

» Course Overview

Below, review the syllabus for the course. Please check with your instructor and school for any changes and additional information or policies. Make sure you review all of this page as you will be quizzed on it next!

In this course, students will explore the various components of agriscience careers and agricultural living. Beginning with career exploration, students will become familiar with the vast array of opportunities that exist in agriscience. They will discover what is necessary for the proper care and management of livestock from keeping living quarters clean to caring for newborn animals. Students will understand the ways in which plants, crops, and vegetation thrive in varying conditions. They will explore the fundamentals of running a successful agriscience operation as well as how agriscience affects and is affected by global economic conditions.

» Course Outline by Module

Module 1	The Agriscience Industry, Health, and Nutrition	Module 5	Plant Production Systems Part II
Module 2	Livestock Reproduction	Module 6	Agribusiness
Module 3	Livestock Management	Module 7	Global Economy Part I
Module 4	Plant Production Systems Part I	Module 8	Global Economy Part II

» Module Overview and Learning Objectives

| Module 1. The Agriscience Industry, Health, and Nutrition

Throughout the module, you will explore various careers in agriscience. There are various career paths to pursue and several ways to advance in your chosen career. You will also learn about the significance of cleaning and maintaining facilities, particularly for animals. There are techniques and processes for cleaning equipment that ensure it will work correctly. Finally, you will learn about the nutritional needs of animals. It's imperative that agriscience professionals understand what animals need to thrive.

Learning Objectives: In this module, students will:

- Investigate career opportunities in agriscience industries.
- Describe training requirements for entry and advancement in agriscience careers.
- Demonstrate proper methods to clean and disinfect animal equipment and facilities.
- Explain proper disposal of animal waste with regards to sanitation, economics, and environmental implications.
- Describe a livestock animal's digestive system.
- Describe nutritional requirements of animals.

| Module 2. Livestock Reproduction

Understanding livestock reproduction - from anatomy to caring for newborn animals - is essential in the life of an agriscience professional. You must develop the skills necessary to care for animals, young and old. The purposes of raising livestock vary from companionship to sports to food and non-food products. Where you work and what you do will impact how hands-on you are with livestock and how much care you provide to them directly. Any job in which you manage or understand livestock will require a thorough knowledge of how they function and what they require to thrive.

Learning Objectives: In this module, students will:

- Investigate career opportunities in agriscience industries.
- Describe training requirements for entry and advancement in agriscience careers.
- Demonstrate proper methods to clean and disinfect animal equipment and facilities.
- Explain proper disposal of animal waste with regards to sanitation, economics, and environmental implications.
 - Describe a livestock animal's digestive system.
 - Describe nutritional requirements of animals.

| Module 3. Livestock Management

Agriscience professionals need to be able to identify animals by their characteristics and attributes. Throughout the module, you will analyze ways of animal identification and how each is utilized. Additionally, you will discover the methods used to transport, handle, and restrain animals so that they remain safe and secure. Finally, you will learn about the nuances of animal exhibitions. This is a complex and comprehensive activity where animals are raised and trained to be evaluated and judged in competitive settings.

Learning Objectives: In this module, students will:

- Describe methods of animal identification
- Describe methods of restraining, loading, handling, and transporting animals safely
- Develop procedures for exhibiting animals. The student will be able to:
 - Demonstrate the procedures for preparing, maintaining, and handling livestock
- Develop procedures for exhibiting animals. The student will be able to:
 - Compare and contrast appropriate livestock evaluation criteria
- Develop procedures for exhibiting animals
- Prepare appropriate registrations, shipping, and health certificates required for exhibiting or marketing animals
- Develop procedures for exhibiting animals
- Demonstrate appropriate grooming and showmanship skills

| Module 4. Plant Production Systems Part I

Growing healthy crops and plants is integral to farms. The process of crop system management is complex. It involves knowing the proper nutrients for the soil, understanding the irrigation needed to propagate crops, and many other sustainable techniques. Throughout the module, you will investigate the various ways of growing and transplanting plants. Additionally, you will further understand proper fertilization for the many soil needs of a successful harvest. You will explore pruning techniques and the benefits of doing so. Finally, you will learn about hydroponic and aeroponic systems.

Learning Objectives: In this module, students will:

- Compare different plant production systems (seed, cutting, air layer, and tissue culture)
- Propagate, transplant, and grow plants
- Select and prepare a site and/or a seedbed for planting
- Identify methods of pruning plants to achieve desired growth and to maintain health
- Identify types of hydroponic systems; identify methods used in hydroponic systems

| Module 5. Plant Production Systems Part II

Fertilizer helps plants flourish. But if you've ever been to the fertilizer section of a large garden store, you know there are plenty. Throughout this module, you will investigate which types and quantities of fertilizer are used for what plants and crops. The ratios of ingredients are critical, so you will spend time familiarizing yourself with fertilizer labels and how to properly read them. You will compare the nutrients in fertilizers to find the best mix for what it is you intend to grow. In addition to what type of fertilizer, there is also the question of how to apply the fertilizer to the plants. You previously learned that soil is the lifeblood of plants, so you will discover ways of collecting soil samples and determining what nutrients are there and which are lacking. Finally, you will understand how to test soil for pH and soluble salts, which will aid in decision-making about what to add or remove from soil to help plants thrive.

Learning Objectives: In this module, students will:

- Investigate proper methods to fertilize plants and crops. The student will be able to:
 - Interpret information on a fertilizer label
 - Compare sources and forms of nutrients
 - Determine methods of applying fertilizer materials
 - Collect soil samples to determine nutrient levels
 - Test soil for pH and soluble salts

| Module 6. Agribusiness

The business sector known as agribusiness includes commercial operations related to farming and farming itself. It consists of the production, processing, and distribution processes necessary to get an agricultural product to market. Since farm products may be exported, this economic sector is significant in nations with fertile land. Throughout the module, you will explore everything from hand tool maintenance to small engine repair. You will investigate the facets of business, like maintaining budgets, balance sheets, and income statements. Finally, you will learn about the financing of agribusinesses.

Learning Objectives: In this module, students will:

- Use and maintain hand tools and power equipment (e.g., power saws, welders)
- Describe the maintenance and service of small engines
- Introduce science principles as applied in selected mechanical applications (e.g. hydraulics, and internal combustion)
- Apply principles of agribusiness finance. The student will be able to:
 - Identify components of balance sheets and income statements
 - Identify major sources of credit for agribusiness
 - Complete a business loan application
- Maintain and interpret agribusiness financial records including depreciation, inventory, and budgets

| **Module 7. Global Economy Part I**

Agriculture activities play an important role in the US and global economies. Not only is agriculture a major employer, but its industries provide necessary products to people all over the world. Agricultural products make up a large part of people's expenditures and there will never be a time when agriculture is unnecessary. In this module, we'll explore the impact of agriculture on the domestic and global economies. This includes the regulatory laws and legislation placed on agribusinesses by governmental agencies worldwide. You will discover which government agencies are responsible for these regulations and laws and how they interact and help agriscience professionals. Finally, you will investigate emerging technologies and understand how they are impacting agricultural activities now and how the future of agriscience may look.

Learning Objectives: In this module, students will:

- Assess the agricultural impact on the US gross national product and the total global economy
- Investigate local, state, and national regulatory laws, industry regulations, and legislation for agricultural businesses
- Identify and describe the primary government agencies involved with agriculture
- Research new and emerging technologies and their impact on agribusiness and the economy

| **Module 8. Global Economy Part II**

In this module, you will continue to explore the components of agribusiness. You'll begin learning about food in the industry. Food nourishes everyone in the world. Food safety, growth processes, food waste, and other elements are critical to make sure that food not only provides nourishment, but also does it sustainably and efficiently. You will

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investigate careers in agribusiness. Whether you want to get your hands dirty by working the land or you want to manage the marketing or finance of a small farm, there is a place in agribusiness for you.

Learning Objectives: In this module, students will:

- Describe the value of the food and agribusiness industry
- Examine the scope of career opportunities in agriculture and the importance of the agriculture industry to the economy
- Define and explore agriculture and agribusinesses and their role in the economy
- Evaluate and explore the agribusiness career opportunities in agriculture
- Compare how key organizational structures and processes affect organizational performance and the quality of products and services