



EXAM GUIDE FOR THE **AGRICULTURE SYSTEMS** ASSOCIATE CERTIFICATION

Industry Certifications by Agricultural Education Services and Technology (AEST) and Florida Farm Bureau are essential components of the Complete Experience and prepare students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems.

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About the Agriculture Systems Associate Certification

The Agriculture Systems Associate Certification encompasses the study of basic skills and principles of agricultural systems used in the dairy, beef, swine, poultry, vegetable, nursery and landscape, and food science industries.

Purpose of the Exam Guide

This exam guide is designed to prepare you to sit for the AEST Agriculture Systems Associate certification exam. It includes information about the exam, exam objectives, recommended references and sample questions – all with the intent of helping you achieve a passing score. AEST recommends a combination of classroom instruction and self-study to maximize your chances of earning industry certification.

Exam Specifics

Certified individuals will have demonstrated competence in the application of industry-based principles and techniques required for effective performance of basic agricultural skills.

The exam is 50 questions in length and includes multiple-choice options for all questions. Individuals are required to score a 74% or above to earn certification.

In addition to fundamental skills and knowledge related to agriculture systems, certifications encompass skills and practices that everyone should acquire to be career ready including communication, decision-making, creativity and innovation, critical thinking, problem solving, integrity, ethical leadership and cultural/global competency.

Indicators are identified by industry and correlated with current educational frameworks.

Primary Recommended References

1. Text: Exploring Agriscience 5th Edition
2. PDF: USDA Farm Resource Regions
(https://www.ers.usda.gov/webdocs/publications/42298/32489_aib-760_002.pdf?v=42487)

Secondary References

Secondary references can be found at **CERTIFY.AG**. They are designed to enforce the industry concepts measured on this exam.

State Alignment and Weighting

Area of Study	Florida Standard Alignment (FL DOE 2017-18 course 8021300)	Weight
Evolution of Agriculture	01.01, 01.02, 01.03, 01.04, 01.05, 04.06, 12.06	4%
Animal Welfare and Animal Rights	02.02, 02.03, 02.04, 03.02, 04.03, 05.04	4%
The Dairy Industry	03.01, 03.04, 03.05	14%
The Beef Industry	04.01, 04.02, 04.04, 04.05, 04.06	14%
The Swine Industry	04.01, 04.02, 04.04, 04.05, 04.06	14%
The Poultry Industry	05.01, 05.02, 05.03	14%
The Vegetable Industry	07.02, 07.04, 07.05, 07.06, 07.07, 07.08, 07.09	14%
The Nursery Industry	08.03, 08.04, 08.05, 08.06, 08.07, 08.08	14%
Food Science	04.06, 05.03, 05.05, 07.12	4%
Leadership and Communication for the Workplace	10.02, 10.03, 10.05, 11.01, 11.03, 11.04, 12.03, 12.04	4%

Basic Exam Outline

The Evolution of Production Agriculture2 Questions

Text: Chapters 1, 25 ; PDF: USDA Farm Resource Regions

- Importance of Agriculture
- Agricultural Production Regions
- Shifts In Agricultural Production
- Technological Advancements In Agricultural Production

Animal Welfare and Animal Rights.....2 Questions

Text: Chapter 21

- Animal Rights
- Animal Welfare
- Animal Cruelty

The Dairy Industry.....7 Questions

Text: Chapters 15, 25

- Dairy Breeds
- Dairy Specific Terminology
- Milking Parlors
- Dairy Processing and Products

The Beef Industry.....7 Questions

Text: Chapters 14, 25

- Beef Breeds
- Beef Specific Terminology
- Beef Management Practices
- Beef Cattle Operations
- Beef Products and Byproducts

The Swine Industry.....7 Questions

Text: Chapters 14, 25

- Swine Breeds
- Swine Specific Terminology
- Swine Management Practices
- Swine Operations
- Swine Products and Byproducts

The Poultry Industry.....7 Questions

Text: Chapter 16

- Broiler and Layer Operations
- Poultry Specific Terminology
- Poultry Management Practices
- Poultry Products and Byproducts

The Vegetable Industry.....7 Questions

Text: Chapters 3, 4, 5, 12, 18

- Vegetable and Seed Identification
- Pests and Beneficial Insect Identification
- Growing Systems
- Vegetable Management Practices

The Nursery and Landscape Industry.....7 Questions

Text: Chapter 7

- Nursery and Landscape Identification
- Nursery and Landscape Specific Terminology
- Cultural Practices
- Best Management Practices

The Food Science Industry.....2 Questions

Text: Chapter 20

- Farm to Fork Process
- Food Handling Practices
- Nutritional Label Components

Leadership and Communication for the Workplace.....2 Questions

Secondary References

- Parliamentary Procedure
- Written and Oral Communication Skills

Detailed Outline & Sample Questions

The Evolution of Production Agriculture

- Importance of Agriculture
 - a. Identify benefits to humans
 - b. Scale of global, national and state scale
- Agricultural Production Regions
 - a. USDA Farm Resource Regions
 - b. Florida commodities and production regions
- Shifts In Agricultural Production
 - a. Major agricultural inventions
- Technological Advancements In Agricultural Production
 - a. Biotechnology

Sample Question

What invention in the 1880s expanded the beef industry by allowing meat to be transported across the country and stored for extended periods?

- A. barbed wire
- B. McCormick reaper
- C. refrigerated boxcar--*correct answer*
- D. steam tractor

Animal Welfare and Animal Rights

- Animal Rights
 - a. Compare animal rights and animal welfare
- Animal Welfare
 - a. Identify animals' basic needs
 - b. Explain how animal activist groups affect production agriculture (PETA, FARM, UPC, Farm Sanctuary)
- Animal Cruelty
 - a. Identify animal cruelty

Sample Question

What activity would an animal rights activist most likely support?

- A. circuses
- B. free-range poultry—*correct answer*
- C. hunting
- D. petting zoo

The Dairy Industry

- Dairy Breed Identification
 - a. Ayrshire
 - b. Brown Swiss
 - c. Guernsey
 - d. Holstein
 - e. Jersey
 - f. Milking Shorthorn
- Dairy Specific Terminology
 - a. External anatomy
- Milking Parlors
 - a. Rotary (Carousel) parlor
 - b. Herringbone parlor
 - c. Tandem parlor
 - d. Parallel (Side-by-Side) parlor
- Dairy Processing and Products
 - a. Steps to move milk from the farm to the refrigerator
 - b. Milk products
 - c. Milk classes and grades

Sample Question

Why is milk pasteurized?

- A. To allow the proteins to coagulate and form into a solid.
- B. To kill harmful bacteria that could cause human illnesses.---correct answer
- C. To ensure the starter bacteria and rennet are evenly distributed.
- D. To reduce the size of globules so it will not separate and float to the top.

The Beef Industry

- Beef Breed Identification
 - a. Angus
 - b. Braford
 - c. Brahman
 - d. Brangus
 - e. Charolais
 - f. Chianina
 - g. Hereford
 - h. Santa Gertrudis
 - i. Simmental
 - j. Texas Longhorn
- Beef Specific Terminology
 - a. External anatomy
 - b. Terms describing animals based on age, sex, etc.
 - c. Ruminant digestion

- Beef Management Practices
 - a. Breeding methods
 - b. Castration
 - c. Dehorning
 - d. Identification methods
 - e. Vaccination
- Beef Cattle Operations
 - a. Purebred operations
 - b. Cow-calf operations
 - c. Stocker operations
 - d. Feedlot operations
- Beef Products and Byproducts
 - a. Wholesale cuts
 - b. Byproducts

Sample Question

What is the final production stage in the beef industry?

- A. backgrounding operations
- B. cow-calf operations
- C. feedlot operations—*correct answer*
- D. stocker operations

The Swine Industry

- Swine Breeds
 - a. Berkshire
 - b. Chester White
 - c. Duroc
 - d. Hampshire
 - e. Landrace
 - f. Poland China
 - g. Yorkshire
- Swine Specific Terminology
 - a. External anatomy
 - b. Terms describing animals based on age, sex, etc.
- Swine Management Practices
 - a. Breeding methods
 - b. Castration
 - c. Identification methods
 - d. Tail docking
 - e. Teeth clipping
 - f. Vaccination
- Swine Operations
 - a. Farrowing operations
 - b. Finishing operations
- Swine Products and Byproducts
 - a. Wholesale cuts
 - b. Byproducts

Sample Question

Why are piglet needle teeth clipped?

- A. To decrease the piglet's growth rate.
- B. To prevent injury to the sow during nursing.--*correct answer*
- C. To prevent injury to the boar while sleeping.
- D. To increase the piglet's ability to grind mineral blocks.

The Poultry Industry

- Broiler and Layer Operations
 - a. Purpose of each operation
 - b. Activities performed within each operation
- Poultry Specific Terminology
 - a. External anatomy
 - b. Terms describing animals based on age, sex, etc.
- Poultry Management Practices
 - a. Debeaking
 - b. Hatcheries
 - c. Identification methods
 - d. Vaccination
- Poultry Products and Byproducts
 - a. Carcass parts
 - Whole Breast
 - Split Breast with Ribs
 - Boneless, Skinless Whole Breast
 - Breast Quarter
 - Leg Quarter
 - Leg
 - Drumstick
 - Boneless, Skinless Thigh
 - Thigh
 - Wing
 - b. Parts of an egg
 - c. Consumer egg grades

Sample Question

What is the purpose of the layer industry?

- A. egg production--*correct answer*
- B. feather production
- C. meat production
- D. restocking wildlife populations

The Vegetable Industry

- Vegetable and Seed Identification
 - a. Bell Pepper
 - b. Cabbage
 - c. Cucumber
 - d. Potato
 - e. Snap Bean
 - f. Squash
 - g. Sweet Corn
 - h. Tomato
- Pests and Beneficial Insect Identification
 - a. Beneficial Insects
 - Green Garden Spider
 - Lady Beetle
 - Praying Mantis
 - Lace Wing
 - b. Insect Pests
 - Aphids
 - Cutworm
 - Green Stink Bug
 - Leafhopper
 - Leafminer
 - Mole Cricket
 - c. Weed Pests
 - Crabgrass
 - Florida Pusley
 - Nutsedge/ Nutgrass
- Growing Systems
 - a. Greenhouses
 - b. Hydroponic systems
 - c. Open field systems
 - d. Organic systems
 - e. Raised beds
- Vegetable Management Practices
 - a. Site Selection
 - Soil type
 - Water availability
 - Sunlight exposure
 - b. Soil Preparation
 - Fertilizer macro-nutrients
 - Fertilizer safety
 - BMPs for soil erosion and fertilizer use
 - c. Planting Methods
 - d. Cultural Practices
 - Pests and weed control methods
 - Irrigation types and methods

Sample Question

What vegetable is grown by planting dormant buds called “eyes”?

- A. bell pepper
- B. cucumber
- C. potato--*correct answer*
- D. sweet corn

The Nursery and Landscape Industry

- Bedding Plant Identification
 - a. Coleus, *Solenostemon scutellarioides*
 - b. Geranium, *Pelargonium x hortorum*
 - c. Marigold, *Tagetes spp.*
 - d. Petunia, *Petunia x hybrida cv.*
 - e. Snapdragon, *Antirrhinum majus*
 - f. Wax Begonia, *Begonia semperflorens-cultorum*
- Landscape Plant Identification
 - a. Azalea, *Rhododendron spp.*
 - b. Bougainvillea, *Bougainvillea spp.*
 - c. Croton, *Codiaeum variegatum*
 - d. Dwarf Burford Holly, *Ilex cornuta 'Burfordii Nana'*
 - e. Gardenia, *Gardenia augusta*
 - f. Hibiscus, *Hibiscus rosa-sinensis*
 - g. Oleander, *Nerium oleander*
- Tree and Grass Identification
 - a. Bahiagrass, *Paspalum notatum*
 - b. Bermuda Grass, *Cynodon dactylon*
 - c. Crape Myrtle, *Lagerstroemia indica*
 - d. Live Oak, *Quercus virginiana*
 - e. Red Maple, *Acer rubrum*
 - f. Southern Magnolia, *Magnolia grandiflora*
 - g. St. Augustine Grass, *Stenotaphrum secundatum*
 - h. Zoysiagrass, *Zoysia spp.*
- Nursery and Landscape Specific Terminology
- Cultural Practices
 - a. Growing media
 - b. Growing areas
 - c. Propagation
- Best Management Practices
 - a. Florida Friendly Landscaping Principles

Sample Question

What is the most popular form of asexual propagation used in the nursery industry?

- A. cuttings--*correct answer*
- B. division
- C. seeds
- D. tissue culture

The Food Science Industry

- Farm to Fork Process
 - a. Animal food product pathway
 - b. Plant food product pathway
- Food Handling Practices
 - a. Food preservation
 - b. Food safety
- Nutritional Label Components

Sample Question

Why are foods frozen?

- A. To prevent shrinkage from heat exposure.
- B. To prevent spoiling by stopping bacteria production.--*correct answer*
- C. To prevent taste degradation due to carbon dioxide exposure.
- D. To prevent off color from forming due to extended light exposure.

Leadership and Communication for the Workplace

- Parliamentary Procedure
 - a. Chairman Responsibilities/Leadership Qualities
 - b. Rules of Basic Motions
 - Adjourn
 - Amend
 - Division of the House (Assembly)
 - Main Motion
 - Refer to a Committee
- Written and Oral Communication Skills

Sample Question

What leadership quality should a chairperson at a meeting possess?

- A. aggressive
- B. impertinent
- C. sympathetic
- D. tactful--*correct answer*