

Agriculture Mechanics/Small Engines

2025-26 Course Syllabus

INSTRUCTOR INFORMATION

Instructor

Carolyn Wright

Email

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Class Location & Phone

Innovation Center 1162
585-268-7900 ext. 1162

GENERAL INFORMATION

Grade Level: 9-12

Course Duration: Full year, meets once daily, counts as 1 AgTech credit

Description:

In Ag Mechanics/Small Engines students will learn how mechanical and precision systems function. The course will expose students to the newest agricultural technologies that support equipment industries while connecting them with future employers. We will discuss safety pertaining to agriculture equipment systems, technician expectations, how to use precision measuring tools, drive train components, final drives, and precision systems and applications. This course will prepare students to enter the ag technician field through hands-on identification and cause and correction of equipment failures in mechanical and precision systems. During the second half of the year students will focus on small gas engines. Students will acquire technical skills including measurements, engine teardown/assembly, troubleshooting, generating work/repair orders, and using a service manual. Technical skills during this course prepare students for home ownership and careers in diesel, outdoor power equipment, and agricultural equipment maintenance.

COURSE MATERIALS

Required Materials/Resources

- iPads and Laptops
- 1 subject notebook
- Shop- Toolboxes, Tools, Engines, etc.
- Positive, ready-to-work attitude
- Pencils (and pens)
- Binder
- Safety Glasses (provided)

EXPECTATIONS

Do the right thing, even when no one is watching

1. Be Respectful:

Treating others with the same **value**, **appreciation**, and **consideration** as you would for yourself.

- Create a **positive environment**. **DO NOT COMPLAIN**.
- **Raise your hand** to contribute to discussion.
- **Use appropriate language**.
- Hoodies and sunglasses are not permitted. Hats may be permitted per teacher discretion.

- **Take care of class materials**
- **No cell phones or unauthorized electronic device usage.**
- Only leave class if there is an emergency.

2. **Be Responsible:**

Taking care of the items **entrusted** to you and the materials **provided for you**. Looking out for the welfare of others.

- You are responsible for learning material.
- Clean up after yourself and put things away where they belong
- **Know when projects/activities are due.**
- Be a good **digital citizen**.
- If you are absent, make sure to get the work you missed.
- **Use your time wisely.**
- Always watch out for the **safety of others**.
- **DO NOT USE TOOLS FOR PURPOSES THEY AREN'T INTENDED FOR.** This includes putting anything in the Table Vices that does not belong. If I see you do this, you will lose participation points for the day. Additional consequences may be enforced.

3. **Be Ready:**

Be **prepared** for any situation or challenge. **Think ahead and plan.** Meet your **deadlines**.

- Come equipped and on time for class (have your iPad charged, a pencil/pen, etc.).
- **Position of engagement-** Posture, body language, eye contact.
- Participate in class discussions and group activities.
- Always follow all **emergency policies**.

4. **Be Resilient:**

Never say CAN'T. Think positive and **TRY, TRY, AGAIN**. Don't accept defeat the first time.

- **Be teachable.**
- Accept failure and mistakes then try again.
- **Be confident** in your abilities
- Step up and help or lead when called.

Disruptions:

Any behavior, determined by me, considered to be damaging to the learning process of students or the instruction from the teacher.

These will result in:

1. ONE warning: Pay attention to subtle cues. These are to save you any embarrassment.
2. Parent contact and or a lunch detention. Referral to the office if necessary.
3. Removal from the classroom

GRADING POLICY

Projects - 40% of class grade:

All projects will be introduced during class and class time to complete the projects will be provided. If the class time provided is not adequate for students to complete the project, additional time may be added at the instructor's discretion. Otherwise, students may be required to come down during free periods or work on it at home. If this is the case students will be notified in advance. All projects will

be due at the end of the day (EOD) on the assigned deadline to be eligible for full credit. It is totally acceptable to turn in projects early or during class on the day that they are due. All projects will receive feedback from the instructor during the project and a final commentary at the end of the project when students receive their grades. All projects will be graded using a single point rubric. **Projects may be submitted in person or on TEAMS. Check the assignment details to be sure.**

Activities/Classwork - 30% of class grade:

This category includes participation in class discussion, attendance in class, behavior in class, and general participation during scheduled class time - project work, note taking, responses to analysis and conclusion questions for each activity, etc. Lost time of classwork may be made up by meeting with the instructor during a free period to discuss important topics covered and to make up any activities completed. Students receive 20 points per day for a total of 100 points at the end of the week. Unexcused absences will result in 0 points for the day.

Quizzes - 20% of class grade:

Quizzes will be announced **at least 2 days in advance** of the day it will be given. Quizzes are based on the course material covered during class. Taking good notes is encouraged during class because notes can be used on any quiz unless otherwise stated by the instructor. Learning is still happening during a quiz and your notes help facilitate that. Quizzes will generally be around 10 questions and may be a mix of short answer, matching, multiple choice, etc. Quizzes may be given on paper or via Microsoft Forms.

Homework - 10% of class grade:

This **IS NOT** busy work. Any homework that is assigned is designed to help move the course material along by serving as additional practice or preparation for the material that is to come during class discussions. This may include vocabulary, short readings, or practice worksheets. Homework is expected to be done by the start of class on the day that it is due, and it will be looked at for completion. Students will receive a grade of complete or incomplete. No late work will be accepted. At any time throughout the year, it is your responsibility to finish any work not completed in class for homework if additional class time will not be given or class time is not sufficient to finish it.

Final Exam/Practical - 20% of yearly grade:

During the final 2 weeks of school a final practical evaluation will be conducted. This will span multiple days and cover most of the topics covered in class. This **IS NOT** a traditional written exam (although some questions may be mixed in); you will be expected to move from station to station and perform the skill described/asked about at that station. The practical is designed to evaluate your ability to successfully complete the different skills practiced throughout the year.

LATE WORK

Late work will be assessed a 10% late penalty per day, taken off the maximum point value for the project. Late projects turned in no later than **2 days** before the end of the quarter will receive an automatic 65% if all requirements are met. All projects will receive feedback from the instructor during the project and a final commentary at the end of the project when students receive their grades.

There will be no class time for students to finish late work. Students must complete it on their own time - during study halls, after school, or at home.

ABSENCES/MISSED WORK

Due date extensions will be granted in the same measure of days you were absent. If you were absent (3) days, your due date will be extended (3) days. This does not apply during the last week of the quarter without a doctor's note or parent contact.

You are expected to ask me what you missed while you were absent

If students have questions about any missed work, they can ask to come down during my free period(s) and I will help them.

INELIGIBILITY

Placement on the Ineligibility List (Inel) can be narrowed down to two factors: Learner Behaviors and Class Expectations. In the event this must be used, we will have discussed changes that need to be made to learner behaviors and/or meeting class expectations long before you are assigned to the Inel list. Failure to make those changes will result in placement on the Inel list. (See the student handbook for policies and restrictions). Attitudes towards success are directly related to performance in class and meeting expectations.

SUCCESS

Completion of this course successfully means you have experienced new challenges, exercised new or existing skills, and gained knowledge about the agricultural mechanics field. **The degree to which you want to succeed is dependent entirely on your effort as a student. You will get out of the course what you put into it.**

COURSE UNITS

**The instructor reserves the right to modify and/or make changes to the course schedule and topics covered at any time.*

| Unit | Topic | Time | Assignments |
|-------------|---|-------------|--|
| 1 | Safety & Expectations (SGE Lesson 1.1 & 1.2) | September | Activity 1.1.2 Safety Contract Project: Safety Standards Checklist & Evaluation Activity 1.1.5 PPE Purpose & Hazards Activity 1.1.6 Plan of Action Activity 1.2.1 Near Miss Report Activity 1.2.2 Technical Employability Activity 1.2.3 SDS Protocols Project: Safety Analysis of Machines (Small & Large) |

| Unit | Topic | Time | Assignments |
|------|---|-----------------------|--|
| 2 | Agricultural Equipment (AEMT Lesson 1.1 & 1.2) | September/ October | Activity: Local Equipment Activity: Technical Records Activity: Bolt Sizes & Gauges Activity: Mic'd Up Activity: Universal Connections Activity: Chains & Belts Activity: Field Experience Activity: PowerPortal - Pick List Activity: Digital Multimeter Op Communicating Services |
| 3 | Drive Systems: Drive Train Components (AEMT Lesson 2.1) | November | Activity: Manual Transmission Activity: Clutch Performance Activity: Speed & Torque Activity: Bearing Replacement Project: Machine Gears Activity: Worn Gears |
| 4 | Drive Systems: Final Drives (AEMT Lesson 2.2) | December | Activity: Differential Approach Activity: Planetary Power Activity: Tapered Bearing Activity: Find a Tire Activity: Optimizing Performance Project: Drive Train Repair |
| 5 | Electrical Systems (AEMT Lesson 4.1) | January | Activity: Types of Circuits Activity: Directional Flow Activity: Charging System Activity: Charging Analysis Activity: Variable Resistor |
| 6 | Engine Operation (SGE 1.2.5, 1.2.6 & 2.1) | February | Activity: Machine Safety & Op Activity: PowerPortal Navigation Activity: Internal Combustion Activity: Engine Systems Activity: Systems Test Activity: Engine Energy |
| 7 | Engine Disassembly (SGE 2.2) | March | Activity: Sequential Order Activity: Carburetor Function Project: Fuel Efficiency |

| Unit | Topic | Time | Assignments |
|------|---------------------------------|-------|--|
| | | | Activity: Systems Controls Activity: Machine Specifications Activity: Functional Components |
| 8 | Engine Assembly (SGE 2.3) | April | Review: Bolt Size & Gauge, Micrometer Use Activity: Reject Sizes Activity: Bearing Lubrication Activity: Torque & Sequence Activity: Start Your Engines |
| 9 | Diagnostic Process (SGE 3.1) | May | Activity: Replacement Parts Activity: Field Experience Project: Communicating Services Problem: Engine Service |

OTHER CLASSROOM POLICIES

Cell Phones/Backpacks

- Cell phones **will not be used**. They should be turned off and stored in your lockers or in your backpacks - NOT ON YOUR PERSON.
 - **This is the one and only warning.** If I see a cell phone out, it will be confiscated by me and held in the office for the remainder of the day.
- Backpacks will be hung on the backpack rack- this way they are easily accessible but won't present a tripping hazard.
- iPads and laptops should only be used when clearly stated by the instructor.

Bathroom

- Students must respectfully ask to use the bathroom during class.
- Students will sign out and sign back in when leaving and returning respectively.
- Students may be asked to wait until I finish providing instruction or am at a good stopping point before leaving for the bathroom.
- Only **ONE** boy and **ONE** girl will be allowed to use the bathroom at the same time.
- If students spend more than 10 minutes of class in the bathroom their participation grade will be impacted.

Food/Drink

- Students are allowed to bring water bottles to class as long as they have a closed top and cannot be spilled.
 - **WATER** only will be allowed in class
- No snacks will be allowed during class primarily for safety as students work with engines, grease, electrical elements, etc.

*If water bottles become a problem in class such that it hinders positive learning for other students, I reserve the right to take away the privilege of bringing water bottles to class. If this privilege is severely abused, further disciplinary action may be implemented.

To the parents/guardians of Miss. Wright's students:

It is an honor and privilege to have your student in class, and a responsibility I do not take lightly. The guidelines outlined above are in my best effort to create an environment that is safe, fair, and clear to all. Once you have had a chance to review this syllabus with your student, please sign the last page and have your student return it to class during the first week of school. If there are any questions regarding these policies, or other concerns you or your student may have, please feel free to contact me by email at cwright@genvalley.org, by phone at 585-268-7900 ext. 1163, or message me on Parent Square.

Best Regards,

Carolyn Wright

SYLLABUS

Parent Contact / Signature Form

To be filled out by parent/guardian:

Parent/Guardian Name(s): _____

Email Address: _____

Phone Number (Circle one: Home or cell): _____

Best time to contact you: _____

How do you prefer to be contacted (circle one): Phone Email Text

(Parent) Are there any areas of technology, agriculture, natural resources, or industry that you are particularly proficient or skilled in?

I have read and understand course procedures and grading policies for the listed below. I/we will agree as parents/guardians to do my /our part in helping our student do the best they can in being successful in this course during the year. I /we will contact Miss. Wright with concerns or questions throughout.

Course Name

Parent/Guardian Signature

Date

Student Name

Student Signature