



2020-2021

**PROGRAM GUIDE FOR: NEWLY ADOPTED COURSE OF STUDY
AGRICULTURE,
FOOD AND NATURAL RESOURCES CLUSTER,
AND
ARGISCIENCE MIDDLE SCHOOL**



NOVEMBER 20, 2020
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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 Agriculture, Animal Science, Plant Science, Environmental and Natural Resources, Industrial Agriculture 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 agriculture education. The National FFA organization (FFA) serves as the CTSO for this cluster. Additionally, project-based learning experiences, otherwise known as a Supervised Agriculture Experience (SAE) are an integral part of agriculture education.

General Agriculture Program Pathway (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 wildlife sciences, agricultural construction and agricultural mechanics.				
Career Pathway Program	Code Number	Career Program Pathway Courses	Career Readiness Indicator (CRI)	Workforce Careers
	420101	Fundamentals of Agriscience	<ul style="list-style-type: none"> • NCCER Core (module 6 is an elective and not required for CRI) • Urban Forestry Technician • Landscape Management Technician • Landscape Design (LD) Permit • Landscape Design and Plant Materials Certification • Integrated Pest Management Certification • Forestry Worker Certification • Adult Beef Quality Assurance (The following three areas required): <ol style="list-style-type: none"> 1. Cow/Calf 2. Feed yard 3. Stocker • Briggs and Stratton Technician (Two of the following areas required) <ol style="list-style-type: none"> 1. Theory of Operation 2. Carburetors and Fuel Systems 3. Governors 4. Compression 5. Ignition Systems • Construction and Skilled Trade Assessment (CAST) • Specialty Crops • Aquaculture Training and Online Learning (ATOLL) Aquaculture or Aquaponics • MSSC – Certified Production Technician (CPT): Each module will count as a CRI. The CPT 4.0 program consists of five individual certificate assessments: <ol style="list-style-type: none"> 1. Safety 2. Quality Practices & Measurement 3. Manufacturing Processes & Production 4. Maintenance Awareness 	<ul style="list-style-type: none"> • Agriscience Teacher • Construction Manager • Post-Secondary Agricultural Sciences Teacher • Agricultural Equipment Operator • Warehouse Facility Manager • Food Quality Assurance • USDA Inspector • Construction Laborer • Maintenance Technician • Agricultural Engineer • Welder • Plumber • Electrician • HVAC Technician • Industrial Maintenance Technician • Agricultural Sales • Refuse and Recyclable Material Collectors • Farmworkers, Farm, Ranch, and Aquacultural Animals • Farm Equipment Mechanics and Service Technicians • First-Line Supervisors of Farming, Fishing, and Forestry Workers • Water and Wastewater Treatment Plant and System Operators
	420010	Fundamentals of Agriscience (1/2 Credit)		
	420102	Intermediate Agriscience		
	420103	Advanced Agriscience		
	420104	Applied Agriscience		
	TBD	Agribiology		
	TBD	Agricultural and Biosystems Engineering		
	TBD	Agricultural Industrial Maintenance		
	420071	Agricultural Communications and Technology		
	420072	Agricultural Marketing and Management		
	420037	Aquaculture Science		
	420024	Fish and Wildlife Management		
	420025	Fish and Wildlife Management (1/2 Credit)		
	TBD	Food Safety and Microbiology		
	420020	Forestry		
	420021	Forestry (1/2 Credit)		
	TBD	Forestry Industrial Maintenance (Requires Agricultural Industrial Maintenance as a prerequisite)		
	420051	Horticulture Science		
	420052	Horticulture Science (1/2 Credit)		
	TBD	Introduction to Agricultural Construction		
	420030	Introduction to Animal and Dairy Science		
	420031	Introduction to Animal and Dairy Science (1/2 Credit)		
	420033	Poultry Science		
	TBD	Poultry Science (1/2 Credit)		
	TBD	Poultry Industrial Maintenance (Requires Agricultural Industrial Maintenance as a prerequisite)		
	420078	CTE Lab in AFNR		
	420077	Career Pathway Project in AFNR (Must successfully complete any two courses in the AFNR Cluster as a prerequisite to this course)		

Career Pathway Program	Animal Science Program Pathway (Must teach three courses from this program list within two years)		
	This program is designed to provide students with an understanding of livestock management, veterinary science, poultry science, equine science and food processing.		
Code Number	Career Pathway Program Courses	Career Readiness Indicator (CRI)	Workforce Careers
420101	Fundamentals of Agriscience	<ul style="list-style-type: none"> • Adult Beef Quality Assurance (The following three areas are required): <ul style="list-style-type: none"> ○ Cow/Calf ○ Stocker ○ Feed yard • Aquaculture Training and Online Learning (ATOLL) Aquaculture or Aquaponics • MSSC – Certified Production Technician (CPT): Each module will count as a CRI. The CPT 4.0 program consists of five individual certificate assessments: <ol style="list-style-type: none"> 1. Safety 2. Quality Practices & Measurement 3. Manufacturing Processes & Production 4. Maintenance Awareness 	<ul style="list-style-type: none"> • Food Science Technician • Farm Worker • Artificial Insemination Technician • Veterinarian • Veterinary Technician • Farm Products Purchasing Agent • Agricultural Sales • Non-Farm Animal Worker • Livestock Manager • Poultry Operator • Ag Field Service Representative • Food Quality Assurance • USDA Inspector • Laborers and Freight, Stock, and Material Movers, Hand • Farmworkers, Farm, Ranch, and Aquacultural Animals • Agricultural Equipment Operators • Farmers, Ranchers, and Other Agricultural Managers
420010	Fundamentals of Agriscience (1/2 Credit)		
TBD	Agricultural and Biosystems Engineering		
TBD	Agribiology		
TBD	Agricultural Industrial Maintenance		
420037	Aquaculture Science		
420038	Aquatic Biology		
420034	Equine Science		
TBD	Equine Science (1/2 Credit)		
TBD	Food Safety and Microbiology		
410003	Introduction to Veterinary Science		
420030	Introduction to Animal and Dairy Science		
420031	Introduction to Animal and Dairy Science (1/2 Credit)		
TBD	Poultry Industrial Maintenance (Requires Agricultural Industrial Maintenance as a prerequisite)		
420033	Poultry Science		
TBD	Poultry Science (1/2 Credit)		
410004	Veterinary Science		
420078	CTE Lab in AFNR		
420077	Career Pathway Project in AFNR (Must successfully complete any two courses in the AFNR Cluster as a prerequisite to this course)		

Career Pathway Program	Plant Science Program Pathway (Must teach three courses from this program list within two years)		
	This program is designed to provide students with an understanding of the greenhouse, horticulture and nursery/landscape industries.		
Code Number	Career Pathway Program Courses	Career Readiness Indicator (CRI)	Workforce Careers
420101	Fundamentals of Agriscience	<ul style="list-style-type: none"> • Landscape Management Technician • Urban Forestry Technician • Setting of Landscape Plants (SLP) Permit • Tree Surgery (TS) Permit • Landscape Design (LD) Permit • Landscape Design and Plant Materials Certification • Forestry Worker Certification • Turfgrass Management Certification • Specialty Crops • Integrated Pest Management Certification • MSSC – Certified Production Technician (CPT): Each module will count as a CRI. The CPT 4.0 program consists of five individual certificate assessments: <ol style="list-style-type: none"> 2. Safety 2. Quality Practices & Measurement 3. Manufacturing Processes & Production 4. Maintenance Awareness 	<ul style="list-style-type: none"> • Chemical Engineer • Soil Scientist • Pest Control Worker • Landscape Designer • Agronomy Sales • Golf Course Superintendent • Turfgrass Producer • Lab Technician • Florist • Florist Worker • Event Planner • Landscaping and Groundskeeping Workers • Forest and Conservation Workers • Pesticide Handlers, Sprayers, and Applicators, Vegetation • Conservation Scientists
420010	Fundamentals of Agriscience (1/2 Credit)		
TBD	Agricultural and Biosystems Engineering		
TBD	Agribiology		
TBD	Agricultural Industrial Maintenance		
420028	Dendrology		
420060	Floriculture and Floral Design		
TBD	Floriculture and Floral Design (1/2 Credit)		
TBD	Food Safety and Microbiology		
420020	Forestry		
420021	Forestry (1/2 Credit)		
TBD	Forestry Industrial Maintenance		
420054	Greenhouse and Nursery Production		
TBD	Greenhouse and Nursery Production (1/2 Credit)		
420051	Horticulture Science		
420052	Horticulture Science (1/2 Credit)		
420057	Landscape Design and Management		
420053	Plant Biotechnology		
420056	Turfgrass Management		
420022	Urban Forestry		
420078	CTE Lab in AFNR		
420077	Career Pathway Project in AFNR (Must successfully complete any two courses in the AFNR Cluster as a prerequisite to this course)		

Career Pathway Program	Environmental and Natural Resources Program Pathway (Must teach three courses from this program list within two years)		
	This program is designed to provide students with an understanding of the science and management of natural resources.		
Code Number	Career Pathway Program Courses	Career Readiness Indicator (CRI)	Workforce Careers
420101	Fundamentals of Agriscience	<ul style="list-style-type: none"> NCCER Core (module 6 is an elective and not required for CRI) Urban Forestry Technician Integrated Pest Management Certification Forestry Worker Certification Tree Surgery (TS) Permit MSSC – Certified Production Technician (CPT): Each module will count as a CRI. The CPT 4.0 program consists of five individual certificate assessments: <ol style="list-style-type: none"> Safety Quality Practices & Measurement Manufacturing Processes & Production Maintenance Awareness 	<ul style="list-style-type: none"> Forester Environmental Engineer Environmental Engineering Technicians Forest and Conservation Technicians Conservation Officer Lab Technician Hunters and Trappers Wildlife Biologist Soil Scientist Professional Fisherman Logger Recreation Worker Refuse and Recyclable Material Collectors Water and Wastewater Treatment Plant and System Operators Hazardous Materials Removal Workers Environmental Science and Protection Technicians, Including Health Environmental Science Teachers, Postsecondary
420010	Fundamentals of Agriscience (1/2 Credit)		
TBD	Agricultural and Biosystems Engineering		
TBD	Agricultural Industrial Maintenance		
420028	Dendrology		
420026	Environmental Management		
420024	Fish and Wildlife Management		
420025	Fish and Wildlife Management (1/2 Credit)		
420020	Forestry		
420021	Forestry (1/2 Credit)		
TBD	Forestry Industrial Maintenance		
420022	Urban Forestry		
420029	Wildland Firefighting and Controlled Fire		
420078	CTE Lab in AFNR		
420077	Career Pathway Project in AFNR (Must successfully complete any two courses in the AFNR Cluster as a prerequisite to this course)		

Career Pathway Program	Industrial Agriculture Program Pathway (Must teach three courses from this program list within two years)		
	This program is designed to provide students with a general understanding of agricultural power equipment and modern construction and building practices along with a basic understanding of metal fabrication and welding.		
Code Number	Career Pathway Program Courses	Career Readiness Indicator (CRI)	Workforce Careers
420101	Fundamentals of Agriscience	<ul style="list-style-type: none"> NCCER Core (module 6 is an elective and not required for CRI) NCCER Carpentry Level 1 NCCER Welding Level 1 Construction and Skilled Trade Assessment (CAST) MSSC – Certified Production Technician (CPT): Each module will count as a CRI. The CPT 4.0 program consists of five individual certificate assessments: <ol style="list-style-type: none"> Safety Quality Practices & Measurement Manufacturing Processes & Production Maintenance Awareness Briggs and Stratton Technician (Two of the following areas required) <ol style="list-style-type: none"> Theory of Operation Carburetors and Fuel Systems Governors Compression Ignition Systems 	<ul style="list-style-type: none"> Construction Laborer Agricultural Contractor Pipe Layer Welder Electrician Plumber Industrial Maintenance Technician HVAC Technician Agricultural Engineer Construction Manager Mechanical Drafter Automotive Service Technicians and Mechanics Farm Equipment Mechanics and Service Technicians Mobile Heavy Equipment Mechanics, Except Engines First-Line Supervisors of Mechanics, Installers, and Repairers Tire Repairers and Changers
420010	Fundamentals of Agriscience (1/2 Credit)		
TBD	Agricultural and Biosystems Engineering		
410001	Agricultural Engines		
420011	Agricultural Engines (1/2 Credit)		
TBD	Agricultural Industrial Maintenance		
420012	Agricultural Welding 1		
420013	Agricultural Welding 1 (1/2 Credit)		
420014	Agricultural Welding 2		
410009	Introduction to Agricultural Wiring		
410008	Construction Finishing and Interior Systems		
410007	Construction Framing		
410006	Construction Site Prep and Foundations		
TBD	Forestry Industrial Maintenance		
TBD	Introduction to Agricultural Construction		
TBD	Poultry Industrial Maintenance		
410022	Residential and Commercial Power Equipment		
420078	CTE Lab in AFNR		
420077	Career Pathway Project in AFNR (Must successfully complete any two courses in the AFNR Cluster as a prerequisite to this course)		

Career Pathway Program	Middle School Program Pathway (Must teach three courses from this program list within two years)		
	This program is designed to provide students with a general understanding of agriculture, allowing for career exploration and foundational skill attainment within the agriculture, food, and natural resources cluster.		
Code Number	Career Pathway Program Courses	Career Readiness Indicator (CRI)	Workforce Careers
TBD	Orientation to Agriscience (6 th Grade) (140 Instructional Hour Course)	N/A	Middle School
TBD	Orientation to Agriscience (6 th Grade) (70 Instructional Hour Course)		
TBD	Orientation to Agriscience (6 th Grade) (35 Instructional Hour Course)		
420006	Agriscience Exploration (7 th Grade) (140 Instructional Hour Course)		
420005	Agriscience Exploration (7 th Grade) (70 Instructional Hour Course)		
420004	Agriscience Exploration (7 th Grade) (35 Instructional Hour Course)		
420008	PreAgriscience (8 th Grade) (140 Instructional Hour Course)		
420007	PreAgriscience (8 th Grade) (70 Instructional Hour Course)		
TBD	PreAgriscience (8 th Grade) (35 Instructional Hour Course)		
420101	Fundamentals of Agriscience (Recommended 9 th Grade)		
420010	Fundamentals of Agriscience (Recommended 9 th Grade) (1/2 Credit)		

Subject and Personnel Codes
Agriculture, Food and Natural Resources
and Agriscience Middle School Program

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Agriculture, Food and Natural Resources Cluster Courses (Grades 9-12)			
Code Number	Course Name	Code Number	Course Name
420103	Advanced Agriscience	TBD	Food Safety and Microbiology
TBD	Agribiology	420020	Forestry
410001	Agricultural Engines	420021	Forestry (1/2 Credit)
420011	Agricultural Engines (1/2 Credit)	TBD	Forestry Industrial Maintenance
TBD	Agricultural Industrial Maintenance	420101	Fundamentals of Agriscience
420012	Agricultural Welding Processes 1	420010	Fundamentals of Agriscience (1/2 Credit)
420013	Agricultural Welding Process 1 (1/2 Credit)	420054	Greenhouse and Nursery Production
420014	Agricultural Welding Processes 2	TBD	Greenhouse and Nursey Production (1/2 Credit)
TBD	Agriculture and Bio systems Engineering	420051	Horticultural Science
420071	Agriculture Communications and Technology	420052	Horticultural Science (1/2 Credit)
420072	Agriculture Marketing and Management	420102	Intermediate Agriscience
420104	Applied Agriscience	TBD	Introduction to Agricultural Construction
420037	Aquaculture Science	410009	Introduction to Agricultural Wiring
420038	Aquatic Biology	420030	Introduction to Animal and Dairy Science
420077	Career Pathway Project in Agriculture, Food, and Natural Resources	420031	Introduction to Animal and Dairy Science (1/2 Credit)
410008	Construction Finishing and Interior Systems	410003	Introduction to Veterinary Science
410007	Construction Framing	420057	Landscape Design and Management
410006	Construction Site Prep and Foundations	420053	Plant Biotechnology
420078	CTE Lab in Agriculture, Food and Natural Resources (AFNR)	TBD	Poultry Industrial Maintenance
420028	Dendrology	420033	Poultry Science
420026	Environmental Management	TBD	Poultry Science (1/2 Credit)
420034	Equine Science	410022	Residential and Commercial Power Equipment
TBD	Equine Science (1/2 Credit)	420056	Turfgrass Management
420024	Fish and Wildlife Management	420022	Urban Forestry
420025	Fish and Wildlife Management (1/2 Credit)	410004	Veterinary Science
420060	Floriculture and Floral Design	420029	Wildland Firefighting and Controlled Fire
TBD	Floriculture and Floral Design (1/2 Credit)		
MIDDLE SCHOOL PROGRAM COURSES			
TBD	Orientation to Agriscience (6 th Grade) (140 Instructional Hour Course)	420004	Agriscience Exploration (7 th Grade) (35 Instructional Hour Course)
TBD	Orientation to Agriscience (6 th Grade) (70 Instructional Hour Course)	420008	PreAgriscience (8 th Grade) (140 Instructional Hour Course)
TBD	Orientation to Agriscience (6 th Grade) (35 Instructional Hour Course)	420007	PreAgriscience (8 th Grade) (70 Instructional Hour Course)
420006	Agriscience Exploration (7 th Grade) (140 Instructional Hour Course)	TBD	PreAgriscience (8 th Grade) (35 Instructional Hour Course)
420005	Agriscience Exploration (7 th Grade) (70 Instructional Hour Course)		

Note: The course of study with content standards are located on the agriscience program page:

<https://alabamaffa.org/wp-content/uploads/2020/04/Final-2020-AFNR-COS.pdf>