut, weld and braze with*

**Primary Learning Outcomes:**

The student will:

* Be able to identify hazardous issues that pertain to the agricultural welding shop.
* Be able to properly set and adjust a SMAW welding machine.
* Be able to set and adjust a MIG welding machine.
* Be able to perform welds in the flat position using E6011 rod.
* Be able to perform welds in the flat position using E7018 rod.
* Be able to properly set up and shut down the oxyacetylene apparatus.
* Be able to properly demonstrate braze welding in the flat positions using the oxyacetylene apparatus.
* Be able to properly demonstrate fusion welding in the flat positions using the oxyacetylene apparatus.
* Be able to demonstrate the ability to clean and fit their welds.
* Be able to demonstrate the ability to maintain welding machines and equipment in the agricultural shop.

**Lab Dress:** Work clothes, shop coats, or coveralls. No loose clothing. Long hair must be restrained. Closed toe shoes are required. Safety glasses will be worn at all times.

**Required Lab Equipment:**

* OSHA approved Z87.1 or higher safety glasses
* Welding Helmet w/minimum shade #10 lens (SMAW/GMAW/GTAW)
* Oxyacetylene goggles or face shield with shade #5 lens (OAC & OAW)
* Welding jacket: leather or FR rating with full sleeves
* Leather welding gloves
* Recommended
	+ Work gloves
	+ Ear plugs

**Lockers:** Lockers are available as available in the IT Welding shop. If available, students will be required to provide their own lock. Reedley College is not responsible for any lost or stolen items stored in the lockers.

**Safety:** Safety is a primary concern while working in the shop. Students that are not working in a safe manner will be required to leave the shop. This includes failure to wear adequate eye protection. You will receive instruction on the safe operation of the equipment; any unsafe operation will be dealt with accordingly. **Proof of tetanus immunization is required.**

**Required Text: Online Curriculum**

* Miller Open Book
	+ Link to add class: https://openbook.millerwelds.com/Courses/19145/Reedley-College-MAG-41/MAG-41-52492?authorizeCode=d4360c5d-97f7-45d5-a9c8-dd7b044f0ef9
* S/P 2 Welding Safety Certification
	+ Link to add class

https://sp2.org/invite/285170C1

**Students Responsibility:**

* Students are strongly advised not to miss labs since this time may be difficult or impossible to make them up.
* No makeup’s will be allowed unless by prior permission of the instructor.
* Cleanup of the shop is part of the laboratory exercise. Students not participating in shop cleanup will have points deducted from their project grades.
* No written assignments will be accepted after the last lecture meeting. Late assignments are subject to a 20% penalty. No lab projects will be accepted after the final exam.
* Handouts will be given in almost every class or laboratory.

\***You will be responsible for completing the multiple choice sections of all unit assignments on a scantron sheet (882) and turned in the following week.**

**Subject to Change:**

 This syllabus and schedule are subject to change. If you are absent from class, it is your responsibility to check on any changes made while you were absent.

**Evaluation:**

Students will be evaluated on the basis of their performance on quizzes (announced and unannounced), written assignments, unit tests, lab projects and final examination according to the following scale.

Assignments/Quizzes 30% \*\*See attached course schedule\*\*

 Lab Projects 40% \*\*See attached lab project list\*\*

 Lab participation 20%

Midterm/Final Exam 10%

Your grade in this course will be based on the following scale:

 A – 90 – 100%

 B – 80 – 89%

 C – 70 – 79%

 D – 60 – 69%

 F – 59% and below

**Attendance**

Lecture: Attendance is required and roll will be taken at each class meeting. There is no difference between an “excused” or “unexcused” absence. A “tardy” is considered an absence unless the student contacts the instructor at the end of class to change the status from absent to tardy. Two tardies will count as an absence. Any student who misses more than two weeks of class meetings within the first 9 weeks of class may be dropped from the class by the instructor (i.e., class meets two times per week, 4 absences; class meets 1 time per week, 2 absences).

Lab: Attendance in all labs is mandatory. Students must make prior arrangements with the instructor to be excused from lab. At that time, the instructor will determine, if any, make-up work will be appropriate.

Quizzes: There will be no make-ups for quizzes.

Tests: Make-up tests are limited to students who have made arrangements with the instructor prior to the required testing period or those students who have been excused by the SCCCD Dean of Admissions, Dr. John Cummings.

**Grading Policy/Scales/Evaluation Criteria**

For maximum point consideration, all written assignments and term reports should be typed and double-spaced. Lecture assignments (homework) will be accepted late up to the test for that unit of the course; however, late assignments will be penalized 1/3 of the possible points. Late laboratory assignments turned in within one week of the required due date will be accepted with a penalty equal to 1/3 of the maximum points. Any lab assignment turned in after that time up to the last regular class meeting will be accepted with a 50% penalty.

**College Policies:**

**Cheating & Plagiarism**

In keeping with the philosophy that students are entitled to the best education available, and in compliance with Board Policy 5410, each student is expected to exert an entirely honest effort toward attaining an education. Violations of this policy will result in disqualification for the course.

**Accommodations for Students with Disabilities**

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact the instructor as soon as possible.

**Work Ethic -** Most students are enrolled in college classes to obtain a quality job or to enhance their skills for advancement with their current employment situation. Employers look for a punctual, responsible individual who is prepared to go to work. Our goal is to replicate the workplace environment where a student can develop and demonstrate these desirable traits.

* Punctual: It is customary to arrive at least 5 minutes before work begins. Individuals will be terminated if they are not punctual.
* Responsible: It is expected than an employee work every scheduled work day. Individuals will be terminated if they are not responsible.
* Prepared: It is expected that an employee be prepared with he/she arrives for work. Students must have work shirts, safety glasses, and appropriate footwear to participate in the laboratory. If a student is not prepared, he/she cannot participate and will receive a zero (see “responsible”).

**Language -** English is expected to be spoken in class for the following reasons:

* All course content and materials are presented in English and class discussions all take place in English.
* All lab activities are conducted in groups and must have effective communication between all group members.
* Shop activities can be hazardous and it is vital that instructors receive feedback in English to ensure safe practices.
* This policy is designed so that instructors and all students may communicate in a common language.
* All individuals must have freedom of expression and are allowed and encouraged to communicate in the language of their choice outside of class times, including breaks.

**Behavioral Standards**

* Each student is responsible for his/her own work. Written assignments are not group assignments and no credit will be awarded for students who turn in the same work. Students suspected of cheating on tests and quizzes will receive no credit for that particular assignment and may be removed from the class.
* It is considered polite to turn off cell phones when in the classroom or shop. Please do so.
* There is no smoking allowed in classrooms, shops, or school vehicles.
* This class is set for the semester. All doctor’s appointments, interviews, meetings with counselor, and other types of appointments should be scheduled during your time outside of class.

**Important Dates**

* Washington Day Observance February 15
* Last day to drop a class and not receive a letter grade March 24
* Spring Break March 29-April 2
* Finals Week May 17-21

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| **FINAL EXAM: – Monday, May 17, at 5:00PM.** |

**Tentative Schedule:**

|  |  |  |
| --- | --- | --- |
|  | **Lecture/Assignments** | **Labs Projects** |
| * Week 1- 2/1
 | * Syllabus
* S/P 2 Welding Safety
 | * Shop Map
 |
| * Week 2- 2/8
 | * OxyFuel Welding & Cutting
* Miller Open Book Module:
	+ Miller Safety Quick Guide
 | * OFW #1 – Push Puddle
* OFW #2 – Beads w/Filler Rod
* OFW #3 – Open Corner
* OFW #4 – Butt Joint
 |
| * Week 3- 2/15
 | * **Monday: No Class**
* Miller Open Book Module:
	+ Basic Electricity Unit
 | * OFW #5 – Lap Joint
* OFW #6 – T-Joint
* OFC #7 – Cut Straight Line
* OFC #8 – Cut Bevel Edge
* OFC #9 – Pierce/Cut Round Hole
 |
| * Week 4- 2/22
 | * Miller Open Book Module:
	+ Introduction to Welding Unit
 | * OFW & OFC catch-up
* OFW #10 – Braze Butt Joint
* OFC #11 – Braze T-Joint
 |
| * Week 5- 3/1
 | * Miller Open Book Module:
	+ GMAW Unit
 | * GMAW #15 – Pad, Flat
* GMAW #16 – Butt Joint
* GMAW #17 – Lap Joint
* GMAW #18 – T-Joint
 |
| * Week 6- 3/8
 | * Miller Open Book Module:
	+ FCAW
 | * GMAW #19 – T-Joint, Thick to Thin
* GMAW #20 – Pipe to Plate
* GMAW #21 – T-Joint, Vertical Down
 |
| * Week 7- 3/15
 | * Miller Open Book Module:
	+ SMAW Unit
 | * SMAW – Pad 6013
* SMAW – Pad 7024
 |
| * Week 8- 3/22
 | * Miller Open Book Module:
	+ Trouble Shooting Processes Unit
 | * SMAW #22 – Pad 7018
* SMAW #23 – Butt Joint 7018
* SMAW #24 – Lap Joint 7018
* SMAW #25 – T-Joint 7018
 |
|  | **No School – Spring Break** |  |
| * Week 9- 4/5
 | * Miller Open Book Module:
	+ Introduction to Metals Unit
 | * SMAW #26 – Pad 6011
* SMAW #27 – Butt Joint 6011
* SMAW #28 – Lap Joint 6011
* SMAW #29 – T-Joint 6011
 |
| * Week 10- 4/12
 |  | * SMAW #30 – Butt Joint Horizontal 6011
* SMAW #31 – T-Joint Vertical Up 6011
 |
| * Week 11- 4/19
 |  | * SMAW #32 – T-Joint Vertical Up 7018
* SMAW #33 – T-Joint Overhead 6011
 |
| * Week 12- 4/26
 | * Miller Open Book Module:
	+ Cutting Processes Unit
 | * SMAW #34 – T-Joint Thin-to-Thin 6011
* SMAW #35 – Pipe-to-plate 6011
 |
| * Week 13- 5/3
 | * Miller Open Book Module:
	+ GTAW Unit
 | * SMAW Make-Ups
* PAC #12 – Cut Mild Steel
* PAC #13 – Cut Aluminum
* PAC #14 – Cut Stainless Steel
 |
| * Week 14- 5/10
 | * Miller Open Book Module:
	+ Aluminum
* Final Review & Study Guide
 | * GTAW #32 – Puddle Stainless
* GTAW #33 – Butt Joint Stainless
* GTAW #34 – Puddle Aluminum
* GTAW #35 – Butt Joint Aluminum
 |
| * **Week 15- 5/17**
 | **Finals Week: See Syllabus For Finals Schedule** | **No Labs** |