Fundamentals of Ag Mechanical Technologies CTE18401

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Fundamentals of Agriculture Mechanics covers basic agricultural knowledge in the topics of electricity, welding, agricultural technology and agricultural mechanics. This broad array of subjects will equip the student with the basic knowledge needed to be employed in the agricultural mechanics industry and will also introduce them to the basic understanding of agricultural mechanics systems.

Materials Needed for Course:

- Computer with access to the internet
- An Agricultural Mechanics: Fundamentals and applications by Ray V. Herren Textbook (Provided by DIAL) ISBN: 978-1-285-05895-5
- Access to several different welding machines as stated in the course work (not necessary, can work around if you contact the instructor to discuss)
- An open mind and organizational abilities

If you need extra help:

- Available at any reasonable time (i.e. not 3 a.m.) to discuss and further explain learning contact.
- Phone calls
- Skype, if necessary.
- Please contact via e-mail (taylor.krause@k12.sd.us) if you have any issues or questions.

Where to find Class Resources:

- All resources and assignments can be found on Schoology. This includes additional reading, videos, and power points.
- Access Code: 8W8N-PJPW-GDBF5

Things to remember:

- Communication is key, if you cannot complete one of the assignments because you don't have access to the needed material let Mrs. Krause know and we will work on an alternative assignment for you.
- You will not get credit for late assignments; however, you can fill out the extension application, and depending on your need/ reason for extension you may get an extension on your assignments. You only have three extension applications to use, so plan wisely. These applications can also be declined, so do not submit a poorly made application.

Also, do not submit the application the day the project is due. You have three of these to use (that are approved). For example, if you submit three throughout the semester and only two are approved, you can submit a fourth application, and depending on if that is approved you could receive your third approved extension. Any questions, let Mrs. Krause know.

- If you are going to be successful in this class, you must be organized and a self-starter. No one will be telling you when assignments are due, so make sure you keep a close eye on the due dates!
- Most of this course closely relates to the textbook and some assignments are taken from the textbook.

Standard	Standard Description	Learning Objective
FAM 1 – Applying Safety Practices	FAM 1.1 – Explain the safe operation and servicing of machinery and equipment	Students will be able to explain the safe operation and servicing of machinery and equipment by identifying safety practices needed when operating machinery and tools
	FAM 1.2 – Demonstrate safe operation of construction/fabrication tools	Students will be able to identify ten safety practices that they will apply when using construction and/or fabrication tools
FAM 2 – Identify maintenance procedures and schedules for mechanical equipment, power and agricultural technology	FAM 2.1 – Identify parts and explain functions of various mechanical systems	Students will be able to identify 8 tools that are used in servicing machinery or construction/fabrication tools. They will be able to identify all important parts of these tools and will be able to explain how they are operated
	FAM 2.2 – Investigate common maintenance schedules and practices for equipment	Students will be able to maintenance and fix a common tool with up to 85% accuracy
	FAM 2.3 – Troubleshoot problems in mechanical systems	Students will be able to use a grinder to sharpen a knife, wood chisel, cold chisel, center punch, hatchet and twist drill. They will also be able to identify common problems that people using these tools often experience up to a 75% accuracy

FAM 3 – Demonstrate basic skills in project planning and metal fabrication	FAM 3.1 – Create sketches of metal projects	Students will be able to create a neat, complete and accurate sketch according to modern standards of professional sketch artists. They will be able to do this up to a 90% accuracy, only making up to one mistake on their sketch
	FAM 3.2 – Demonstrate basic welding principles and techniques. Includes: MIG, SMAW, Oxy-fuel cutting, and TIG	Students will be able to create a Lap weld, t-weld, and joint weld with up to 95% accuracy
	FAM 3.3 – Employ metal fabrication principles to create a metal project	Students will be able to complete a quality metal fabrication project using standard safety principals and the best practices to create a quality project. Students will be able to use the proper techniques up to 90% accuracy
FAM 4 – Apply electrical principles in agricultural applications	FAM 4.1 – Recognize the components and functions of electrical systems	Students will be able to recognize the functions of electrical systems and their purpose with up to 85% accuracy
	FAM 4.2 – Demonstrate fundamental principles of electricity	Students will be able to create a single pole switch and draw a single and double circuit with up to 90% accuracy from memory
FAM 5 – Investigate emerging agricultural technologies	FAM 5.1 – Investigate new and/or existing technology in agriculture. Includes: GPS, GIS, drones, robots, etc	Students will be able to identify and communicate one emerging agricultural technology with 95% accuracy.
FAM 6 – Develop employability skills related to the Power, Structural and Technical Systems Pathway	FAM 6.1 – Develop soft skills to enhance employability	Students will be able to identify 5 soft skills ag mechanics need to be successful employees with up to 95% accuracy

Grading Rubric and Expectations

Letter Grade	Percentage	Expectations
A	90-100	Student will have less than one missing assignment. They will also complete coursework on time and will have good communication with the instructor. Student will be involved in class discussions and will demonstrate a thorough and in-depth understanding of the coursework. The student also reads and takes note on the units in the textbook.
B	80-89	Student has one to three missing assignments. They have missed the deadline on one or two assignments and have had average communication with the instructor. The student also is not very involved in classroom discussion and fails to read the units in the textbook that will aide classroom learning.
C	70-79	Student performs well on daily work but receives average (Bs and Cs) on quizzes. Student also has poor communication with the instructor and fails to participate in many of the online discussions. They very seldom read the units in the textbook and hardly ever take notes.
D	65-69	Student performs poorly on daily work as well as quizzes. They have several missing assignments and do not participate in class or use the resources provided. They have been late or are missing a project assignment. They never read the textbook, PowerPoints, or take notes.
F	0-64	Student fails to participate in class at all, frequently is late handing in assignments, if they are doing them at all. They have little to no communication with the instructor and fail to participate in any way in the class.

** Advice: if you participate and ask questions, your grade will reflect your effort.

** All due dates are final, unless you have requested an extension. Keep in mind that this is not taking into consideration snow days and some holidays. If an assignment is due on a specific date, it is due on that date regardless if you didn't have regular class at your school that day. Be responsible and plan ahead!