2025 - 2026

PROGRAM GUIDE

AGRICULTURE, FOOD, AND NATURAL RESOURCES CLUSTER AND

AFNR MIDDLE SCHOOL



ALABAMA STATE DEPARTMENT OF EDUCATION
CAREER AND TECHNICAL EDUCATION
KEN SEALY, EDUCATION ADMINISTRATOR
COLLIN ADCOCK, EDUCATION SPECIALIST
REBECCA BALKCOM, EDUCATION SPECIALIST
ASHLEY HOLMES, EDUCATION SPECIALIST
(334) 694-4876

Agriculture, Food, and Natural Resources Cluster

This cluster prepares students for employment in career pathways that relate to the \$70 billion plus industry of agriculture. The mission of agriscience education is to prepare students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber and natural resource industries. There are six program areas in this cluster: General Agriscience, Animal Science, Plant Science, Environmental and Natural Resources, Industrial Agriscience and Middle School. Extended learning experiences to enrich and enhance instruction are reinforced through learner participation in the career and technical student organization related to agriscience education. Project-based learning experiences, otherwise known as a Supervised Agriculture Experience (SAE) are an integral part of agriscience education.

**Courses highlighted in yellow are shared with other clusters. See "Shared Courses" table on page 7 for additional details.

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Career	Animal Science Program			
Pathway	(Must teach three courses from this program list within two years)			
Program	This program is designed to provide students with an understanding of livestock management, veterinary science, poultry science, equine science, and			
Ü	food processing.			
Course	Career Pathway Program Courses	Career Readiness Indicator (CRI)	In Demand Occupations	
Number	Career rathway rrogram courses	Carter Readiness Indicator (CRI)	In Demand Occupations	
18003G1003	Advanced Agriscience	Adult Beef Quality Assurance	 Ag Field Service Representative 	
18004G1001	Agribiology – Science credit eligible	(The following three areas required):	Agricultural Equipment Operators	
18401G1000	Agricultural and Biosystems Engineering	1. Cow/Calf	Agricultural Sales	
18402G1001	Agricultural Industrial Maintenance	2. Stocker/Backgrounder	Agricultural Technician	
18306G1002	Aquaculture Science – Science credit eligible	3. Feedyard	Animal Caretakers	
18306G1003	Aquatic Biology	American Meat Science Association	Animal Scientist	
18998G1000	Career Pathway Project in AFNR	(AMSA) Food Safety and Science	Animal Breeder	
18997G1000	CTE Lab in AFNR	Certification	 Artificial Insemination Technician 	
18104G1000	Equine Science	American Meat Science Association	Biological Technician	
18104G0500	Equine Science (½ credit)	(AMSA)Meat Evaluation Certification	Farm Products Purchasing Agent	
19254G1000	Food Safety and Microbiology – Science credit eligible	Aquaculture Training and Online	Farm Worker	
18003G1001	Fundamentals of Agriscience	Learning (ATOLL) Aquaculture or	Farmers, Ranchers, and Other	
18002G0500	Fundamentals of Agriscience (1/2 credit)	Aquaponics	Agricultural/Aquacultural Managers	
18501G1002	Introduction to Animal and Dairy Science	Biotechnician – Skills for Success	 Farmworkers, Farm, Ranch, and 	
18501G0502	Introduction to Animal and Dairy Science (1/2 credit)	Elanco Fundamentals of Animal Science Certification	Aquacultural Animals	
18105G1012	Introduction to Veterinary Science		Food Quality Assurance	
18402G1000	Poultry Industrial Maintenance	Elanco Veterinary Medical Applications Certification	Food Science Technician	
18101G1000	Poultry Science	• FAA Part 107	Graders and Sorters, Agricultural	
18101G0500	Poultry Science (½ credit)	Forklift – Skills for Success	Products	
18105G1022	Veterinary Science	MSSC – Certified Production	 Laborers and Freight, Stock, and Material 	
		Technician (CPT): Each module will	Movers, Hand	
		count as a CRI. The CPT 4.0 program	Livestock Manager	
		consists of five individual certificate	 Non-Farm Animal Worker 	
		assessments:	Poultry Operator	
		1. Safety	USDA Inspector	
		Quality Practices &	Veterinarian	
		Measurement	Veterinary Technician	
		Manufacturing Processes &	 Zoologist and Wildlife Biologist 	
		Production		
		4. Maintenance Awareness		
		NCCER Core (Module 6 is an		
		elective and not required for CRI)		
		National Collegiate Livestock		
		Coaches Association (NCLCA)		
		Principles of Livestock Selection and		
		Evaluation		
		National Horse Judging Team Conclude Association (NH ITCA)		
		Coaches Association (NHJTCA) Equine Management and Evaluation		
		Skid Steer – Skills for Success		
		Veterinarian Assistant – Skills for Supposes		
		Success		

Career	Environmental and Natural Resources Program			
Pathway	(Must teach three courses from this program list within two years)			
Program	This program is designed to provide students with an understanding of the forestry and wildlife science and management of natural resources.			
Course	Company Dathermany Data arrange Commany	Canana Dandinasa Indiantan (CDI)	In Domand Commetican	
Number	Career Pathway Program Courses	Career Readiness Indicator (CRI)	In Demand Occupations	
18004G1001	Agribiology – Science credit eligible	Biotechnician – Skills for Success	Agricultural Equipment Operators	
18401G1000	Agricultural and Biosystems Engineering	Bulldozer – Skills for Success	Agricultural Technician	
18402G1001	Agricultural Industrial Maintenance	Ducks Unlimited Ecology	Biological Technician	
18998G1000	Career Pathway Project in AFNR	Conservation and Management	Environmental Engineer	
18997G1000	CTE Lab in AFNR	Certification	Environmental Engineering Technicians	
18502G1005	Dendrology	Excavator Operator – Skills for	Environmental Science and Protection	
18504G1000	Environmental Management – Science credit eligible	Success	Technicians, Including Health	
18501G1001	Fish and Wildlife Management	• FAA Part 107	Environmental Science Teachers,	
18501G0501	Fish and Wildlife Management (½ credit)	Forestry Worker Certification	Postsecondary	
18502G1001	Forestry	Integrated Pest Management	• Fallers	
18502G0500	Forestry (½ credit)	Certification	Fishing and Hunting Workers	
18402G1002	Forestry Industrial Maintenance	 Land Survey Helper – Skills for 	 Forest and Conservation Technicians 	
18003G1001	Fundamentals of Agriscience	Success	Conservation Officer	
18002G0500	Fundamentals of Agriscience (½ credit)	MSSC – Certified Production	Forester	
18003G1002	Intermediate Agriscience	Technician (CPT): Each module will	 Hazardous Materials Removal Workers 	
18502G1002	Urban Forestry	count as a CRI. The CPT 4.0 program	Hunters and Trappers	
18502G1006	Wildland Firefighting and Controlled Fire	consists of five individual certificate	Geological/Hydrological Technicians	
		assessments:	Lab Technician	
		 Safety Quality Practices & 	Logger	
		Measurement	Logging Equipment Operators	
		3. Manufacturing Processes &	Natural Science Manager	
		Production	Pesticide Handlers, Sprayers, and	
		4. Maintenance Awareness	Applicators Vegetation.	
		NCCER Core (Module 6 is an elective)	Professional Fisherman	
		and not required for CRI)	Recreation Worker	
		Nursery & Landscape Worker	Refuse and Recyclable Material	
		Skid Steer – Skills for Success	Collectors	
		Tree Surgery (TS) Permit	Soil Scientist	
		Urban Forestry Technician	Tree Trimmers and Pruners	
		Water Treatment Operator Grade 2 –	Water and Wastewater Treatment Plant	
		Skills for Success	and System Operators	
			Wildlife Biologist	

Career Pathway Program	General Agriculture Program (Must teach three courses from this program list within two years) This program is designed to deliver a variety of agricultural disciplines which will provide students a general understanding of the scope of agriculture as it relates to the following areas: animal science, plant science, food science, forestry and agricultural construction and agricultural mechanics.		
Course	Career Program Pathway Courses	Career Readiness Indicator (CRI)	In Demand Occupations
Program	This program is designed to deliver a variety of agricu as it relates to the following areas: animal science, pl	altural disciplines which will provide students a grant science, food science, forestry and agricultural	eneral understanding of the scope of agriculture al construction and agricultural mechanics.
		 Plumbing Helper – Skills for Success Skid Steer – Skills for Success Specialty Crops Urban Forestry Technician Water Treatment Operator Grade 2 - Skills for Success 	

Career Pathway Program	Industrial Agriculture Program (Must teach three courses from this program list within two years) This program is designed to provide students with a general understanding of industrial maintenance, power equipment and modern construction building practices along with a basic understanding of metal fabrication and welding.		
Course Number	Career Pathway Program Courses	Career Readiness Indicator (CRI)	In Demand Occupations
18401G1000	Agricultural and Biosystems Engineering	Asphalt Roller – Skills for Success	Agricultural Equipment Operators
18449G1003	Agricultural Engines	Biotechnician – Skills for Success	Agricultural Contractor
18449G0500	Agricultural Engines (½ credit)	Briggs and Stratton Technician (Two	Agricultural Engineer
18402G1001	Agricultural Industrial Maintenance	of the following areas required)	Agricultural Technician
18404G1001	Agricultural Welding 1	1. Theory of Operation	 Automotive Service Technicians and
18404G0500	Agricultural Welding 1 (½ credit)	2. Carburetors and Fuel Systems	Mechanics
18404G1002	Agricultural Welding 2	3. Governors	Biological Technician
18003G1004	Applied Agriscience	4. Compression	Construction Laborer
18998G1000	Career Pathway Project in AFNR	5. Ignition Systems	Construction Manager
18997G1000	CTE Lab in AFNR	Bulldozer – Skills for Success Garmantan Halaman, Skills for Success	Electrician
18011G1000	Construction Finishing and Interior Systems	Carpentry Helper – Skills for Success Carpetration and Skills d Trade	Farm Labor Contractors
18004G1000	Construction Framing	Construction and Skilled Trade Assessment (CAST)	Farm Equipment Mechanics and Service
18014G1000	Construction Site Preparations and Foundations	Electrical Helper – Skills for Success	Technicians
18402G1002	Forestry Industrial Maintenance	Executed Heiper – Skills for Success Excavator Operator- Skills for Success	First-Line Supervisors of Mechanics,
18003G1001	Fundamentals of Agriscience	• FAA Part 107	Installers, and Repairers
18002G0500	Fundamentals of Agriscience (½ credit)	Forestry Worker Certification	HVAC Technician
18003G1002	Intermediate Agriscience	Forklift – Skills for Success	Industrial Maintenance Technician
18403G1000	Introduction to Agricultural Construction	Home Builders Association of	Mechanical Drafter
18010G1001	Introduction to Agricultural Wiring	Alabama Residential Construction	Mobile Heavy Equipment Mechanics,
18402G1000	Poultry Industrial Maintenance	Skills Certification	Except Engines
20110G1003	Residential and Commercial Power Equipment	 Land Survey Helper – Skills for 	Pipe Layer Plumber
		Success	
		 Meat Cutter – Skills for Success 	Tire Repairers and Changers Welder
		 MSSC – Certified Production 	• weider
		Technician (CPT): Each module will	
		count as a CRI. The CPT 4.0 program	
		consists of five individual certificate	
		assessments: 1. Safety	
		2. Quality Practices &	
1		Measurement	
		3. Manufacturing Processes &	
		Production	
1		4. Maintenance Awareness	
		NCCER Carpentry Level 1	
		• NCCER Core (Module 6 is an elective	
		and not required for CRI)	
		NCCER Welding Level 1	
		 Plumbing Helper – Skills for Success 	
		 Skid Steer – Skills for Success 	

Career	Plant Science Program		
Pathway	(Must teach three courses from this program list within two years)		
Program	This program is designed to provide students with an und		
Course Number	Career Pathway Program Courses	Career Readiness Indicator (CRI)	In Demand Occupations
18004G1001 18401G1000 18402G1001 18998G1000 18997G1000 18502G1005 18056G1002 18056G0502 19254G1000 18502G1001 18502G0500 18402G1002 18003G1001 18002G0500 18052G1001 18052G0502 18052G1001 18052G0502 18052G1001 18052G0500 1803G1002 18052G1001 18052G0500 1803G1002	Agribiology – Science credit eligible Agricultural and Biosystems Engineering Agricultural Industrial Maintenance Career Pathway Project in AFNR CTE Lab in AFNR Dendrology Floriculture and Floral Design Floriculture and Floral Design (½ credit) Food Safety and Microbiology – Science credit eligible Forestry Forestry (½ credit) Forestry Industrial Maintenance Fundamentals of Agriscience Fundamentals of Agriscience Fundamentals of Agriscience (½ credit) Greenhouse and Nursery Production Greenhouse and Nursery Production (½ credit) Horticulture Science Horticulture Science Landscape Design and Management Plant Biotechnology – Science credit eligible Turfgrass Management Urban Forestry	American Meat Science Association (AMSA) Food Safety and Science Certification BASF Plant Science Certification Biotechnician – Skills for Success Bulldozer – Skills for Success Excavator Operator – Skills for Success Excavator Operator – Skills for Success FAA Part 107 Forestry Worker Certification Forklift – Skills for Success Integrated Pest Management Certification Landscape Design (LD) Permit Landscape Design and Plant Materials Certification Landscape Management Technician Land Survey Helper – Skills for Success MSSC – Certified Production Technician (CPT): Each module will count as a CRI. The CPT 4.0 program consists of five individual certificate assessments:	Agricultural Equipment Operators Agricultural Technician Agronomy Sales Biological Technician Chemical Engineer Conservation Scientists Event Planner Farmworkers and Laborers, Crop, Nursery, and Greenhouse Florist Florist Worker Food Science Technicians Forest and Conservation Workers Foresters Golf Course Superintendent Lab Technician Landscaping and Groundskeeping Workers Loggers Logging Equipment Operators Pest Control Worker Pesticide Handlers, Sprayers, and Applicators, Vegetation Soil Scientist Tree Trimmers and Pruners Turfgrass Producer

<u>2025-2026 Subject and Personnel Codes</u> Agriculture, Food, and Natural Resources and Agriscience Middle School Program

Agriculture, Food and Natural Resources Cluster Courses			
Course	Course Name	Course	Course Name
Number		Number	
18003G1003	Advanced Agriscience	19254G1000	Food Safety and Microbiology – Science credit eligible
18004G1001	Agribiology – Science credit eligible	18502G1001	Forestry
18401G1000	Agricultural and Biosystems Engineering	18502G0500	Forestry (½ credit)
18449G1003	Agricultural Engines	18402G1002	Forestry Industrial Maintenance
18449G0500	Agricultural Engines (½ credit)	18003G1001	Fundamentals of Agriscience
18402G1001	Agricultural Industrial Maintenance	18002G0500	Fundamentals of Agriscience (½ credit)
18404G1001	Agricultural Welding 1	18052G1002	Greenhouse and Nursery Production
18404G0500	Agricultural Welding 1 (½ credit)	18052G0502	Greenhouse and Nursery Production (½ credit)
18404G1002	Agricultural Welding 2	18052G1001	Horticulture Science
18205G1000	Agriculture Communications and Technology	18052G0500	Horticulture Science (½ credit)
18204G1000	Agriculture Marketing and Management	18003G1002	Intermediate Agriscience
18003G1004	Applied Agriscience	18403G1000	Introduction to Agricultural Construction
18306G1002	Aquaculture Science – Science credit eligible	18010G1001	Introduction to Agricultural Wiring
18306G1003	Aquatic Biology	18501G1002	Introduction to Animal and Dairy Science
18998G1000	Career Pathway Project in Agriculture, Food, and	18501G0502	Introduction to Animal and Dairy Science (½ credit)
	Natural Resources		
18011G1000	Construction Finishing and Interior Systems	18105G1012	Introduction to Veterinary Science
18004G1000	Construction Framing	18056G1001	Landscape Design and Management
18014G1000	Construction Site Preparations and Foundations	18308G1002	Plant Biotechnology – Science credit eligible
18997G1000	CTE Lab in Agriculture, Food and Natural Resources	18402G1000	Poultry Industrial Maintenance
	(AFNR)		
18502G1005	Dendrology	18101G1000	Poultry Science
18504G1000	Environmental Management – Science credit eligible	18101G0500	Poultry Science (½ credit)
18104G1000	Equine Science	20110G1003	Residential and Commercial Power Equipment
18104G0500	Equine Science (½ credit)	18054G1000	Turfgrass Management
18501G1001	Fish and Wildlife Management	18502G1002	Urban Forestry
18501G0501	Fish and Wildlife Management (½ credit)	18105G1022	Veterinary Science
18056G1002	Floriculture and Floral Design	18502G1006	Wildland Firefighting and Controlled Fire
18056G0502	Floriculture and Floral Design (1/2 credit)		

	Middle Sch	ool Program Co	ourses
18001G0735	Agriscience Exploration (7th Grade) (35 Instructional	18001G0610	Orientation to Agriscience (6 th Grade) (140 Instructional
	Hour Course)		Hour Course)
18001G0770	Agriscience Exploration (7th Grade) (70 Instructional	18001G0835	Pre-Agriscience (8th Grade) (35 Instructional Hour Course)
	Hour Course)		
18001G0710	Agriscience Exploration (7th Grade) (140 Instructional	18001G0870	Pre-Agriscience (8th Grade) (70 Instructional Hour Course)
	Hour Course)		
18001G0635	Orientation to Agriscience (6th Grade) (35 Instructional	18001G0810	Pre-Agriscience (8th Grade) (140 Instructional Hour
	Hour Course)		Course)
18001G0670	Orientation to Agriscience (6th Grade) (70 Instructional		
	Hour Course)		

	Shared Courses				
Course Number	Course Name	Cluster(s)	Required Year to Implement COS		
19254G1000	Food Safety and Microbiology	Hospitality & Tourism	2021-2022		
		Human Services			
18105G1012	Introduction to Veterinary Sciences	Health Science	2021-2022		
18105G1022	Veterinary Science	Health Science 2021-2022			

General Note: Course descriptions and content standards for most courses are located on the Alabama Department of Education website at: https://www.alabamaachieves.org/career-and-technical-education/cte-courses-of-study/.

College and Career Readiness Indicator Course Matrix

Program Name	General Agriculture	Animal Science	Plant Science
Foundation Course(s)	Fundamentals of Agriscience	Fundamentals of Agriscience	Fundamentals of Agriscience
Concentrator	Advanced Agriscience	Advanced Agriscience	Agribiology
Course(s)	Agribiology Science	Agribiology	Agricultural and Biosystems Engineering
	Agricultural and Biosystems Engineering	Agricultural and Biosystems Engineering	Agricultural Industrial Maintenance
	Agricultural Industrial Maintenance	Agricultural Industrial Maintenance	Dendrology
	Agriculture Communications and	Aquaculture Science	Floriculture and Floral Design
	Technology	Aquatic Biology	Food Safety and Microbiology
	Agriculture Marketing and Management	Equine Science	Forestry
	Applied Agriscience	Food Safety and Microbiology	Forestry Industrial Maintenance
	Food Safety and Microbiology	Fundamentals of Agriscience	Fundamentals of Agriscience
	Forestry	Introduction to Animal and Dairy	Greenhouse and Nursery Production
	Horticulture Science	Science	Horticulture Science
	Intermediate Agriscience	Introduction to Veterinary Science	Intermediate Agriscience
	Introduction to Agricultural Construction	Poultry Industrial Maintenance	Landscape Design and Management
	Introduction to Animal and Dairy	Poultry Science	Plant Biotechnology
	Science	Veterinary Science	Turfgrass Management
			Urban Forestry
Capstone Course(s)	Career Pathway Project in Agriculture, Food, and Natural Resources	Career Pathway Project in Agriculture, Food, and Natural Resources	Career Pathway Project in Agriculture, Food, and Natural Resources
	CTE Lab in AFNR	CTE Lab in AFNR	CTE Lab in AFNR

Program Name	Environmental and Natural Resources	Industrial Agriculture
Foundation Course(s)	Fundamentals of Agriscience	Fundamentals of Agriscience
Concentrator Course(s)	Agribiology Agricultural and Biosystems Engineering Agricultural Industrial Maintenance Dendrology Environmental Management Fish and Wildlife Management Forestry Forestry Industrial Maintenance Fundamentals of Agriscience Intermediate Agriscience Urban Forestry Wildland Firefighting and Controlled Fire	Agricultural and Biosystems Engineering Agricultural Engines Agricultural Industrial Maintenance Agricultural Welding 1 Agricultural Welding 2 Applied Agriscience Construction Finishing and Interior Systems Construction Framing Construction Site Prep and Foundations Forestry Industrial Maintenance Fundamentals of Agriscience Intermediate Agriscience Introduction to Agricultural Construction Introduction to Agricultural Wiring Poultry Industrial Maintenance Residential and Commercial Power
Capstone Course(s)	Career Pathway Project in Agriculture, Food, and Natural Resources CTE Lab in AFNR	Equipment Career Pathway Project in Agriculture, Food, and Natural Resources CTE Lab in AFNR

To meet the CCR Indicator as a CTE completer, a student must earn three (3.0) credits with the grade of a "C" or higher in CTE courses that are part of an approved CTE program of study. Additional requirements are outlined in Memorandum FY22-2065.

This matrix is intended for general guidance on the CCR completer status and is subject to change. For all CTE programming information, please refer to the CTE Cluster specific Program Guide. It contains a list of approved CTE programs, valid course numbers, required prerequisite courses, approved Career Readiness Indicators (CRIs) and in demand occupations.

*Courses are listed in alphabetical order, not in sequential order.