

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

Course Overview

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

Course Goals

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

- Examine the anatomy, health, and management of animals.
- Analyze the use of technology in the Animal, Food, and Natural Resources (AFN) industry.
- Evaluate the role of management in the AFN industry.
- Analyze the skills necessary for a career in the AFN industry, such as time management and customer service skills.
- Collect information on AFN careers and job-seeking behaviors, such as applying for jobs in the industry.
- Create a plan for solving conservation and pollution issues.
- Propose a business idea in the AFN industry and create a business plan for the idea.

Prerequisite Skills

Principles of Agriculture, Food, and Natural Resources, Semester B has the following prerequisites:

- interest in the field of agriculture, food, and natural resources
- familiarity with the writing process and following guidelines

General Skills

To participate in this course, you should be able to do the following:

- Complete basic operations with word-processing software, such as Microsoft Word or Google Docs.
- Perform online research using various search engines and library databases.
- Communicate through email and discussion boards.

For a complete list of the general skills required for participation in online courses, refer to the Prerequisites section of the Student Orientation document, found at the beginning of this course.

Credit Value

Principles of Agriculture, Food, and Natural Resources, Semester B is a 0.5-credit course.

Course Materials

- notebook
- computer with an Internet connection and speakers or headphones
- Microsoft Word or equivalent
- Microsoft Excel or equivalent
- Microsoft PowerPoint or equivalent

Course Pacing Guide

This course description and pacing guide is intended to help you stay on schedule with your work. Note that your course teacher may modify the schedule to meet the specific needs of your class.

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. <i>Pretests are optional assessments, typically designed for credit recovery use. If a student shows mastery of a lesson's objective, the student may be automatically exempted from that lesson in the upcoming unit. Typically, teachers do not choose to employ exemptive pretests for first-time credit courses. Pretests are not included as a component of the student's final grade.</i>	3	0%
Module. <i>Each module in this course contains an interactive tutorial and an associated mastery test. Tutorials may include one or more Lesson Activities that constitute tasks associated with the tutorial. The module score comes from a student's score on the mastery test.</i>	15	20%
Discussion. <i>Online discussions allow for higher-order thinking about terminal objectives. An online threaded discussion mirrors the educational experience of a classroom discussion. Teachers can initiate a discussion by asking a complex, open-ended question. Students can engage in the discussion by responding both to the question and to the thoughts of others. Each unit in a course has one predefined discussion topic; teachers may add more discussion topics.</i>	3	20%
Unit Activity. <i>Unit Activities are at the end a unit and constitute one or more small tasks. Their 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.</i>	3	20%
Posttest. <i>The posttest appears at the end of the unit and mirrors the pretest in structure, content, and complexity.</i>	3	20%
End of Semester Test. <i>The end of semester test (EOS) appears at the end of the course. Students are delivered a few items from every tutorial in the course in order to assess the major course objectives.</i>	1	20%
Total	28	100%

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

Unit 1: Animal and Food Science

Summary

In this unit, you will state concepts related to animal and food sciences. You will define the nine main body systems and describe animal growth and development as well as animal diseases and animal breeding. You will also name the major nutrients and their sources. In addition, you will state food processing, preserving, and packaging techniques. Finally, you will recall essential skills such as time, task, and resource management, goal setting, customer service skills, critical-thinking skills, and problem-solving skills.

Day	Activity/Objective	Type
1 day: 1	Syllabus and Student Orientation <i>Review the Student Orientation and Course Syllabus at the beginning of this course.</i>	Course Orientation
5 days: 2–6	Animal Science <i>Describe the principles of animal anatomy, physiology, health, reproduction, and management.</i>	Lesson
5 days: 7–11	Food Science and Technology <i>Identify the importance of food science and technology, and various aspects of food processing, food preservation, and food packaging.</i>	Lesson
4 days: 12–15	Time, Task, and Resource Management <i>List time, task, and resource management skills and explain how to organize and implement a productive plan of work.</i>	Lesson
4 days: 16–19	Customer Service <i>Examine and reflect upon customer service skills and best practices, differentiate between internal and external customers, and describe strategies for improving customer satisfaction.</i>	Lesson
4 days: 20–23	Critical Thinking and Problem Solving <i>Identify decision-making styles and describe critical-thinking and problem-solving skills in various scenarios.</i>	Lesson
1 day: 24	Para Jumble	Game
5 days: 25–29	Unit Activity/Threaded Discussion—Unit 1 <i>List backyard conservation ideas and ways to execute them and write about one conservation action.</i>	Unit Activity

Day	Activity/Objective	Type
1 day: 30	Post-test—Unit 1	Assessment

Unit 2: Technology and Agriculture

Summary

In this unit, you will state the role of emerging technologies in agricultural sciences. You will also identify power, structural, and technical systems in the AFN industry. Then, you will recall various career options related to power systems. You will also name biotechnologies, genetically modified (GM) foods, greenhouse technology, precision farming, and new technologies such as biopharming and vertical farms. Finally, you will state the importance and use of the Internet and information technology.

Day	Activity/Objective	Type
5 days: 31–35	Power and Structural Technology <i>Identify power, structural, and technical systems, and personal protective equipment used in the agriculture, finance, and natural resources (AFN) industry.</i>	Lesson
5 days: 36–40	Technology in Agricultural Science <i>Describe various technologies and processes in the agriculture, food, and natural resources (AFN) industry.</i>	Lesson
4 days: 41–44	Job-Specific Technologies <i>Discuss job-specific technologies used to accomplish work responsibilities in a productive manner.</i>	Lesson
4 days: 45–48	Information Technology <i>Describe information technology skills required to use computers and software/programs effectively.</i>	Lesson
4 days: 49–52	Internet Use and Security <i>Identify proper Internet use and security and state ways to avoid security breaches and misuse of the Internet.</i>	Lesson
1 day: 53	Space Jumble	Game

Day	Activity/Objective	Type
5 days: 54–58	Unit Activity/Threaded Discussion—Unit 2 <i>Apply problem-solving techniques to create a solution for any pollution issue and identify the country that consumes the most oil and produces the most greenhouse gases.</i>	Unit Activity
1 day: 59	Post-test—Unit 2	Assessment

Unit 3: Opportunities in Agriscience

Summary

In this unit, you will identify the role of management in agribusinesses and recall key management functions. You will also identify leadership skills, job acquisition and career advancement skills. Then, you will name entrepreneurial opportunities and describe various careers in the AFN industry. You will also state the skills, qualifications, and certifications needed for these careers. Finally, you will identify the steps used in scientific methods of research, recall major inventions and developments in the AFN industry, state the challenges faced by the agricultural sector, and identify solutions to these challenges.

Day	Activity/Objective	Type
4 days: 60–63	Management and Entrepreneurship <i>Explain the role of management in the agriculture, food, and natural resources (AFN) industry and entrepreneurial opportunities in this industry.</i>	Lesson
4 days: 64–67	Lifelong Learning <i>Identify lifelong-learning skills by continually acquiring new industry-related information and improving professional skills.</i>	Lesson
4 days: 68–71	Job Acquisition and Advancement <i>Explain the process of applying for and securing a job in your desired industry, as well as best practices for career advancement.</i>	Lesson
5 days: 72–76	Careers in Agricultural Science <i>Identify various careers in the agriculture, food, and natural resources (AFN) industry in the United States.</i>	Lesson

Day	Activity/Objective	Type
5 days: 77–81	The Future of Agriculture <i>Identify the steps in scientific research and recall developments and technologies in the agriculture, food, and natural resources (AFN) industry.</i>	Lesson
1 day: 82	Thwack-A-Mole	Game
5 days: 83–87	Unit Activity/Threaded Discussion—Unit 3 <i>Create a business proposal for an AFN enterprise and list and explain the components of a business proposal.</i>	Unit Activity
1 day: 88	Post-test—Unit 3	Assessment
1 day: 89	Semester Review	
1 day: 90	End-of-Semester Test	Assessment

Course Map

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 for Semester B](#).