**Agriculture Engineering Syllabus**

**Ms. Lauren Rogers**

**Room 302**

**Course Description:**

Agricultural Engineering includes standards on metal fabrication and agriculture structures. Subject matter will include hot/cold metal work, cost and material computation, electrical wiring, engine service and repair, blueprint reading, drawing and selection of appropriate materials for projects.

**Rules:**

Each student enrolled in Agriculture courses is expected to follow all class rules and guidelines. These rules are in place for safety reasons, as well as classroom management.

All shop rules are strictly enforced. While in the shop, closed-toed shoes, pants, and safety glasses are non-negotiable. No eating or drinking is allowed in the shop. Failure to wear appropriate clothing or follow all safety rules will result in a student missing out on the lab activity for the day with no chance to make up the work. The second time shop safety rules are broken, the student will be forced to miss a week of lab activities. The third offense will result in no shop activities for the rest of the school year and possible disciplinary actions. These shop rules are FOR YOUR and OTHERS’ SAFETY!!!!

**\*Please note that there will be interaction with animals, plants, and power tools.\***

**Grading** will tentatively consist of a 6 Weeks exam, 1-2 quizzes per 6 weeks, a lab grade for each lab, and a mid-term and final exam. All grades will be weighed the same.

**Standard 1.0**

**Evaluate career options in the area of agricultural engineering.**

1.1 Research and prepare a written report on career goals related to agricultural engineering.

1.2 Prepare a career plan for a related area in agricultural engineering.

1.3 Research utilizing current resources to develop a written report on career opportunities in agricultural manufacturing.

**Standard 2.0**

**Systematically determine the correct operational procedures for advanced metal fabrication and welding.**

2.1 Demonstrate and explain the proper use of gas cutting and welding equipment.

2.2 Demonstrate and explain the proper use of Arc welding equipment.

2.3 Demonstrate and explain the proper use of MIG welding equipment.

2.4 Demonstrate and explain the principles and techniques involved in blueprint reading and drawing.

2.5 Develop a written bill of materials and project costs.

2.6 Utilize principles of advanced metal fabrication.

2.7 Utilize metal working tools and machines to complete projects.

2.8 Demonstrate approved safety practices in a shop/lab environment.

2.9 Complete a safety test with 100 percent accuracy.

**Standard 3.0**

**Evaluate the principles of electricity, including electrical wiring, equipment and motors.**

3.1 Explain the proper wiring of a circuit breaker panel.

3.2 Read and interpret a house-wiring diagram.

3.3 Develop a bill of materials and project costs for an electrical project.

3.4 Use electrical tools properly.

3.5 Read and interpret blueprints, drawings, electrical codes and electrical diagrams.

**Standard 4.0**

**Utilize the principles and techniques involved in the construction of agricultural structures.**

4.1 Compare the advantages and disadvantages of different types of siding.

4.2 Compare the advantages and disadvantages of different types of roofing.

4.3 Determine the importance of stress loads of different materials.

4.4 Evaluate the use of different types of foundations.

4.5 Examine methods of finishing concrete and laying cinder blocks.

4.6 Write project plan and costs of constructing agriculture buildings.

**Standard 5.0**

**Integrate core academic competencies in the area of agricultural engineering.**

5.1 Calculate construction problems using algebraic formulas

5.2 Solve arithmetical problems related to construction.

5.3 Solve speed, time, and distance problems.

5.4 Solve problems relating to volume, area and linear measurement.

5.5 Explain the conversion of chemical energy to mechanical energy.

5.6 Describe the difference in strengths of various species of lumber.

**Standard 6.0**

**Demonstrate premier leadership and personal growth needed for career success and advancement in the area of agricultural engineering.**

6.1 Demonstrate positive work attitudes and behaviors based on the FFA code of ethics.

6.2 Describe career plans that reflect permanent learning.

6.3 Demonstrate correct time management skills.

6.4 Help others learn in order to achieve goals and expectations through a supervised agricultural experience program.

6.5 Prepare to participate in FFA Agriculture Mechanics Career Development Events.

**Acknowledgement of Course Expectations – Ag Engineering**

I, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, understand that my child \_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ will be enrolled in Ag Engineering for the \_\_\_\_\_\_\_\_\_\_\_\_\_ school year. I have read and understand the course description, expectations, and grading policies.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent Signature Date

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Signature Date

This form MUST be returned to Ms. Rogers on the given due date before the student will be able to receive grades for any work during class!