*Sample High School*



Agriscience Education

*Program Name*

Course Syllabus

for

Agriscience

Instructor – Mrs. Smith

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:

Agriscience is a one-credit course that provides students with a general overview of the five major career areas in Agriscience Education: Plant Biosystems, Animal Biosystems, Agri-Engineering, Agri-Commerce and Communication, and Environmental and Natural Resources. Students are involved in classroom and laboratory activities in each of the five major career areas. Application of agriculture-related case studies is used to demonstrate and reinforce skills taught in this course.

Prerequisites: N/A

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

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 (92-100) B (83-91) C (74-82) D (65-73) F (<65)

\*\* Grades of .5 or greater will be rounded up; ex. (82.5 = 83)

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.

Course Length:

This course is an eighteen-week course and does count for (1) credit.

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). ($7.00 in FFA dues and $13.00 in class fees).

If the student fails to pay the fees by the deadline then the student’s name is then turned in to the office to deal with. Payment will be necessary.

Essential Questions:

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| How have the advancements in agriculture led to an improved standard of living for most Americans? |
| How is the choice of a career one of the most important decisions in a person’s life? |
| Is safety an accident? |
| How has the development and use of computer technologies changed the agricultural industry? |
| Are great leaders born or is their leadership skills developed?  Why is protecting the environment and conserving natural resources important?  Why is agriculture and all of life on Earth dependent on soil?  Why are plants considered the foundation of all agriculture?  What impact does a properly managed forest system have on the economy of the state of Alabama?  What roles do domesticated farm animals play in our economy?  What biological requirements are necessary for the production of aquatic animals?  How does the expanding human population affect wildlife?  Why is woodworking an integral part of an Agriscience course?  In what ways does the ability to join metal together through a welding process affect your daily lives? |

Culminating Product(s):

Students will present results from research on the organizations which supports agriculture.

Students will narrow down their choice of an agriscience career through their completion of a career portfolio.

Students will demonstrate knowledge of safe use and proper setup of equipment.

Students will understand the importance of computer technologies in the agricultural industry through their completion of a research project.

Students will have an understanding of agricultural leadership through their participation in discussions, research and oral presentation and their involvement in a mock FFA CDE.

The student will have an understanding and appreciation of natural resources through their completion of a research report.

Students will understand the importance of soil and soil pH by completing a home soil test and determining if the Soil pH is acceptable.

Students will understand the importance of the growth of plants to the existence of life on earth and through their research will be able to discuss the importance of plants to future fuel needs of our country.

Students will demonstrate an understanding of the importance of tree identification through the completion of a leaf collection.

Students will understand the importance of the health and nutrition of the different breeds of livestock .

Students will understand the importance of aquaculture to the economy of Alabama through the completion oral presentations, lab experiments, and research findings.

Students will understand the importance of wildlife management through their completion of a research project/presentation and the completion of the Alabama hunter safety course.

The student will understand the proper use and operation of the equipment and safety procedures that are related to the preparation and construction of a woodworking project.

Students will demonstrate knowledge of arc welding through their hands-on ability to join metal together safely and correctly.

Available Credential(s):

NOCTI: Production Agriculture

Hunter Education Certification

Hazardous Occupations Safety Training in Agriculture

Alabama Junior Master Gardener

The following pages are information concerning the material to be covered in this course and the allotted time for each topic.

**Agriscience Course Outline**

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| Course Objectives and Lessons | Course Content Standard | Other Academic  **Content Standard** | **Duration In Minutes** |
| **1. Identify major agricultural commodities for the local area, state, nation, and world.** |  |  |  |
| Determining the Nature of the Agriculture/Horticulture Industry | AS–1, 4 | AE–4 SS I–1, SS V–2 | 96 |
| **2. Describe the history of agriculture for the local area, state, nation, and world.** |  |  |  |
| Determining the History of Agriculture | AS–2 | AE–4R 1–2 | 96 |
| **3. Explore various careers in the agriscience industry.** |  |  |  |
| Selecting an Agriculture/Horticulture Occupation | AS–3 | AE–2 R I—1 | 96 |
| **4. Identify technological advancements that enhance the agriscience industry.** |  |  |  |
| Determining the Nature of the Agriculture/Horticulture Industry | AS–1, 4 | AE–4 SS I–1, SS V–2 | NA |
| **5. Describe the fundamental principles of economics that affect the management of a business.** |  |  |  |
| Understanding Basic Economic Principles | AS–5 | AMD–4, SS V–2 | 48 |
| **6. Explain the eight steps in the decision-making process.** |  |  |  |
| Understanding Problem Solving | AS–6 | AMD–9, AMD–10, AMD–11,SC I–1 | **96** |
| **7. Identify sources and types of credit.** |  |  |  |
| Determining Sources of Credit | AS–7 | AMD–12, SS V–2 | 24 |
| **8. Describe the principles of entrepreneurship in agriscience.** |  |  |  |
| Using Sole Proprietorships | AS–8 | AMD–8, SS V–2 | 24 |
| **9. Identify the characteristics of an SAEP.** |  |  |  |
| Making Long Range Plans for Expanding SAE Programs | AS–9 | AE–7, M 1–1 | 24 |
| **10. Prepare a sales presentation for a business product.** |  |  |  |
| Selling Agricultural Products and Services | AS–10 | AM–14, 17, AE–44, L II–1 | 24 |
| **11. Analyze the effects of agriculture on the environment.** |  |  |  |
| Understanding Soil Degradation | AS–11 | SC VI–1 | 24 |
| Understanding Soil Erosion and Management Practices | AS–11 | SC I–1 | 24 |
| Identifying Environmental and Economic Impacts from Soil Erosion | AS–11 | SC VI–1 | 24 |
| Employing Conservation Tillage Practices | AS–11, 15 | SC I–1 | 24 |
| Managing Environmental Impact of Pesticides | AS–11 | ESM–26 SC I–1 | 24 |
| **12. Identify the major soil areas in Alabama.** |  |  |  |
| Determining the Nature of Soil | AS–12 | HT–7 SC I–1 | 24 |
| Understanding Soil Formation | AS–12 | HT–7, AE–17 SC I–1 | 24 |
| Understanding Soil Color | AS–12 | HT–7 SC I–1 | 24 |
| **13. Identify the layers of soil in a soil profile.** |  |  |  |
| Explaining a Soil Profile | AS–13 | AE–18, HT–7 SC VI–1 | 48 |
| **14. Determine the texture of different soil samples.** |  |  |  |
| Understanding Soil Texture and Structure | AS–14 | HT–7 SC I–1 | 24 |
| **15. Determine the land capability class for a given plot of land.** |  |  |  |
| Using Land Capability Classifications | AS–15 | SC I–1 | 24 |
| Calculating Soil Loss | AS–15 | SC I–1 | 24 |
| Employing Conservation Tillage Practices | AS–11, 15 | SC I–1 | NA |
| **16. Discuss how to adjust soil pH.** |  |  |  |
| Understanding Soil Chemistry | AS–16 | SC VI–1 | 48 |
| Determining Fertilizer Formulations | AS–16, 38 | SC VI–1 | 48 |
| Applying Fertilizers to Field Crops | AS–16 | SC VI–1 | 24 |
| **17. Analyze the importance of plants in the balance of the ecological system.** |  |  |  |
| Determining the Environmental Impacts of Crop Production | AS–17 | SC III–2 | 24 |
| Identifying Differences Between Plants and Animals | AS–17, 18, 30 | SC III–1 | 24 |
| **18. Determine the characteristics, functions, and structures of plants.** |  |  |  |
| Understanding Plant Life Cycles | AS–18 | SC III–2 | 96 |
| Exploring Cells | AS–18 | PB–7 SC V–1, VI–1 | 96 |
| Identifying Differences Between Plants and Animals | AS–17, 18, 30 | SC III–1 | 24 |
| **19. Explain plant processes.** |  |  |  |
| Examining Photosynthesis | AS–19 | LDM–12 SC III–2 | 48 |
| Understanding Respiration | AS–19 | LDM–12 SC III–2 | 48 |
| Determining the Influence of Temperature on Plants | AS–19, 21 | LDM–11 SC III–2 | 24 |
| Recognizing the Role of Light in Plant Growth | AS–19, 21 | LDM–11 SC III–2 | 24 |
| Examining the Significance of Air in Plant Growth | AS–19, 21 | LDM–11 SC III–2 | 24 |
| **20. Identify the sixteen essential elements plants need for proper growth and health.** |  |  |  |
| Determining Nutrient Functions and Utilization | AS–20 | HT–9 SC III–2 | 48 |
| Understanding the Importance of Water in Plant Growth | AS–20 | LDM–11 SC III–2 | 24 |
| Determining Plant Nutrients and Fertility | AS–20 | HT–9, 10, ESM–17, 18, LDI–13, 14 SC III–2 | 72 |

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| **21. Identify the requirements needed to produce a successful vegetable garden.** |  |  |  |
| Determining the Influence of Temperature on Plants | AS–19, 21 | LDM–11 SC III–2 | NA |
| Recognizing the Role of Light in Plant Growth | AS–19, 21 | LDM–11 SC III–2 | NA |
| Examining the Significance of Air in Plant Growth | AS–19, 21 | LDM–11 SC III–2 | NA |
| **22. Identify characteristics for the different areas of horticulture.** |  |  |  |
| Understanding Horticulture | AS–22 | HT–1, SC I–1 | 192 |
| **23. Demonstrate the ability to propagate plants.** |  |  |  |
| Identifying Seed Germination Processes and Requirements | AS–23 | SC III–2 | 96 |
| Propagating Plants Sexually | AS–23 | HT–11 SC III–2 | 24 |
| Propagating Plants Asexually | AS–23 | HT–11 SC III–2 | 24 |
| Propagating Plants by Tissue Culture | AS–23 | HT–11 SC III–2 | 24 |
| Exploring Genetics | AS–23, 28 | PB–15 SC VI–1 | 96 |
| Examining Mitosis and Meiosis | AS–23 | PB–17 SC V–2 | 96 |
| Using Crossbreeding and Hybrids | AS–23 | PB–16, 18, 19 SC V–1 | 96 |
| **24. Identify important forest trees for the local area, state, nation, and world.** |  |  |  |
| Recognizing Important Tree Species and Their Products | AS–24 | FR–7, 8, 22, SC III–2 | 480 |
| **25. Determine proper forest management practices for a stand of trees.** |  |  |  |
| Applying Safe Practices in Forest Management | AS–25 | FR–2, SC I–1 | 288 |
| **26. Identify methods used to grow and/or produce aquatic species.** |  |  |  |
| Propagating and Selling Fish | AS–26 | AQS–24, 25, 26, SC III–3 | 96 |
| **27. Identify common names and terms used in livestock operations.** |  |  |  |
| Determining the Anatomy and Physiology of Animals | AS–27, 30 | VS–13 SC III–3 | 96 |
| Understanding Animal Life Span | AS–27, 30 | VS–16, 17 SC III–3 | 96 |
| **28. Identify common breeds of livestock and their characteristics.** |  |  |  |
| Exploring Genetics | AS–23, 28 | PB–15 SC VI–1 | NA |
| **29. Determine the nutrition requirements for livestock.** |  |  |  |
| Meeting the Nutritional Needs of Animals | AS–29 | SC III–2 | 192 |
| **30. Determine characteristics, functions, and structures of animals.** |  |  |  |
| Identifying Differences Between Plants and Animals | AS–17, 18, 30 | SC III–1 | NA |
| Determining the Anatomy and Physiology of Animals | AS–27, 30 | VS–13 SC III–3 | NA |
| Understanding Animal Reproduction | AS–30, 31 | VS–14, 15 SC III–3 | 288 |
| Understanding Animal Life Span | AS–27, 30 | VS–16, 17 SC III–3 | NA |
| **31. Explain practices used to manage livestock properly.** |  |  |  |
| Understanding Animal Reproduction | AS–30, 31 | VS–14, 15 SC III–3 | NA |
| Understanding Blood | AS–31 | VS–13 SC III–3 | 192 |
| **32. Explain ways to select and grade livestock.** | AS–32 | AnS–6, AnS–7, AnS–8, AE–9,  AE–11, AB–32  SC III–1 | 192 |
| Exploring the Beef Industry |  |  |  |
| **33. Determine management practices used to enhance wildlife habitats.** |  |  |  |
| Conserving Wildlife and Wildlife Habitat | AS–33 | FWM–27, 28, SC VI–1 | 288 |
| **34. Identify state hunting laws and regulations concerning wildlife.** |  |  |  |
| Harvesting and Preparing Game Animals | AS–34 | FWM–22, 26, SC VI–1 | 192 |
| **35. Identify hunting safety practices.** |  |  |  |
| Understanding Hunting Safety | AS–35 | FWM–2, 3, R I–1 | 480 |
| **36. Categorize common pests.** |  |  |  |
| Determining the Kinds of Pesticides | AS–36 | HT–27 SC VI–1 | 96 |
| **37. Distinguish characteristics, functions, and structures of common pests.** |  |  |  |
| Managing Crop Diseases | AS–37, 38 | HT–26 SC I–1 | 96 |
| Managing Weeds | AS–37, 38 | HT–26, 27 SC VI–1 | 96 |
| Managing Insect Pests | AS–37, 38 | HT–26, 27 SC VI–1 | 96 |
| Managing Plant Pests | AS–37, 38 | HT–26, 27 SC VI–1 | 96 |
| **38. Describe types of pesticides and ways they control pests.** |  |  |  |
| Determining Fertilizer Formulations | AS–16, 38 | SC VI–1 | NA |
| Understanding Integrated Pest Management (IPM) | AS–38 | HT–28 SC VI–1 | 192 |
| Setting up a Crop Scouting Program | AS–38 | HT–28 SC I–1 | 96 |
| Managing Crop Diseases | AS–37, 38 | HT–26 SC I–1 | NA |
| Managing Weeds | AS–37, 38 | HT–26, 27 SC VI–1 | NA |
| Managing Insect Pests | AS–37, 38 | HT–26, 27 SC VI–1 | NA |
| Managing Plant Pests | AS–37, 38 | HT–26, 27 SC VI–1 | NA |
| Using Pesticides Safely | AS–38 | HT–3, 27, SRT–2 SC VI–1 | 192 |
| Interpreting Pesticide Labels | AS–38 | HT–27, SRT–2 SC I–1 | 96 |
| Applying Pesticides | AS–38 | HT–27, ESM–27 M IV–1 | 48 |

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| **39. Identify safety procedures used in agriengineering applications.** |  |  |  |
| Practicing Safety in the Lab | AS–39 | AE–8, 28, AF 6–11 SC I–1 | 192 |
| Identifying Agriscience Lab Tools | AS–39 | AE–8 SC I–1 | 192 |
| **40. Demonstrate proper procedures for constructing a woodworking project.** |  |  |  |
| Planning and Designing Projects | AS–40 | AE–30, 31, AC–3 M IV–2 | 864 |
| **41. Demonstrate proper procedures for arc welding.** |  |  |  |
| Applying Shielded Metal Arc Welding (SMAW) Techniques | AS–41 | AF–31, 32, 33, AE–39, SC I–1 | 672 |
| **42. Explain the theory of operation for small engines.** |  |  |  |
| Using Small Engines | AS–42 | AM–7, 8, 9, 10, AE–40, 41 SC I–1 | 288 |
| **43. Perform routine care and maintenance of small engines.** |  |  |  |
| Applying Preventive Maintenance Practices | AS–43 | AM–11, 12, SC I–1 | 96 |
| **44. Demonstrate procedures used in wiring applications.** |  |  |  |
| Wiring Circuits | AS–44 | AC–35, AE–37, SC I–1 | 252 |
| **45. Demonstrate procedures used in plumbing applications.** |  |  |  |
| Maintaining and Repairing Plumbing Systems | AS–45 | AC–31, SC I–1 | 204 |
| TOTAL MINUTES | **8640** |