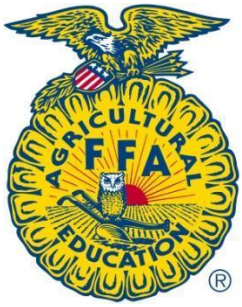
Dale County High School

Agri Science Education



Course Syllabus
For
Agricultural Industrial Maintenance

Instructor – Mr. Jones
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Instructional Philosophy:

Agriscience Education places a new emphasis on the integration of academics into existing agriculture/agriscience curricula, especially in the areas of science and mathematics. As a result of this emphasis, new programs are included in the Agriscience Education curriculum. This new direction serves two major purposes: (1) to provide students with the knowledge and skills needed to enter and advance in agricultural careers and (2) to enable students to function as informed citizens in today's society. The Agriscience Education mission is to prepare students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber, and natural resources systems.

Course Description:

Agricultural Industrial Maintenance prepares students for entry-level employment or advanced training in the agricultural industrial maintenance technologies field. Topics include proper use of power and stationary equipment; interpretation of technical information; basic electricity, construction, plumbing, hydraulics, and pneumatics; basic mechanical theory and application; basic welding theory, setup, and application for metal inert gas (MIG), tungsten inert gas (TIG), and shielded metal arc welding (SMAW); basic oxy-fuel use, setup and application; and basic plasma theory, setup, and application. This course is designed to be taught as a prerequisite for Poultry Industrial Maintenance and Forestry Industrial Maintenance. Foundational standards are an important part of every course. Through these standards, students learn and apply safety concepts, explore career opportunities and requirements, practice the skills needed to succeed in the workplace, develop leadership and take advantage of the opportunities afforded by Career and Technical Student Organizations. Also, students will learn and practice essential digital skills, and participate in supervised projects which allow them to put into practice the skills and knowledge acquired in the classroom, shop, and lab. The foundational standards are to be incorporated throughout the course.

Prerequisites: Fundamentals of Agriscience
Construction Framing

Career Technical Student Organization (CTSO): FFA

FFA is a dynamic youth organization that is an intra-curricular component of and agriscience program. FFA offers a variety of opportunities for members to get involved through leadership conferences, scholarship opportunities, and competitive events. The FFA Mission is to make a positive difference in the lives of young people by developing their potential for premier

leadership, personal growth, and career success through agriscience education. To find out more about FFA, please visit www.alabamaffa.org or www.ffa.org.

Course Goals:

1. To provide education in and about agriculture from the perspective of science and technology
2. To prepare students for employment in an agricultural career
3. To prepare students for entry into postsecondary programs in agriscience fields
4. To provide education about the role of agriscience in the conservation of the Earth's natural resources
5. To develop life and employability skills essential for successful employment
6. To develop skills needed to fulfill occupational, social, and civic responsibilities

Embedded Numeracy and Literacy:

As a Career Technical Education is our mission to educate students to be career and college ready. These skills are embedded throughout our curriculum. This allows students to practice reading, writing, and mathematical skills outside of a core classroom in a hands-on setting.

Numeracy: Precisely measuring properties, calculating formulas, properly creating a budget sheet, etc. **Lesson:** Identify and correct basic problems involving controls, sensors, and relays in electrical equipment.
(Standard 8)
Literacy: Properly recording data, following procedures while completing labs, creating career portfolio, communicating with peers, etc. **Lesson:** Read and interpret industrial manuals required for maintaining industrial machinery and equipment.
(Standard 4)

Anchor Assignments:

Students will work on AET once they have completed their daily assignments.

Grading Procedures:

All grades will be based on a 100-point scale and will count equal. There will be no differentiation between daily and test grades. A mid-term and a final exam will be given and will count 25% of the final grade.

Grading Scale:

A = 100 – 90
B = 89 – 80
C = 79 – 70
D = 69 – 60
F = 60 – Below

SAE 25%
Daily/labs 30%
Tests/Quizzes 30%
Participation 15%

Assessment Procedures:

1. Student notebook
2. Classwork/worksheets
3. Tests
4. Oral Reports
5. Written Reports
6. Shop Skills

Class Procedures/ Materials Needed/ Etc.

Students will need pencils and paper ***every*** day. Student folders will be the student's responsibility. Textbooks will be kept in the agriscience classroom.

Class Rules

- RESPECT: Yourself, your teachers, the school and personal property.
- Attendance will be taken at the beginning of each block. A tardy is entering the classroom any time after the bell rings. Excessive tardies will NOT be tolerated!
- If you are absent for any reason, YOU are responsible for obtaining your
- make-up work within a reasonable time. A due date will be assigned when you
- receive your make-up work.
- Come ready to learn and work every day.
- All school policies apply.
- NO cell phones should be out in the classroom or any other locations during the
- class block.
- No horse playing in the shop, classroom, or land lab.
- Follow all shop safety rules
- Always ask if you do not understand how a tool works in the shop, "SAFETY FIRST".
- Keep a positive attitude in everything you do and respect others in the classroom.

Class Fees/Dues:

The Class Fees are $20.00 payable at any time after the course begins (this $20.00 is mandatory and must be paid).

Essential Questions:

What factors need to be considered to determine whether concrete, steel, or wood is the most sustainable building material?
What roles do technology play in Agricultural management?
What role does Alabama's forest resources play in the global supply chain?
What are some of the most challenging aspects of being an industrial maintenance mechanic?
How would you handle working on a piece of equipment that you've never seen before?

What is your process for documenting your work and recording any changes or repairs that you've made?
Provide an example of a time when you had to troubleshoot a problem with a piece of equipment.
If you had to choose, which areas of industrial maintenance do you enjoy the most? Least?
What would you say is your greatest strength as an industrial maintenance mechanic?
How well do you communicate with other team members, including engineers and technicians?
Do you have experience working with hazardous materials?
When performing repairs, do you prefer to work alone or with a team?
We want to ensure that our equipment is always operating at peak performance. How would you define "peak performance" when it comes to industrial equipment?
Describe your process for inspecting equipment to ensure that it's safe to use.

Culminating Product(s):

Students will Identify appropriate safety training courses and concepts required for performing maintenance on agricultural industrial equipment and machinery.
Students will Identify specific portable power tools and demonstrate their uses in agricultural industrial maintenance.
Students will Identify specific stationary power equipment and demonstrate its uses in agricultural industrial maintenance.
Students will Read and interpret industrial manuals required for maintaining industrial machinery and equipment.
Students will Apply recommended maintenance techniques for troubleshooting industrial maintenance issues in various types of machinery.
Students will Interpret schematics for basic motor control circuits.
Students will Demonstrate basic concepts and procedures for completing motor control circuits.
Students will Identify and correct basic problems involving controls, sensors, and relays in electrical equipment.
Students will Discuss and demonstrate the proper techniques for lubricating bearings.
Students will Discuss the basic theory and application used in various drive systems, including belt, chain, clutch, braking, and gear reduction.
Students will Explain and apply basic theory used in pneumatics, including pressure, volume, and compressor types.
Students will Describe the components of hydraulic systems and their functions.
Students will Discuss the theory and application of hydraulic systems.
Students will Explain methods for troubleshooting problems in hydraulic systems.
Students will Perform basic MIG and TIG welding techniques in the flat, vertical, horizontal, and overhead weld positions.
Students will Demonstrate plasma arc cutting techniques.

Available Credential(s):

- Forestry Worker Certification

***Notice: Changes in topics covered or grading procedures are up to the discretion of the instructor.**
Students will be made known of any changes that do occur.

Parent/Guardian Signature

We (student and parent/guardian), have read the attached Agricultural Education Department Program Guidelines, Procedures, and Rules and agree to abide by and uphold them during my tenure with the Dale County High School Agriculture Education Department.

Comments:

Parent or Guardian Signature: