Principles of Agriculture, Food, and Natural Resources, Semester A

Credits: 0.5

Course Overview and Goals

This one-semester course is intended to help you familiarize yourself with various aspects of the agriculture, food science, and natural resources industries. This course covers basic concepts in the field of agriculture, food science, and natural resources. It also covers career opportunities in these fields and the academic skills and knowledge required for a successful career in agriscience.

By the end of this course, you will be able to do the following:

- Evaluate the skills, characteristics, and qualities necessary for a career in the Agriculture, Food, and Natural Resources (AFN) field.
- Examine scientific knowledge related to the AFN industry, such as plant structure, soil formation, and conservation techniques.
- Analyze various factors of the Agriculture, Food, and Natural Resources industry, including related organizations, regulations, safety precautions, and marketing basics of the field.
- Create a plan to participate in a supervised agricultural experience and describe the benefits of participating in these programs and other student organizations.

Course Components and Grading Rubric

The table gives a breakdown of the weight for each component in the course. Weight represents the percentage of the total score coming from each activity.

Course Components	Count	Weight*
Pretest. *A pretest is an optional assessment, typically designed for credit recovery. If a student shows mastery of a lesson objective, the student may be automatically exempted from the upcoming activities associated with the mastered objective. Pretests are not included as a component of the student's final grade.*	3	0%

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Course Components	Count	Weight*
Module. *Each module in this course contains an interactive tutorial or study and an associated mastery test. Tutorials and studies combine instruction and practice to prepare students for the mastery test, which is a computer-scored lesson-level summative assessment. The module score comes from a student's score on the mastery test.*	15	20%
Discussion. *A discussion activity is an opportunity for students to collaborate with their peers. An online threaded discussion mirrors the educational experience of a classroom discussion initiated when a teacher asks a complex, open-ended question. Students can engage in the discussion by responding both to the question and to the thoughts of others allowing for higher-order thinking about terminal objectives.*	3	20%
Unit Activity. *A Unit Activity is at the end of a unit and constitutes one or more small tasks. Its purpose is to deepen understanding of key unit concepts and tie them together. Each Unit Activity includes a simple rubric. The teacher versions include both a rubric and modeled sample answers. Unit Activities are teacher graded.*	3	20%
Posttest. *A posttest appears at the end of each unit.*	3	20%
End-of-Semester Test. *An end-of-semester test (EOS) appears at the end of each course.*	1	20%
Total	**28**	**100%**

Weight Teachers may manually adjust these weights if desired, per district grading requirements.*

Scope and Sequence

UNIT 1: INTRODUCTION TO AGRISCIENCE

In this unit, you will become familiar with the concepts of agriscience and sustainability. You will recall the major agricultural milestones in history, identify the major challenges in agriculture, and state ways to tackle these challenges. You will also identify natural resources and the impact of global warming and climate change on food production.

Finally, you will define and identify work ethics, integrity, and self-representation skills necessary in the agricultural industry.

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Activity	Activity Objective
Syllabus	• Review the Course Syllabus at the beginning of the course.
Introduction to Agricultural Science	• Recall organizations, programs, terms, processes, and fields of science related to the agriculture, food, and natural resources (AFN) industry in the United States and explain the evolution of the AFN industry.
Positive Work Ethics	• Recognize the importance of positive work ethics and describe good work habits.
Integrity	• Identify integrity attributes outlined by many workplace policies and laws.
Self-Representation	• Identify positive self-representation skills by dressing appropriately and using language and manners suitable for the workplace.
Agriculture and Sustainability	• State the impact of the agriculture, food, and natural resources (AFN) industry on safety, health, and the environment, and define sustainability and natural resource conservation in the AFN industry.
Unit Activity: Introduction to Agriscience	• Describe a Supervised Agricultural Experience (SAE), identify the objectives, the steps involved, and the types or components of SAE and also create a plan to carry out an SAE, including the area of interest in the AFN industry, the type of program, the kind of work involved, and the required knowledge and skills.

UNIT 2: SOIL AND PLANT SCIENCE

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In this unit, you will recall the process of soil formation and name the characteristics of soils. You will explain the classification of soils, state common soil tests, and identify soil improvement methods. You will define soil erosion and soil conservation. You will also identify career options in the field of soil science. In addition, you will classify plants, identify plant parts and their functions, and state plant propagation techniques. You will also recall various aspects of crop science such as the nutrient requirement of crops, the germination process, and crop diseases. In addition, you will identify critical hazards and state safety policies, procedures, and equipment. You will explain professional, ethical, and legal responsibilities in the AFN industry. Finally, you will identify teamwork and leadership skills essential for a successful career in the field of agriscience.

Activity	Activity Objective
Soil Systems	• Recall the process of soil formation, soil classification, soil improvement, and soil conservation.
Plant Science	• Identify plant structure, physiology, and reproduction.
Crop Science	• Recall the processes of germination, growth, and development in plants, and various classes of crops grown in the United States.
Safety and Regulations	• State safety hazards and safety precautions and procedures related to the agriculture, food, and natural resources (AFN) industry.
Teamwork	• Identify teamwork and leadership skills needed to successfully lead a team.
Unit Activity: Soil and Plant Science	• Participate in or research a Supervised Agricultural Experience (SAE) and create an agriculture skills profile.

UNIT 3: WORLD TRADE AND COMMUNICATION

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In this unit, you will name reading strategies for understanding the purpose and content of a workplace document. You will also identify the methods of planning and structuring content for written documents and explain guidelines for reviewing written documents. You will define communication, differentiate between verbal and non-verbal cues, define active listening, and state strategies to become an effective listener. In addition, you will recall essential qualities and skills such as creativity, resourcefulness, and problem-solving and conflict-resolution skills. Finally, you will identify the different types of markets and trends in agricultural marketing, name various agricultural practices, and define the importance of world trade.

Activity	Activity Objective
Reading and Writing	• Describe effective reading and writing skills by reading and interpreting workplace documents and writing clearly.
Speaking and Listening	• Identify effective speaking and listening skills by communicating effectively with customers and employees and following directions.
Creative Resourcefulness	• Identify methods for creative thinking, problem-solving, and resourcefulness in the workplace.
World Trade and Agriculture	• Identify agricultural practices and marketing, and the importance of world trade.
Conflict Resolution	• Identify conflict-resolution skills by negotiating diplomatic solutions to avoid interpersonal and workplace issues.
Unit Activity: World Trade and Communication	• Identify student organizations, and list the skills and other benefits that can be gained from participating in them.

Course Map

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You will achieve course level objectives by completing each lesson's instruction, assignments, and assessments. For a detailed look at how the materials meet these objectives, review the course map.

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