



Spring 2022

## MAG 41

# Introduction to Agricultural Mechanics

### Syllabus

Course Name: MAG 41

Section Number: 59140

Units: 03

Instructor: Scott Johnson

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Office Hours: by appointment only

Class Meeting: Mon - Fri 8:00 - 8:50 am

**Course Description:** This course provides an introduction into the welding industry as it relates to agricultural mechanics. Instruction in the areas of safety, welding processes, equipment, and the properties of metals will be covered. (2 lecture, 3 lab hours).

#### Course Goals:

- 🔥 Upon completion of this course, students will be able to: Demonstrate the welding processes as they relate to the agricultural field.
- 🔥 Demonstrate the ability to properly and safely use the oxyacetylene apparatus to cut, weld and braze with.

#### Primary Learning Outcomes:

The student will:

- 🔥 Identify hazardous issues that pertain to the agricultural welding shop.
- 🔥 Properly set and adjust a SMAW welding machine.
- 🔥 Set and adjust an MIG welding machine.
- 🔥 Perform welds in the flat position using E6011 welding rods.
- 🔥 Perform welds in the flat position using E7018 welding rods.
- 🔥 Properly set up and shut down the oxyacetylene apparatus.
- 🔥 Properly demonstrate braze welding in the flat position using the oxyacetylene apparatus.
- 🔥 Properly demonstrate fusion welding in the flat position using the oxyacetylene apparatus.
- 🔥 Demonstrate the ability to properly clean and fit their welds.
- 🔥 Demonstrate the ability to maintain welding machines and equipment in the agricultural shop

#### Secondary Learning Outcomes:

The student will:

- 🔥 Work with others in a shop environment
- 🔥 Work with and set up various welding machines for different tasks
- 🔥 Work with metal shearing and cutting equipment Work with measuring tools and perform simple assembly/repair tasks
- 🔥 Work with hand held power tools

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

**Required Classroom/Lab Equipment:**

- 🔥 OSHA approved Z87.1 or higher safety glasses
- 🔥 Long pants of denim or other flame resistant material
- 🔥 1" binder for handouts, assignments, and course materials

**Lockers:** Lockers are available in the Agricultural Mechanics building. Provide your own lock.

**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:**

Recommended Andrew D. Althouse, Carl H. Turnquist, William A. Bowditch, Kevin E. Bowditch and Mark A. . Modern Welding, 11th ed. Goodheart-Willcox Company, 2004 or newer. Students are expected to have read the assigned reading before lecture.

**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 lab 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.

**Tentative Schedule:**

	Lecture Topic	LABS	BOOK UNITS
🔥 Week 1-	Shop Safety, PPE, Ventilation, Fire, Arc Welding equipment	Safety/Shop Orientation	Chapter 1
🔥 Week 2-	Shielded Metal Arc Welding – Striking the arc, Running continuous beads	E 6011 Bead Pad	Chapter 5 and 6 and/or handout
🔥 Week 1-	Shop Safety, PPE, Ventilation, Fire, Arc Welding equipment	Safety/Shop Orientation	Chapter 1
🔥 Week 4-	Welding positions and terminology	E6011 Lap Joint Fillet	Chapter 3 and/or handout
🔥 Week 5-	Controlling distortion	E6011 Tee Joint Fillet	Handout and/or video
🔥 Week 6-	Electrode selection,	E7018 Bead Pad	Chapter 5 and/or handout
	Ferrous and non-ferrous metals	E7018 Butt Joint Groove	Chapter 21 and 22 and/or handout

🔥 Week 7-			
🔥 Week 8-	Iron and steel, Alloy metals	E7018 Lap Joint Fillet	Chapter 27 and 28 and/or handout
🔥 Week 9-	Identifying metals, properties of metals	E7018 Tee Joint Fillet	Chapter 28 and/or handout
🔥 Week 10-	Oxyfuel Equipment, setup, and operation	OFW Puddle Pad, Bead Pad with Filler	Chapter 12 and 14 and/or handout
🔥 Week 11-	Oxyfuel welding and brazing	OFW Fusion Lap Joint	Chapter 13 and 17 and/or handout
🔥 Week 12-	Weld joint design factors	OFW Fusion Butt Joint	Chapter 13 and/or handout
🔥 Week 13-	Surfacing	OFW Brazing Tee joint	Chapter 26 and/or handout
🔥 Week 14-	Oxyfuel cutting and piercing	OFW Straight Line Cuts	Chapter 15 and/or handout
🔥 Week 15-	Weld quality and defects	OFW Pierce and Cut	Chapter 30 and/or handout
🔥 Week 16-	Projects –Measurement and layout	GMAW Bead pad	Chapter 2 and/or handout
🔥 Week 17-	Projects - Sketching and Drawing and Basic fit-up and construction	GMAW Butt Joint Groove and Lap Joint Fillet	Chapter 2 and/or handout
🔥 Week 18-	Final Exam May 22	GMAW Tee Joint Fillet	Study All Materials

**\*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. The instructor reserves the right to adjust scores as it may be required throughout the semester.

Unit Assignments

10%

Tests & Quizzes	20%
Projects	40%
Final Exam	20%

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 High School Attendance Office. Test material is constructed from class discussions, assigned readings, guest lectures, video presentations, and special assignments. Tests will consist of true/false and multiple choice questions. Unless the student receives prior approval from the instructor, no make-up tests will be allowed.

### **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 or 2 weeks past the deadline, whichever is sooner; however, late assignments will be penalized 1/5 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 1/5 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.

#### **Cheating is:**

- A. Copying someone else’s class work or letting someone copy you, when your teacher tells you that the work is to be done on your own (includes asking/telling orally).
- B. Copying answers on a test or letting someone copy from your test (includes asking/telling orally).
- C. Using a cheat sheet or unauthorized notes.
- D. Turning in someone else’s work as your own.
- E. Text messaging and multi-media messaging.

### **Consequences, Per School Year:**

**1st Offense** - The teacher shall send a referral to office. Student shall receive an “F” or zero on the work or the test and a one (1) day suspension or Saturday School, parent contact required.

**2nd Offense** - The teacher shall send a referral to the office. The student shall receive an “F” or zero on the work or the test and a one (1) day suspension with parent contact required. Student placed on honesty contract. A high school student shall be removed to a study hall/or alternative class with a “W/F” for the semester.

**3rd Offense** - Recommendation for transfer.

Instances of cheating need not be confined to one (1) class. Each of the three (3) offenses could happen in a different class. Any student who is transferred to a study hall/or alternative class and then required disciplinary removal from the study hall/or alternative class shall be transferred to an alternative school site/program.

Each student is expected to assist in the overall environment of the classroom making it conducive to learning.

### **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.

**Reedley College is committed to creating accessible learning environments consistent with federal and state law. To obtain academic adjustments or auxiliary aids, students must be registered with the DSP&S office on campus. DSP&S can be reached at (559) 638-3332. If you are already registered with the DSP&S office, please provide your Notice of Accommodation form 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 that an employee works 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.
- 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, chewing tobacco, alcohol, or drugs 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 for Spring 2022

DATE	DAY	EVENT / DEADLINE
3-Jan	(M)	Campus re-opens after Winter Break
7-Jan	(F)	Last day to add a full-term Spring 2022 class in person or online through WebAdvisor 5:00 p.m.
10-Jan	(M)	Start of Spring 2022 semester
Jan 10 - Mar 11	(M-F)	Short-term classes, first nine weeks
17-Jan	(M)	Martin Luther King, Jr. Day observed (no classes held, campus closed)
21-Jan	(F)	Last day to drop a Spring 2022 full-term class for full refund
28-Jan	(F)	Last day to register for a Spring 2022 full-term class in person w/ authorization code
28-Jan	(F)	Last day to drop a Spring 2022 full-term class to avoid a "W" in person
30-Jan	(Su)	Last day to drop a Spring 2022 full-term class to avoid a "W" on WebAdvisor
30-Jan	(Su)	Last day to add a Spring 2022 full-term class with an authorization code on WebAdvisor
18-Feb	(F)	Lincoln Day observance (no classes held, campus closed)
21-Feb	(M)	Washington Day observance (no classes held, campus closed)
11-Feb	(F)	Last day to change a Spring 2022 class to/from Pass/No-Pass grading basis
1-Mar	(T)	Deadline to apply for graduation for Spring 2022 completion
11-Mar	(F)	Last Day to drop a full-term class (letter grades assigned after this date)
Mar 14 - May 20	(M-F)	Short-term classes, second nine weeks
Apr 11 – April 15	(M-Th)	Spring recess (no classes held, campus open)
15-Apr	(F)	Good Friday observance (no classes held, campus closed) (classes reconvene April 18)
May 16-20	(M-F)	Spring 2022 final exams week
20-May	(F)	End of Spring 2022 semester/commencement
30-May	(M)	Memorial Day holiday (campus closed)

\*\* Withdrawal (W): A student will be assigned a grade of "W" for classes dropped on or after 20 percent of the duration of the class, up to and including 50 percent of the duration of the class. After the 50 percent point, the student must receive a letter grade other than a "W" (i.e., A, B, C, D, F, I, P, NP). Check with your instructor for the deadline applicable to your class.