

## AG SCIENCE

<b>SCHOOL:</b>	Tuscola Technology Center	<b>Instructor:</b>	Jeremy Glaspie
<b>ADDRESS:</b>	1401 Cleaver Road Caro MI 48723	<b>Phone:</b>	989.673.5300 ext. 30304
<b>URL:</b>	www.tuscolaisd.org	<b>Email:</b>	jglaspie@tuscolaisd.org

**COURSE DESCRIPTION:** The Agriscience Program is an ever changing program in the Industry of Agriculture and Natural Resources (ANR). In this program you will have the opportunity to develop the skills and knowledge necessary to pursue a career or advance degree in over 300 career areas responsible for providing the food and environment our society needs to be successful. The primary focus is on the highly technical careers that support the efforts of production agriculture.

**COURSE GOALS & OBJECTIVES:** Instruction in the program will be delivered from two different angles. The first will be core instruction based on the Michigan Agriscience Curriculum. The purpose of core instruction is to provide every student with a foundation in the concepts essential to employment in the industry. Six of twelve units will be completed each year. They include:

**Segment 1: Scientific and Social Implications of Agriculture**

- A. Understand injury prevention and basic first aid
- B. Demonstrate the use of scientific inquiry to answer ANR questions
- C. Understand the role of Science in addressing societal issues relevant to ANR
- D. Understand the importance of Health, Safety, and environmental management systems in organizations
- E. Understand ethics and legal responsibilities in ANR workplace
- F. Develop technical skills in tool usage, personal protection equipment, computer usage, economics and record keeping, etc.

**Segment 2: Animal Industries and Domestic Animal Production**

- A. Animal Domestication
- B. Animal Production/ Economics
- C. Careers in Animal Industry
- D. Animal Ethics
- E. Animal Management and Evaluation
- F. Recognize environmental factors that affect animals' performance

**Segment 3: Animal Health and Nutrition**

- A. Nutrients and Nutrient Requirements
- B. Feed Composition, Additives and Rations
- C. Animal Management
- D. Animal Restraint and Handling Facilities
- E. Analyze a subject animal to determine its health status
- F. Recognize animal behaviors to facilitate working with animals safely
- G. Provide proper nutrition to maintain animal performance

**Segment 4: Plant Nutrition**

- A. Sources of Plant Nutrients
- B. Function of nutrients
- C. Determining nutrient deficiencies
- D. Reading fertilizer label
- C. Apply principles of anatomy and physiology to produce and manage plants

**Segment 5: Soils**

- A. Introduction to soils
- B. Physical Properties/ Basic soil components
- C. Influence of texture on soil

- D. Soil Horizons, textures, and structures
- E. Organic Matter in soil
- F: Soil reaction: acidity and alkalinity
- G: Soil Water
- H: Erosion
- I: Soil environment problems
- J: Test appropriate materials or examine data to evaluate and manage soil nutrients

**Segment 6: Natural Resources Fundamentals**

- A: Tree basics
- B: Tree physiology
- C: Forest Ecology and Health
- D: Forest Management
- E: Wildlife Management
- F: Water Cycle
- G: Watersheds
- H: Ground Water
- I: Water Conservation

**Segment 7: Leadership, Business, Education and Career Success**

A: Develop an understanding of the role of leadership in the Agriculture and Natural Resources Industry (ANR)

- B: Develop skills in information management relevant to ANR
- C: Use oral and written communication skills in ANR industry applications
- D: Solve problems using critical thinking independently and in teams
- E: Access suitable resources to identify public policies, issues, and regulations impacting ANR
- F: Use information technology tools specific to ANR
- G: Understand roles within teams, work units, departments, and organizations
- H: Know and apply employability skills

**Segment 8: Organization of Living Systems**

- A: Transformation of matter and energy in cells
- B: Cell Differentiation and Specialization
- C: Organic Molecules
- D: Maintaining Environmental stability
- E: Living Organism Composition
- F: Energy Transfer

**Segment 9: Comparative Animal Systems and Animal Genetics**

- A: Introduction to anatomy and physiology
- B: Comparative skeletal, digestive, and reproductive systems
- C: Role of genetics in animal agriculture
- D: Apply knowledge of anatomy and physiology to produce and/or manage animals in a

domesticated environment

**Segment 10: Plant Physiology**

- A: Understanding the importance of plants
- B: Understanding plant parts and their functions
- C: Understanding plant processes and their role in plants
- D: Understanding reproduction methods of plants
- E: Applying fundamentals of plants to the production, harvest, and storage of crops/fruits

**Segment 11: Pests and Pest Management**

- A: Introduction to Pest Science
- B: Understanding weeds, insects, plant diseases and nematodes
- C: Controlling Plant Pests
- D: Develop and use a plan for integrated pest management

**Segment 12: Environmental and Energy Systems**

- A: Understanding ecosystems

- B: Analyzing the role that humans play in ecosystems
- C: Understanding renewable/non-renewable technology
- D: Understanding energy conservation
- E: Analyzing environmental issues

The second focus will be on specialty areas that will be chosen by each student. The purpose of this part of the class is to provide you with an opportunity to develop an in-depth understanding of a part of the industry that interests you. This will be accomplished through the completion of Supervised Agricultural Experiences (SAE) that are planned and completed by you; the student. These projects will fall into the areas of 1) Animal Science, 2) Plant Science, 3) Aquaculture, 4) Environmental Science, 5) Food Science, 6) Agricultural Communications, 7) Veterinary Science, and 8) Agricultural Mechanics

**ATTENDANCE  
POLICY AND  
GRADE  
REDUCTION**

The Tuscola Technology Center places a high priority on attendance because the attendance pattern established by the student in school often sets an attendance pattern for employment. To benefit from the primary purpose of the school experience, it is essential that each student maintain regular and punctual attendance. Class attendance is necessary for learning and academic achievement as well as for developing the habits of **punctuality, dependability, and self-discipline demanded by business and industry**. Regular attendance in the Technology Center's labs is essential to allow students to fully participate in class instruction, discussion and skill development. Absences beyond eight days per semester are considered excessive. Both excused and unexcused absences are charged in the student total.

Absences beyond eight (8) per semester are considered excessive. At nine (9) absences, excused or unexcused, the student's grad will drop 1 full letter grade. At absence 11, 13, and 15, grades will drop one full letter grade for each of those absences. Any grade reduction may be appealed to the Tech Center Administration in writing **within two weeks** of the end of the semester. The student may have an opportunity to make up the work, with credit, at the convenience of the instructor with the approval of administration.

**STUDENT  
ASSESSMENT**

Grading is based on testing and the evaluations of projects in the following criteria: Neatness, Completeness, Accuracy and Speed

Evaluation will be in two areas: Written project will comprise 70% of the grade, with work habits and attendance comprising the other 30%. The attendance policy will be the TTC attendance policy listed in the handbook.

All equipment and tools will be provided by the TTC as well as all supplies to carry-out all hands on projects. Safety of equipment and use will be explained, and students must pass a safety test by 85% to work on equipment by themselves.

A	100	93
A-	92.9	90
B+	89.99	87
B	86.99	83
B-	82.99	80
C+	79.99	77
C	76.99	73
C-	72.99	70
D+	69.99	67
D	66.99	63
D-	62.99	60
E	59.99	0

## **COURSE EVALUATION**

Your final grade in this course will be earned by combining the following three areas:

1. Core Curriculum: 40%
2. Work Habits: 30%
3. SAE Projects: 30%

Core Curriculum: This part of the course will be delivered as a set of assignments, quizzes, and tests focused on helping every student grasp the basic concepts associated with the ANR industry.

Work Habits: Often times, what you know on a job is not as important as how you do your work. Therefore, a set of behaviors will be evaluated each marking period that are reflective of work site expectations for the majority of Agriculture and Natural Resources Careers. Work habits that will be taught and evaluated include:

Team Work: Behaviors observed would include participating with others, communicating positively, helping others; focus on group outcomes, etc.

Time Management: Behaviors observed would include meeting all deadlines, switching between tasks quickly, completing tasks in appropriate amount of time, planning daily tasks and prioritizing by importance.

Following Directions: Behaviors observed would include using active listening to hear directions, asking clarifying questions, reading directions closely, taking notes of directions, etc

Personal Management: Behaviors observed would include appropriate handling of absences, daily clean-up of tools and materials, and organization of materials.

SAE Projects: Projects will be selected by you based upon your personal interests. Depending on the size of the project, you may be required to complete one to three projects per semester. A learning plan will be required for each project before the beginning of the project. The final grade of the project will be based on your completion of all of the agreed upon tasks and the level of quality with which you complete them.

### **Leadership Development**

The development of leadership skills is an essential component of career success and personal growth. You as a student will be strongly encouraged to actively participate in a variety of leadership development opportunities throughout the year. Many of these opportunities will be made available through the National FFA Organization. Through this organization, you will be able to compete in skill and leadership competitions, attend leadership conferences, earn awards for your SAE projects, hold officer positions, qualify for scholarships and much more!!

### **Course Expectations**

1. You are expected to handle your absences as you would on a job.
  - A. Pre-arrange your absence by leaving a note for Mr. Glaspie
  - B. If sick call and leave a message for Mr. Glaspie 989-673-5300 ext. 304
2. Dress appropriately for lab work. This includes boots or other shoes that are not worn to school, coveralls or change of clothes that can get dirty and coats/gloves if your projects require you to go outside. The GOAL is NO SMELLY clothes or shoes should go back to your home school.

3. You are expected to keep an organized notebook with all of your assignments. Loose papers are NOT acceptable.
4. You are expected to be in your seat and prepared with notebook, writing instrument, blank paper and assignments at the beginning of class.
5. NO Flip-Flops are allowed to be worn during lab.
6. All assignments not completed within 5 days of due date will become a zero.

**CERTIFICATIONS**

Pet Shop Owner  
 Pet Care Worker  
 Pet Groomer  
 Animal Trainer  
 Vet Technician

**ARTICULATED CREDIT**

St. Clair Community College  
 Lansing Community College

**PROGRAM SUPPLIES**

All equipment and tools will be provided by the T.T.C. as well as all supplies to carry-out all hands on projects. Safety of equipment and use will be explained, and students must pass safety test by 85% to work on equipment by themselves.

**YOUTH CLUB**

Students will become members of the F.F.A. which will allow them to participate in the F.F.A. skills contest. The fee for F.F.A. membership as well as the contest will be paid by the T.T.C.

*The instructor reserves the right to make adjustments to this syllabus as needed.*