Agriculture Engineering III - Mr. Ravy
Clovis East High School
Rm 908 Phone: 327-4330
Email: gregoryravy@clovisusd.k12.ca.us

Agriculture Engineering 3/MAG 44
In this course, students will learn advanced welding procedures, learn electrical wiring principles, create portfolios, gain job seeking skills, and use computer aided drafting and design software. Students will learn to design, budget for, and build projects. Agriculture Mechanics and Engineering III serves to bridge the gap between high school and community college technical training classes, as well as help the student feel confident in his or her understanding of the agricultural mechanics industry. This semester is Dual Enrolled with Reedley College MAG 44 and the objectives and course topics from that outline are included below.

CATALOG INFORMATION
CourseID: MAG 44 **Title:** Agriculture Welding Fabrication **Effective Term:** Fall 2015
Discipline:
Catalog Description:
This course will provide entry level instruction on welding fabrication. Instruction will be provided in the areas of welding techniques, welding plans and blueprints, cutting, fitting, proper tacking procedures, squaring, and finishing.

Prerequisite:
Recommended: Successful completion of both semesters of AME I and AME II with a "C" or better or instructor approval.

COURSE OBJECTIVE:
This is the third class in the Agricultural Mechanics Pathway program. This curriculum is focused on real world projects which creates a bridge between both industry and community college knowledge and skills. The student will learn shop safety and procedures concerning advanced welding processes, basic machining, tool usage, tool and equipment repair, fabrication, and design. Students will build on prior knowledge from pathway courses and further develop their skills. Students will learn whole-project scope of operations, gain employability skills and have the opportunity to prepare for certification.

GOALS/LEARNING OUTCOMES:
Upon completion of this course the student will successfully:

A. Become familiar with career opportunities relevant to the broad industry of Agriculture Mechanics.
B. Utilize appropriate trade terminology and demonstrate basic hands-on shop skills as applied in the workplace.
C. Explain shop safety and workplace hazards, identify and explain hand and power tools and their uses.
D. Identify and explain common structural materials and shapes used in Ag Mechanics.
E. Identify and explain welding equipment/procedures and demonstrate advanced SMAW and GMAW procedures.
F. Utilize CAD software to design and plan projects in 2D and 3D.
G. Identify and explain CNC plasma cutting equipment and procedures and utilize CNC plasma to create a project.
H. Create a career portfolio, develop job-seeking and employability skills, and learn record keeping skills.
I. Engage in opportunities for career/leadership development.
J. Practice and implement critical thinking skills through the use of technology, individual and group projects, and workplace simulation activities.
K. Participate in relevant FFA competitions to assess classroom skills and theory.

IF TIME:

L. Identify and explain electrical system components and demonstrate 240/480V electrical wiring procedures.
M. Become familiar with machining processes and equipment including mills, lathes, and CNC machines.
N. Utilize machining equipment properly to create accurate parts or projects according to plans.
O. Identify and explain GTAW welding equipment and procedures, demonstrate GTAW basic welds.

MAG 44 Objectives: (including crossover with AE3 objectives)
Student Learning Outcomes:
Upon completion of this course, students will be able to:
1. Use acquired knowledge and skills to design equipment and tools.
2. Use acquired skills to fabricate equipment and tools from a set of designs.

Objectives:

In the process of completing this course, students will:

1. Demonstrate proper safety welding procedures relating to welding and fabrication.
2. Prepare metal and material for welding
3. Demonstrate the proper cutting techniques used to cut metal
4. Demonstrate proper welding techniques using shielded metal arc welding (SMAW) and gas metal arc welding (GMAW)
5. Select proper materials and supplies to construct a project
6. Develop basic drawings and materials lists
7. Select and order appropriate materials
8. Understand the terminology associated with welding fabrication

Textbook Information

Agriculture Mechanics: Fundamentals and Applications, Excerpts from Metal Fabrication Technology, AISC Steel Construction Manual, Sense Welding Trainee level 1 and 2 -provided in class

Recommended Materials: Students should have computer access, writing utensils, and paper, closed toed shoes with rubber soles and solid tops, and jeans or canvas work pants (for skill activities). Handouts and technical information will be provided by the instructor on google drive.

Course Fee

This course has potential costs associated with projects. Students will be required to pay for materials and consumables used in the construction/repair of projects that will be **kept** by the student. THIS ONLY APPLIES TO ITEMS BUILT DURING SKILL SESSIONS IN SMALL GROUP PODS AND WILL BE REVISITED WITH MORE INFORMATION.

SCHOLASTIC DISHONESTY:

Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. All work submitted MUST BE YOUR OWN. Penalties and/or disciplinary proceedings may be initiated by Clovis East High School against a student accused of scholastic dishonesty.
"Scholastic dishonesty" includes, but is not limited to, cheating on a test, plagiarism, and collusion.
Cheating of ANY kind will result in loss of credit on the assignment or project and appropriate disciplinary action according to the student handbook and C.E.H.S policies.

Student Expectations

You are enrolled in a Technical Education class to obtain a marketable skill that will enable you to better prepare yourself for future employment. Your attendance, behavior, and dress are expected to be the same as required in the workplace. If your classroom behavior creates an unsafe environment in the classroom and/or causes damage to the equipment, CUSD may take steps to remove you from the class. Students are to:

- engage with teacher and peers during the class period
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Course Requirements and Grading Policy

A. Attendance Policy:

Students are expected to attend all classes regularly. Students are responsible for material covered during their absences, and it is the student's responsibility to consult with the instructor for make-up assignments.

- log-on daily, each period, on time
- enable video the entire class period with face shown
- use first and last name as your computer Zoom name (unless approved by teacher)
- be seated in an appropriate learning space (e.g. desk, table, counter, quiet space etc.)

- **"COVID Positive/Quarantined Students:** Students who are COVID positive will still attend classes via Zoom/Google Classroom, if health situation permits. Parents must communicate with the main office if they are unable to attend class or complete assignment due to their illness. Students who are isolating or under quarantine who are asymptomatic are still required to complete assignments via Google Classroom or Zoom into class if their teacher provides a Zoom link."

- **"Room/Zoom:** Hybrid students may be required to Zoom in for classroom instruction during asynchronous time. Students grades may be affected if they are not present during that time."

Upon our return, you must be in your seat before the tardy bell rings. Think of this class as your job; you could not continuously be late to work without getting fired. Class attendance is checked daily by the instructor.

B. Lab Requirements: **Applies to skill-pod activities on-site.**
Students must complete lab assignments, use tools/equipment safely and correctly, and wear proper clothing/equipment at all times. Students must complete daily cleanup jobs. These requirements contribute to the daily participation and shop conduct portion of the grade.

C. Dress Code:
Students will be expected to attend class following CUSD dress code at all times whether in person or in video conference. Skill pod/shop attire must be correct safety wear at all times.

D. Electronics and Technology:

- Cell phones and other devices are very disruptive to class, and are not to be used for calls, texts, pictures, music, etc. in during class or shop. Students are to abide by the Technology Agreement form and notify teacher when having technology issues See student handbook for school electronics policy and listen for technology-use cues from the instructor; a red-yellow-green system will designate appropriate technology-use in in-person instruction.

E. **Skill Pod Shop/Class Guidelines: Applies to skill-pod activities on-site.**

1. Safety glasses must always be worn when working in the shop. Failure to wear safety glasses will result in a loss of shop privileges.
2. Eating and drinking is **NOT** allowed in the Ag. Shop. Only bottled water is ok in the classroom.
3. Students are to pass a safety test and follow all safety rules set forth by the instructor
4. Students are **NOT** to enter the instructor's office/workspace without permission
5. Students are **NOT** to leave the shop/classroom without the instructors' permission and a written pass
6. Students must have permission before using any building materials or equipment.
7. All projects built in the shop must be paid for in full before they can be taken home.

STUDENT EVALUATION:
To determine completion of the course, the instructor will assign grades for all exams, assignments, lab activities, and practical exams. Assignments must be submitted on time to receive full credit. Each day an assignment is late will result in a loss of 10% of possible credit. Assignments more than 2 weeks late WILL NOT receive credit unless prior arrangements are made.
Students are to:

- actively participate in online learning the entire time with teacher, support staff, and peers
- stay on pace with daily assignments
- take assessments online as directed by teacher
- have access to laptop/Chromebook and internet for work completion (devices available through the site)
- have daily interaction with teacher via online learning, email, google classroom etc.

GRADE BREAKDOWN

1. Exams – 13%
2. Quizzes – 12%
3. Projects and lab assignments – 25%
4. Class and Shop participation – 15%
5. Classwork and written assignments – 12%
6. FFA/SAE and Record Book – 10%
7. Final Exam – 13%

GRADING SCALE: Based on percentage
100-90=A
89-80 =B
79-70 =C
69-60 =D
59-0 =F

Make-up policy
Consult the instructor BEFORE missing any non-illness time to set up make-up work or tests. See the instructor ASAP after missing class due to illness to make arrangements for illness make-ups.

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COURSE OUTLINE: SPRING 2021
Lecture Content:

Units of instruction	**Lab Content:**
Shop safety and orientation	**LABS:**
Welding Safety	Safety orientation LAB
Introduction into joining and cutting metal	Metal Cutting and Preparation LAB
Review of SMAW	Material Layout/Equipment Selection LAB
Review of GMAW	Cutting/Fitting LAB
Cutting metal	GMAW Welding Multi Week LAB
Designs	SMAW Welding Multi Week LAB
Properties of Metal	Project Plan LAB
Designs of welded units	Bill of Materials LAB
Project Plan Design	Project 1 Multi Week LAB
Bill of Material	Project 2 Multi Week LAB
Finishing a fabrication project	

Projects, Assignments, Portfolios, Service Learning, etc.
ASSIGNMENT:
A requirement of this course is the creation of a portfolio including work samples, resume and cover letter, job application, and letters of recommendation. The instructor will assist you in completing this portion of the course.

ASSIGNMENT:
Students will attend or participate in at least 3 FFA activities per semester to fulfill the 10% FFA/SAE portion of their grade. Students will be given every available opportunity to meet this requirement. Extra FFA participation is the **ONLY** extra credit possible.

ASSIGNMENT:
Students will make significant progress on or complete a SAE (Supervised Agriculture Experience) project throughout the year. Records will be kept on the hours and dollars spent, and any dollars earned from the project using the AET system online. This requirement is included in the 10% FFA/SAE component of the course. With 0 FFA/SAE participation, the highest possible grade is a **B+, assuming completion of all other work.**

Shop Policy:
Students will conduct themselves in a professional manner and treat the shop environment as a place of business/employment. Failure to conduct oneself appropriately will be cause for loss of shop privileges. No outside projects will be allowed without PRIOR approval by the instructor.

Other Student Information (clubs, tutoring, web resources, etc.)
An after-school program may be available for additional time on projects, class work, exams, and enrichment activities. Tutorial times will be announced by the instructor.

Class Contract – You and your parent may print and sign this page and submit OR complete the Google form

I have read and understand all the contents of the syllabus for the Agriculture Mechanics & Engineering 1 class. By signing below, I agree to follow the rules and give my best effort to achieve a passing grade.

_____ Click to google form
Student Signature

As the parent/guardian of the student listed above, I have read and understand all the contents of the attached syllabus. By signing below, I agree to encourage my student to follow the guidelines that have been set. I am now aware of what Mr. Ravy expects from my student.

_____ Click to google form (SAME FORM SIGNS BOTH)
Parent/Guardian Signature

Please complete the google form acknowledgement on or before August _28____, 20___.
If I have not received it by that date parents will be otherwise contacted.