**AGRISCIENCE DEPARTMENT**

Intermediate Agriscience (AG II)

**COURSE SYLLABUS**

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| **Recommended** **Grade Level:**  | **9 -12** |
| **Length:**  | One Year |
| **Prerequisite:** **Program Goals** | None**AGRISCIENCE DEPARTMENT GOAL**Provides students with the knowledge and skills necessary for economic success in the twenty-first century, the program prepares student for the accelerated changing taking place in the competitive business world. As students gain knowledge and professional experiences, they develop skills essential for success and build a strong foundation that enables them to become productive workers and citizens. |
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| **Required Materials:** | Each student needs to bring paper, pen, pencil, notebook, iPad and lab materials to class each day along with any handouts that were given in class. The textbook for this will be given by the teacher |
| **Supplemental Materials:** | Personal Protective equipment (PPE) will be provided but students have the option of bringing personal equipment as long as it meets industry safety standards.  |
| **Special Requirements:** | None |
| **Program Learning Outcomes:** | Intermediate Agriscience is part of a four course sequence that comprises the General Agriscience Program. This course should be offered in series along with Fundamentals of Agriscience, Advanced Agriscience, and Applied Agricultural Mechanics to 9th through 12th grade students. It is strongly encouraged that Fundamentals of Agriscience be required as a pre-requisite for this course. The program learning outcomes will be determined by the specific program in which the student is pursuing.  |
| **Course Learning Outcomes:** | At the conclusion of the course the student will have the basic learning outcomes in the following areas:**Agribusiness Systems**1. Identify career and entrepreneurship opportunities in the field of agribusiness.2. Explain the responsibilities of business ownership.3. Define the characteristics of an effective entrepreneur.  Analyzing the components of the entrepreneurship SAE4. Compare the types of business ownerships. (sole proprietorship, franchise, partnership, limited liability corporation {LLC}, corporation).5. Discuss roles and functions of management, major components of the free enterprise system, law of  supply and demand and characteristics of organizational structures of business.6. Discuss depreciating capital, types of accounting systems and sources and procedures for obtaining  agribusiness loans.7. Develop marketing strategies of entrepreneurial services and products.  Interpreting research data on market trends**Foods and Food Processing**8. Explain the percentage of each food dollar that is spent on marketing.  Exploring the effect of advertising on consumers**Natural Resources and Environmental Management**9. Identify employment opportunities in the natural resources career areas.  Analyzing career opportunities in forestry  Analyzing career opportunities in fish and wildlife management  Analyzing career opportunities in environmental management/ecology10. Identify potential safety hazards in Alabama forests.  Identifying hazards when dealing with wildlife  Identifying hazards when dealing with wild plants (e.g. poison oak)  Applying safety practices when hunting, boating, or using an atv11. Evaluate the safe use of a chainsaw.  Cataloguing chainsaw parts  Identifying personal protective equipment when using a chainsaw  Employing the safe use of a chainsaw  Demonstrating proper maintenance of a chainsaw i. Adjusting and sharpening a chain on a chainsaw12. Interpret map characteristics and features.  Distinguishing markings on maps (topographical and projection) i. Examples: colors, symbols, contour lines  Using scale to determine distance on maps13. Explain basic forest management practices utilizing the Forestry FFA CDE booklet.  Comparing aquatic and terrestrial ecosystems  Categorizing wetlands, woodlands, grasslands/pasture, and forest lands**Plant Systems**14. Evaluate safety practices used in plant systems.  Indentifying personal protective equipment when dealing with plants and herbicides  Describing the importance of pest management in the agricultural industry  Comparing types of pesticides and how they control pests15. Explain basic concepts of agronomy utilizing the FFA Land CDE booklet.  Evaluating soil texture  Determining slope and distance  Analyzing land capabilities16. Identify the requirements needed to conduct a successful vegetable production operation.  Analyzing plant nutrient requirements  Determining plant fertilizer and lime requirements17. Identify turf and landscape plants by common name.  Reviewing the FFA Nursery Landscape CDE plant list  Identifying common plant diseases  Performing techniques for correctly planting landscape plants18. Explore greenhouse/nursery management techniques.  Create greenhouse /nursery production schedules  Differentiate techniques for maintaining greenhouse/nursery plants i. Examples: transplanting, propagating, mulching, fertilizing, and irrigating  Identifying the types of tree pruning practices and tools used to complete those practices  Explaining the impact of biotechnology on plant breeding  Demonstrating the proper installation practices involved with being a Landscape Management Technician.19. Developing an understanding the installation and maintenance of an irrigation system  Designing irrigation systems for greenhouse/nursery operations**POWER, STRUCTURAL, AND TECHNICAL SYSTEMS: CORRESPONDING NCCER****MODULE****Electricity**20. Describe the career paths one might follow in the electrical trades.  Exploring the apprenticeship/training process for electricians  Identifying the tasks typically performed by electricians21. Explain, describe, and demonstrate the use of safety equipment, protective clothing, and procedures applicable to agriculture in the electrical trade.  Identifying major components and functions of an electrical system  Recognizing PPE equipment and safe work practices  Explaining the purpose of OSHA  Describing techniques for finding shorts, grounds and opens in electrical circuits22. Analyze components needed for wiring a structure.  Defining voltage and identify the ways in which it can be produced  Explaining the difference between conductors and insulators  Defining the units of measurement that are used to measure the properties of electricity  Identifying the meters used to measure voltage, current, and resistance  Explaining the basic characteristics of series and parallel circuits23. Identify sources of electrical energy.  Explaining the basic characteristics of combination circuits  Calculating Kirchhoff’s voltage law, the voltage drop in series, parallel, and series parallel Circuits  Calculating, using Kirchhoff’s current law, the total current in parallel and series parallel circuits  Using Ohm’s law, find the unknown parameters in series, parallel, and series-parallel Circuits24. Demonstrate techniques for making electrical splices and connections for a single-pole switch with light, three-way switch with light, and a duplex receptacle.  Explain the role of the National Electrical Code® in residential wiring and describe how to determine electric service requirements for dwellings  Explain the grounding requirements of a residential electric service  Calculate and select service-entrance equipment  Select the proper wiring methods for various types of residences  Compute branch circuit loads and explain their installation requirements  Explain the types and purposes of equipment grounding conductors  Explain the purpose of ground fault circuit interrupters and tell where they must be installed  Size outlet boxes and select the proper type for different wiring methods  Describe rules for installing electric space heating and HVAC equipment  Describe the installation rules for electrical systems around swimming pools, spas, and hot tubs  Explain how wiring devices are selected and installed  Describe the installation and control of lighting fixtures**Plumbing**25. Design water supply and sewage drainage systems for a structure.  Describing the history of the plumbing profession  Identifying the responsibilities of a person working in the plumbing industry i. Evaluating the personal characteristics of a professional ii. Identifying the stages of progress within the plumbing profession and its positive impact on society Identifying how green technology is incorporated into plumbing26. Discuss the safe practices used in the plumbing trade.  Describing the common unsafe acts and unsafe conditions that cause accidents  Describing how to handle unsafe acts and unsafe conditions i. Explaining how the cost of accidents and illnesses affects everyone on site ii. Demonstrating the use and care of appropriate personal protective equipment iii. Identifying job-site hazardous work specific to plumbers iv. Identifying the benefits of a job safety analysis  Explaining how to work safely in and around a trench  Explain how to work safely in and around confined spaces  Demonstrating the proper use of ladders  Demonstrating how to maintain power tools safely  Describing the lockout/tag out process27. Identify tools used in plumbing.  Identifying the basic hand and power tools used in the plumbing trade  Demonstrating the proper use of plumbing tools  Demonstrating the ability to select the proper tool(s) for tasks  Demonstrating proper maintenance and storage for hand and power tools28. Describing the safety requirements for using power and hand tools common to the plumbing trade.29. Explain the selection of specific types of pipe used in plumbing.  Identifying the various types of plastic pipe  Evaluating the material properties, storage, and handling requirements of plastic pipe  Identifying the types of fittings and valves used with plastic pipe  Demonstrating the techniques used in hanging and supporting plastic pipe  Properly measuring, cutting, and joining plastic pipe  Analyzing the hazards and safety precautions associated with plastic pipe   |
| **Methods of Evaluation:****Projects:****Quizzes and Tests:****Other****Attendance****Class Absence Policy:**  | Evaluation of student progress towards achieving the stated learning outcomes and performance objectives is the responsibility of the instructor, within the policies of the NCCER Certification program. Detailed explanations are included in the expanded Syllabus developed by the instructor for each section being taught.**Grading Scale**The teacher will record grades periodically in the teacher’s grade book. The student’s work will be evaluated as follows:Evaluation Grading ScaleTerm Grade 90-100 = ADaily Participation 80-89 = BLab (Safety/cleanup/participation) 70-79 = CProject 60-69 = DNotebook/Record Keeping 59-Below = FClassroom ActivitiesTest/QuizzesThere will be small group and individual projects in which the student will have to show their work by producing, modifying and reassembling projects with various metals. The major course project will be discussed in detail at the appropriate time. Guidelines for project evaluations will be discussed along with the grading system.Students will be given written exams on every objective and will also be given lab assignments that will require hands-on ability.As students enter the classroom, they will obtain their textbook from the bookshelf and sit down. Students are required to have paper and pencils in class each day. All students should be seated when the tardy bell rings. Class roll will be provided through a variety of methods, such as: attendance logs, bell ringers and assignments.Student attendance is highly recommended to keep up in the class. All excused absentees will have the opportunity to make up any work they have missed for full credit for that activity. If a student is tardy or absent, they will be subject to the guidelines set by the Macon County Board of Education.The class will operate on the “buddy” system. During the first few days of school you should chose a partner that is responsible for helping you in the event that you are absent from class. Each buddy is responsible for informing the other about test, class work, notes, and other important information. Your buddy should also obtain extra copies of handouts when you are absent. If you miss class on the day an exam or quiz you will be responsible for scheduling a make-up with the teacher. It is not and will not be the responsibility of the teacher to inform you of materials that you have missed.  |
| **Consequences for** **failing to follow procedures:** **Student Organizations:****Flexibility:****Prerequisites:**  | 1. Warning and /or student conference
2. Detention Session (amount appropriate for severity)
3. Referral to administration

The MCCTEC/Booker T. Washington FFA is an active organization in which students enrolled in this course are encouraged to participate. The FFA competes at the local, district, state, and national level students should not miss the opportunity to join this organization. The chapter fee/dues for joining the FFA are $25.00.It is the intent of the instructor to accomplish the objectives specified in the course syllabus. However, circumstances may arise which prohibit the fulfilling of this endeavor. Therefore, this syllabus is subject to change. When possible, students will be notified of any change in advance of its occurrence.It is strongly encouraged that Fundamentals of Agriscience be required as a pre-requisite for this course. |
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