



eDynamicLearning

— CAREER & ELECTIVE COURSES —

*Introduction to*  
**Agriscience**



Course Syllabus



# Introduction to Agriscience

### Course Description

Agriculture has played an important role in the lives of humans for thousands of years. It has fed us and given us materials that have helped us survive. Today, scientists and practitioners are working to improve and better understand agriculture and how it can be used to continue to sustain human life. In this course, students learn about the development and maintenance of agriculture, animal systems, natural resources, and other food sources. Students also examine the relationship between agriculture and natural resources and the environment, health, politics, and world trade.

### Table of Contents

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|  |    |
|--|----|
| Unit 1: The Importance of Agriscience . . . . .  | 3  |
| Unit 2: Agriscience and the Environment. . . . . | 4  |
| Unit 3: Plant Science . . . . .                  | 5  |
| Unit 4: The Animal Element . . . . .             | 6  |
| Midterm Exam . . . . .                           | 7  |
| Unit 5: Animal Anatomy . . . . .                 | 8  |
| Unit 6: Technology and Agriscience . . . . .     | 9  |
| Unit 7: Careers in Agriscience . . . . .         | 10 |
| Unit 8: Agribusiness Management . . . . .        | 11 |
| Final Exam . . . . .                             | 12 |



## Unit 1: The Importance of Agriscience

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### Unit Summary

This unit explores the role of agriculture in history. It has built many societies, including America, and agriculture still plays an essential role in the economies of many states, particularly Florida and California. Because better farming leads to increased production, agriscience, which is defined in this unit, is an essential part of keeping the agriculture industry thriving. This unit also explores the economic significance of agriculture and the variables that shape relationships between import and export. Because agriscience requires using technology effectively, students will learn how to determine if a website is valid.

### Learning Objectives

- Understand the importance of agriculture in history and define agriscience.
- Explain the significance of agriculture in American and state economies.
- Analyze the variables impacting imports and exports.
- Determine the relationship between agriculture and society at the local, state, national, and international levels.
- Evaluate the reliability of a website and recognize those that are appropriate for use in agriscience.

### Assignments

|                                |            |           |
|--------------------------------|------------|-----------|
| Unit 1 Text Questions          | Homework   | 10 points |
| Unit 1 Online Lab Questions    | Homework   | 10 points |
| Unit 1 Project #1              | Homework   | 20 points |
| Unit 1 Discussion Assignment 1 | Discussion | 5 points  |
| Unit 1 Discussion Assignment 2 | Discussion | 5 points  |
| Unit 1 Quiz                    | Quiz       | 15 points |



## Unit 2: Agriscience and the Environment

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### Unit Summary

This unit explains the relationship between agriscience and the environment. Agriculture is dependent on natural resources, so it is important to understand the ways in which natural resources support agriculture and how to keep them healthy. Soil, water, and air are among the most essential resources, and the most vulnerable to pollution. Human actions have the most influence over the environment, so people are most responsible for helping support a healthy environment. Preserving resources benefits all, and agriscientists contribute by developing new forms of fuel. Finally, the unit explores the importance of communication.

### Learning Objectives

- Explain the relationship between agriscience and the environment.
- Identify threats to a healthy environment.
- Compare and contrast practices for conserving renewable and nonrenewable resources.
- Describe how natural resources are used in agriculture.
- Demonstrate effective communication skills.

### Assignments

|                                |            |           |
|--------------------------------|------------|-----------|
| Unit 2 Text Questions          | Homework   | 10 points |
| Unit 2 Online Lab Questions    | Homework   | 10 points |
| Unit 2 Project #2              | Homework   | 20 points |
| Unit 2 Discussion Assignment 1 | Discussion | 5 points  |
| Unit 2 Discussion Assignment 2 | Discussion | 5 points  |
| Unit 2 Quiz                    | Quiz       | 15 points |



## Unit 3: Plant Science

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### Unit Summary

This unit is all about plants. Students will identify and understand the function of the different parts of the plant. They will also learn how plants process elements to sustain their lives and those of all living creatures. The basic parts of a cell—and their functions—are covered as well, as are the differences among the types of cells. Soil classification systems are also explored, including those focusing on use, type, and consistency. Finally students will learn the importance of critical-thinking skills in the workplace.

### Learning Objectives

- Identify the major parts of plants and state the important functions of each.
- Describe the relationships among air, soil, water, and essential plant nutrients.
- Compare the cell structure and function of plants, animals, bacteria, and viruses.
- Apply the different types of soil classification.
- Recognize and use critical-thinking skills.

### Assignments

|                                |            |           |
|--------------------------------|------------|-----------|
| Unit 3 Text Questions          | Homework   | 10 points |
| Unit 3 Online Lab Questions    | Homework   | 10 points |
| Unit 3 Project #3              | Homework   | 20 points |
| Unit 3 Discussion Assignment 1 | Discussion | 5 points  |
| Unit 3 Discussion Assignment 2 | Discussion | 5 points  |
| Unit 3 Quiz                    | Quiz       | 15 points |



## Unit 4: The Animal Element

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### Unit Summary

This unit provides an overview of some of the livestock that make up the American agriculture industry. These animals are valuable not only for the meat they provide, but also other types of food and products. Both large and small animals play a significant role in this industry and require proper attention to their health. Appropriate living conditions and diet are the minimum standards for animal care, and these vary depending on the type of animal and the way it processes food. Students will also explore debates around the country about standards of animal care, particularly those on large commercial farms. Laws and regulations define the minimum standards for the ethical care of animals, although part of succeeding in agriscience and the agriculture industry is demonstrating ethical behaviors in all aspects of business.

### Learning Objectives

- Understand and explain the evolution and roles of domesticated animals in society.
- Differentiate between domestication and natural selection.
- Defend various points of view regarding the use of animals.
- Determine the basic nutritional requirements of animals.
- Articulate the importance of ethics in the agriculture industry.

### Assignments

|                                |            |           |
|--------------------------------|------------|-----------|
| Unit 4 Text Questions          | Homework   | 10 points |
| Unit 4 Online Lab Questions    | Homework   | 10 points |
| Unit 4 Project #4              | Homework   | 20 points |
| Unit 4 Discussion Assignment 1 | Discussion | 5 points  |
| Unit 4 Discussion Assignment 2 | Discussion | 5 points  |
| Unit 4 Quiz                    | Quiz       | 15 points |



## Midterm Exam

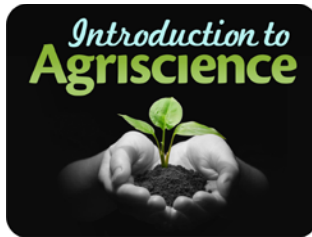
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### Learning Objectives

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from the first four units in this course (Note: You will be able to open this exam only one time.)

### Assignments

|                               |            |           |
|-------------------------------|------------|-----------|
| Midterm Exam                  | Exam       | 50 points |
| Midterm Discussion Assignment | Discussion | 5 points  |



## Unit 5: Animal Anatomy

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### Unit Summary

This unit explores the basics of animal anatomy. As agriscientists strive to develop stronger and more productive animals, they need to know how their bodies work. Working with genes is also an important part of the industry since techniques like selective breeding and genetic alteration can greatly increase agricultural production. When agriscientists know how genes function and what can and cannot be altered, they can work to create the best possible genetic combination in livestock and plants. One of the key improvements agriscientists strive to make is resistance to the various pests that can be devastating to livestock and crops. There are many ways to combat these organisms, and one of the most common is by using pesticides, which can be hazardous if used incorrectly. This is why safety is such an important aspect of working in agriculture.

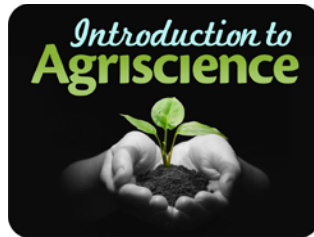
### Learning Objectives

- Explore and discuss animal anatomy and systems.
- Comprehend and describe basic animal genetics.
- Identify the major pest groups and the importance of effective pest-management programs.
- Classify the nature of chemicals used to control pests.
- Demonstrate health and safety procedures, regulations, and personal-health practices.

### Assignments

|                                |            |           |
|--------------------------------|------------|-----------|
| Unit 5 Text Questions          | Homework   | 10 points |
| Unit 5 Online Lab Questions    | Homework   | 10 points |
| Unit 5 Project #5              | Homework   | 20 points |
| Unit 5 Discussion Assignment 1 | Discussion | 5 points  |
| Unit 5 Discussion Assignment 2 | Discussion | 5 points  |
| Unit 5 Quiz                    | Quiz       | 15 points |





## Unit 6: Technology and Agriscience

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### Unit Summary

This unit explores how agriscience and technology work together for better food production. There are many steps between growing the food and getting it into the hands of consumers, and each of these needs to be closely monitored to keep food safe. Fortunately, developing technology offers ways of better monitoring all aspects of food production. The intersection of technology and food does not always generate a positive reaction, however. Growing concerns about the long-term impact of biotechnology, particularly GMOs, are generating concerns and shifting consumer behavior. This unit will explore some of the issues raised when technology and agriculture become deeply intertwined. Because agriculture is such an important part of the American economy and the daily lives of citizens, those working in agriculture have a particularly responsibility to manage their businesses well and demonstrate professional behavior whether they are in the field or the boardroom.

### Learning Objectives

- Describe efforts made to improve the environment.
- Analyze the effects of technology on agriculture.
- Communicate public concerns about technology and agriculture.
- Research the laws and regulations around biotechnology.
- Demonstrate appropriate professional behavior.

### Assignments

|                                |            |           |
|--------------------------------|------------|-----------|
| Unit 6 Text Questions          | Homework   | 10 points |
| Unit 6 Online Lab Questions    | Homework   | 10 points |
| Unit 6 Project #6              | Homework   | 20 points |
| Unit 6 Discussion Assignment 1 | Discussion | 5 points  |
| Unit 6 Discussion Assignment 2 | Discussion | 5 points  |
| Unit 6 Quiz                    | Quiz       | 15 points |



## Unit 7: Careers in Agriscience

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### Unit Summary

This unit explores the careers available in agriscience and how agriscientists use their expertise around the world. By understanding the range of careers in the agriscience industry, students can begin to narrow down their options and find that career that is best for them. Part of building a successful career is understanding how basic farm equipment works. There are a variety of professional organizations, including the National Future Farmers of America Organization, designed to help students develop the technical and practical skills required to go into agriculture-related fields and get hands-on experience by working with industry experts. A good career also depends on knowing how to dress as a professional and demonstrate the values that employers want to see in the workplace. Combining exceptional skills with superlative personal conduct will chart a solid career path in any profession.

### Learning Objectives

- Explore issues of global significance and document the impact of agriscience.
- Identify career opportunities in agriscience.
- Identify how careers are classified and determine preparation requirements.
- Identify personal aptitudes and skills needed for solid career planning.
- Develop a career plan that reflects career interests, pathways, and postsecondary options.

### Assignments

|                                |            |           |
|--------------------------------|------------|-----------|
| Unit 7 Text Questions          | Homework   | 10 points |
| Unit 7 Online Lab Questions    | Homework   | 10 points |
| Unit 7 Project #7              | Homework   | 20 points |
| Unit 7 Discussion Assignment 1 | Discussion | 5 points  |
| Unit 7 Discussion Assignment 2 | Discussion | 5 points  |
| Unit 7 Quiz                    | Quiz       | 15 points |



## Unit 8: Agribusiness Management

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### Unit Summary

This unit explores the business side of agriculture, including the various ways that farmers and ranchers move their products to market. Like small businesses owners, those running their own ventures in the agriculture industry will need to develop versatile skills to meet multiple demands. Those in agriscience need to understand how livestock and crops are sold and marketed so that their contributions increase the value of crops. Agribusiness management is another career in which an agriscience background is helpful. These experts help agricultural businesses reach their financial and production goals. This is just one of the many leadership positions in the agriculture industry, although anyone can develop strong leadership skills. The unit also explores the implications of an increasingly diverse workplace and strategies for effectively negotiating the challenges this can create.

### Learning Objectives

- Compare procedures for marketing plants and animal products.
- Define management terms and determine how decisions are made.
- Demonstrate entrepreneurship skills and knowledge of self-employment options and innovative ventures.
- Demonstrate respect for individual and cultural differences and recognize the importance of diversity in the workplace.
- Define “leadership” and identify the responsibilities, competencies, and behaviors of successful leaders.

### Assignments

|                                |            |           |
|--------------------------------|------------|-----------|
| Unit 8 Text Questions          | Homework   | 10 points |
| Unit 8 Online Lab Questions    | Homework   | 10 points |
| Unit 8 Project #8              | Homework   | 20 points |
| Unit 8 Discussion Assignment 1 | Discussion | 5 points  |
| Unit 8 Discussion Assignment 2 | Discussion | 5 points  |
| Unit 8 Quiz                    | Quiz       | 15 points |



## Final Exam

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### Learning Objectives

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from units five to eight in this course – the last four units. (Note: You will be able to open this exam only one time.)

### Assignments

|  |            |           |
|--|------------|-----------|
| Final Exam                             | Exam       | 50 points |
| Class Reflection Discussion Assignment | Discussion | 10 points |