

**Program Matrix - Subject Area  
Agriculture 6-12 (DOE Code 299)  
University of Florida**

<b>Agricultural Education - Bachelor</b>		<b>Program Requirements</b>													
<b>Subject Area Competencies and Skills (22nd Edition)</b>		AEB 3133 Principles of Agribusiness Mgt.	AEC 4323 Development and Philosophy of Agricultural Education	AEC 4202 Curriculum Development and Assessment Techniques in Emerging Agricultural Techniques	AEC 4224 Special Methods in Teaching Agricultural Education	AEC 4228 Laboratory Practices in Teaching Agricultural Education	AEC 4504 Curriculum and Planning for Agricultural Education	AEC 4942 Agricultural Education Internship	ANS 3006C Intro to Animal Science	AOM 3220 AG Construction and Maintenance	BSC 2007 Biological Sciences	SWS 3022 Intro to Soils in the Environment	Food Science Elective	Horticulture / Plant Science Elective	Plant / Animal Science Elective
<b>Agriculture 6-12</b>		<b>"C" below indicates where content is covered through coursework</b>													
<b>1. Knowledge of leadership, career opportunities, and employability skills</b>															
1.	Identify the National FFA organization mission, program of activities, career development events, awards, and degree programs.		C				C	C							
2.	Identify important events in the history of the FFA.		C					C							
3.	Identify the organizational structure of the FFA.		C					C							
4.	Identify responsibilities of FFA chapter officers and committee chairpersons.						C	C							
5.	Identify public speaking skills.				C		C	C							
6.	Identify the rules of parliamentary procedure.						C	C							
7.	Identify career opportunities in agriculture.					C		C							
8.	Identify skills for obtaining and maintaining employment.		C		C			C							
<b>2. Knowledge of animal science</b>															
1.	Identify livestock and companion animal terminology.						C	C	C						
2.	Identify desirable characteristics of livestock and companion animals.							C	C						
3.	Identify animal production systems and reproduction practices.							C	C						
4.	Identify animal nutrition, feedstuffs, and feeding practices.							C	C						
5.	Identify components of animal health, including diseases, health and sanitation practices, and veterinary terminology.							C	C						
6.	Identify safety practices related to animal handling.						C	C	C						
7.	Identify principles and methods of marketing animals and animal products.							C	C						
8.	Identify appropriate procedures for animal exhibition.							C	C						
9.	Identify animal anatomy and physiology.							C	C						
10.	Identify practices in aquatic animal production.							C	C						
11.	Identify practices that promote animal welfare.							C	C						

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<b>3. Knowledge of soil science</b>															
1.	Evaluate the suitability of different types of soil for the production of various crops.							C				C			
2.	Identify soil formations and the classifications of soil.							C				C			
3.	Identify methods and procedures for soil testing.							C				C			
4.	Identify formulations and use of different types of fertilizer.							C				C			
5.	Identify methods and techniques of soil preparation, water management, and rotation in the production of crops.							C				C			
6.	Identify types of soil erosion and conservation practices.							C				C			
<b>4. Knowledge of plant science</b>															
1.	Apply basic principles of taxonomy to plant classification.							C							C
2.	Identify distinguishing features of major plant groups.							C							C
3.	Identify requirements for plant growth and development.							C							C C
4.	Identify parts of plants and their functions.							C							C C
5.	Identify the physiological processes in plants.							C							C C
6.	Identify the effects of different environmental factors on plant growth and development.							C							C C
7.	Identify sexual and asexual plant reproduction processes.							C							C C
8.	Identify basic principles of plant genetics and their application to agriculture.							C							C C
9.	Identify types, varieties, characteristics, and uses of economically important crops and ornamentals grown in Florida.							C							C C
10.	Identify procedures and techniques for selecting, planting, caring for, harvesting, and handling food crops.							C							C C
11.	Identify the effects of pests and nutrient deficiencies on crops, turf, and ornamentals.							C							C C
12.	Identify proper procedures and practices for greenhouse management.							C							C C
13.	Identify procedures and techniques for preparing and using different types of plant media.							C							C C
14.	Identify procedures and techniques for selecting and caring for ornamental crops.							C							C C
15.	Identify basic principles and techniques of landscape design and construction.							C							C C
16.	Identify proper handling and application of chemicals.							C							C C

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<b>5. Knowledge of agricultural systems technology</b>															
1.	Identify safety practices used in an agriculture laboratory.					C		C		C					
2.	Identify common hand and power tools and their proper uses.					C		C		C					
3.	Identify the proper use of oxyacetylene welding, cutting, and metal fabrication equipment.					C		C		C					
4.	Use measurement and mathematics in agriculture applications.							C		C					
5.	Identify basic agricultural equipment safety practices.					C		C		C					
6.	Identify procedures for maintaining tools and equipment.							C		C					
7.	Identify basic principles of gas and diesel engine operation.							C		C					
8.	Identify facility construction and building maintenance practices.					C		C		C					
9.	Identify principles of electric controls, motors, and electricity.					C		C		C					
10.	Identify principles in managing plumbing and irrigation systems.							C		C				C	
11.	Apply principles of physics to agricultural systems.							C		C					
12.	Identify uses of computer technology in agriculture.							C		C					
<b>6. Knowledge of environmental sciences and natural resources</b>															
1.	Identify conservation practices related to renewable and nonrenewable resources.							C		C					
2.	Identify the hydrologic cycle in Florida.							C				C			
3.	Identify governmental agencies that regulate environmental and natural resources.							C				C			
4.	Identify the relationships within Florida ecosystems.							C				C			
5.	Identify positive and negative impacts of agriculture on the environment.							C				C			

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<b>7. Knowledge of agricultural business management, economics, and marketing</b>															
1.	Identify the role and importance of the agribusiness sector in economic development.	C						C							
2.	Identify the input, production, and marketing sectors of the agribusiness system.	C						C							
3.	Identify methods of planning and organizing agribusiness enterprises.	C						C							
4.	Use record keeping, budgeting, and financial statements in making budgetary decisions.	C						C							
5.	Identify sources and uses of credit in agriculture.	C						C							
6.	Identify the principles of supply and demand and the economics of resource use for agricultural commodities.	C						C							
7.	Identify practices used in agricultural marketing and international trade.	C						C							
8.	Identify the roles of government agencies that serve agriculture.	C	C					C							
9.	Identify the types of supervised agriculture experience (SAE) programs and their benefits.					C	C	C							
<b>8. Knowledge of agricultural department management and professional development</b>															
1.	Identify professional publications and organizations for agricultural education.			C				C							
2.	Identify strategies in agricultural curriculum planning, curriculum development, and evaluation of instructional resource materials.			C				C							
3.	Identify the functions of agricultural education advisory committees, alumni, and community support groups.						C	C							
4.	Identify important legislation affecting the development of agricultural education.		C					C							
5.	Identify the roles of FFA, SAE, and classroom instruction in an agriculture program.						C	C							
6.	Identify principles of agricultural classroom and laboratory management.					C		C							

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<b>9. Knowledge of biotechnology</b>															
1.	Identify historical milestones, advantages, and disadvantages in biotechnology.							C			C		C		
2.	Identify the parts of a cell structure and their functions.							C			C				
3.	Predict the characteristics and performance of offspring based upon the genetic makeup of the parents.							C	C		C			C	C
<b>10. Knowledge of food science and systems</b>															
1.	Identify major food commodities.							C						C	
2.	Identify food safety issues on local, state, national, and international levels.							C						C	
3.	Identify beneficial microorganisms involved in the food industry.							C						C	
4.	Identify appropriate food-handling procedures.					C		C						C	
5.	Identify emerging techniques in food processing and preservation.							C						C	
6.	Identify important historical events and developments in food production.							C						C	
7.	Identify differences in agricultural practices employed in various regions of the world.							C	C					C	