ARKANSAS DEPARTMENT OF EDUCATION
DIVISION OF CAREER AND TECHNICAL EDUCATION
PROGRAM OPERATIONAL GUIDE
2020-21

Johnny Key, Secretary
Dr. Angela Kremers, Director

2020-21 ARKANSAS STANDARDS OF ACCREDITATION
DIVISION OF CAREER AND TECHNICAL EDUCATION REQUIREMENTS

ADE Rules Governing the Standards for Accreditation of Arkansas Public Schools and School Districts

1-A.1.2 For Grades 5-8, all students shall receive instruction annually in each of the following content areas (S/P):
1-A.1.2.1 English Language Arts;
1-A.1.2.2 Mathematics;
1-A.1.2.3 Science;
1-A.1.2.4 Social Studies;
1-A.1.2.5 Physical Education;
1-A.1.2.6 Fine Arts;
1-A.1.2.7 Health and Safety; and
1-A.1.2.8 Career and Technical Education.

Note: To comply with State Standard 1-A.1.2.8, the Division of Career and Technical Education defines the foundation courses required for all Career and Technical Education (CTE) program for 2020-2021 school year are:

Courses 399050 Keyboarding 7-8 or KeyCode 399320 **and** 399280 Career Development shall be instructed in grades 7 or 8 annually. If a district wishes to offer Keyboarding at a grade level lower than grade 7, approval must be sought from Division of Career and Technical Education prior to implementation. **A request should be submitted through ADE Course Approval System in addition to the Program Coordinator of the Business and Marketing Education office.**

If a school currently has an approved transition plan in place which allows Keyboarding to be taught in a grade lower than 7, Division of Career and Technical Education will honor the provisions of the approved plan until such time as the school requests the plan be rescinded.
1-A.1.3 For Grades 9-12, the following content areas shall be offered annually for a total of 38 units, except as otherwise allowed by law and these rules (S/P):
1-A.1.3.1 English Language Arts - 6 units;
1-A.1.3.2 Science - 5 units;
1-A.1.3.3 Mathematics - 6 units;
1-A.1.3.4 Computer Science - 1 unit;
1-A.1.3.5 Foreign Languages - 2 units of the same language;
1-A.1.3.6 Fine Arts - 3 ½ units;
1-A.1.3.7 Social Studies - 4 units;
1-A.1.3.8 Health and Safety Education and Physical Education - 1 ½ units; and
1-A.1.3.9 Career and Technical Education - 9 units of sequenced career and technical education courses representing three (3) occupational areas.

Note: To comply with State Standard 1-A.1.3.9, schools must:
Offer 1 program of study from 3 different Occupational Areas annually. Each Occupational Area defines the required entry level (core) course for each program of study. Core courses must be offered annually.

STATEMENT OF ASSURANCE

All career and technical education opportunities are offered without regard to race, color, national origin, sex, handicap, or age. The following civil rights laws protect individuals from discrimination in programs or activities receiving federal financial assistance:

- Title IV of the Civil Rights Act of 1964
- Title IX of the Education Amendments of 1972
- Section 504 of the Rehabilitation Act of 1973
- Age Discrimination Act of 1975

For Additional Information: https://www2.ed.gov/about/offices/list/ocr/reports-resources.html

PROGRAM APPROVAL

Requires completion of an approved program of study that leads to a recognized postsecondary credential, offering a sequence of CTE courses sufficient in size, scope, and quality to comprise a CTE program, offering work-based learning opportunities to students, leadership development such as through a CTE student organization, and the integration applied academics.

Programs of study are reviewed annually. Programs granted approval status shall:

1. Follow all policies and procedures;
2. Remove all critical elements identified in tiered support review(s); and
3. Follow all required program guidelines.

Only career and technical courses approved by DCTE are eligible for Perkins funding and graduation credit. For information on the Standards for Accreditation at https://adedata.arkansas.gov/sfa.

FULLY APPROVED PROGRAMS	
If a program received full approval during the previous academic year (AY) and one of the following actions applied the following year, then the district will receive the program status indicated:	
ACTION	PROGRAM STATUS
Critical Elements, including Safety Violations and Office of Civil Rights Violations, received from previous Tiered Support Activities (formerly Technical Assistance Visits)	Conditional Approval
No CTSO active roster	Conditional Approval
No program of study	Conditional Approval
No required foundation courses (reviewed by appropriate program area)	Conditional Approval
Meets all Division of Career and Technical Education policies and standards	**FULL APPROVAL**

CONDITIONALLY APPROVED PROGRAMS	
If a program was conditionally approved during the previous academic year (AY) and one of the following actions applies the following year, then the district will receive the program status indicated:	
ACTION	STATUS TO RECEIVE
Problems are corrected	**FULL APPROVAL**
Problems not corrected	Disapproval (see Accountability below)
Critical Elements, including Safety Violations and Office of Civil Rights Violations, received from previous Tiered Support Activities (formerly Technical Assistance Visits)	Disapproval (see Accountability below)

TIERED SUPPORT (Formerly TA Visit or Onsite Compliance Review)

The structure of technical assistance site visits is shifting from a compliance-enforced fixed 5-year rotation of site visits to an annual, ongoing customer-service focused, tiered support model. Although the process is in transition in 2020-21, adherence to existing requirements and documentation is expected until the new process is in place.

MINIMUM FACILITES REQUIREMENTS

Facility requirements must meet Arkansas Department of Education guidelines http://arkansasfacilities.arkansas.gov/public/userfiles/documents/Facilities_Manual_20162017/FM_Career_Education.pdf. Equipment requirements may be obtained from the appropriate program office and shall be met within the specified time for program approval.

SAFETY

Space and special equipment for CTE labs are varied and unique. Safety should be of the utmost consideration at all times in planning a facility and locating equipment. Sufficient electrical power should be included to support major pieces of equipment in the lab, including a sufficient number of electrical outlets. OSHA standards shall be followed where applicable.

A student wash up area and proper exhaust and filtration of harmful fumes/dust shall be provided according to the facilities requirements document: http://arkansasfacilities.arkansas.gov/public/userfiles/documents/Facilities_Manual_20162017/FM_Career_Education.p df. The laboratory shall be zoned and color-coded identifying specific work areas and pedestrian walkways. Large open areas for instructional activities shall be provided.

Caution must be exercised and enrollment must be limited so that an overcrowded situation does not occur. For the specifications for the lab areas, please see the Arkansas Facilities website linked in the Facilities section above.

MINIMUM START-UP EQUIPMENT REQUIREMENTS

Each Career and Technical Education (CTE) Occupational Program Area issues minimum equipment lists annually. The equipment lists are considered the *minimum* equipment necessary for students to master the program area standards established by the Division of Career and Technical Education. The current version of equipment lists applies to new programs being implemented during the school year in which the equipment lists are issued. Equipment lists may be located at DCTE Occupational Areas on the Division's Occupational Areas web page.

FOUNDATION COURSES FOR ALL PROGRAMS OF STUDY

399050   Keyboarding
1 Semester   Grade Levels: 7-8 (NO CREDIT)
Keyboarding is a one-semester course designed to help students develop speed and accuracy by learning the touch operation of alphanumeric/keyboard characters. Emphasis is placed on the following: mastery of the keyboard with desirable keyboarding techniques; development of speed and accuracy; basic problem-solving applications of centering and arranging reports, letters, and tables; proofreading; formatting; and proper care of the equipment. Keyboarding is a foundation for developing entry-level skills for business careers.

399320   KeyCode
1 Semester   Grade Levels: 7-8 (NO CREDIT)
KeyCode is a one-semester course designed to cover the state keyboarding and computer science coding block standards. Emphasis is placed on the following: understanding the importance of Career and Technical Student Organizations (CTSO), soft skill development, operation and management of classroom equipment, touch typing method, simple document formatting, and the computer science coding block. A minimum of 5 weeks shall be dedicated to students using keyboarding skills as they relate to formulating algorithms as well as create, analyze, test and debug computer programs in order to solve real-world problems. A text based programming language is required to accomplish these tasks.

399280   Career Development
1 Semester   Grade Levels: 7 or 8 (8th grade recommended) (NO CREDIT)
This CTE foundation course is a one or two semester class for grades 7-8 designed to teach career development through research and understanding of self and the world of work for college and career readiness. Career research and decision-making with education and training plans for exploration and development will be core standards. Students will be knowledgeable of career options, and the personal skills, aptitudes, and employer expectations of future careers of choice. Students will identify personal traits and characteristics for a better understanding of self in their pursuit of finding a meaningful, fulfilling and rewarding career. Through better recognition and understanding of personal interests, values, aptitudes and abilities students can assess how they relate to the world of work in order to acquire the skills necessary for appropriate placement in the workforce. In addition, students will demonstrate the use of technology to gather information about careers and demonstrate an understanding of the ways in which work, family, and leisure roles are interrelated. Students shall develop a career focus with viable expectations for success based upon careful research, consistent planning and employment preparation.

Operational Guide for
Agricultural Science and Technology Education

CAREER CLUSTER: AGRICULTURE, FOOD, & NATURAL RESOURCES	
PATHWAY	**PROGRAM OF STUDY**
Agribusiness Systems	Agribusiness Systems
Agricultural Power, Structural, & Technical Systems	Agricultural Power, Structural, & Technical Systems
Animal Systems	Animal Systems
Food Products & Processing Systems	Food Products & Processing Systems
Natural Resources/Environmental Service Systems	Natural Resources/Environmental Service Systems
Plant Systems	Plant Systems

ProgramDescription

Agricultural science and technology education is an organized educational program designed to provide career exploration and technical preparation for students who are preparing for career success in the Agriculture, Food, and Natural Resources Career Cluster. The knowledge and performance skills required for successful achievements and/or advancement in agricultural occupations constitute the central focus of the program. This program seeks to broaden traditional agricultural education to include agricultural literacy, reinforcement of applied instruction, agricultural business and industry needs, and increase preparation for further education.

In order to provide students with a well-rounded education for a future in agriculture, each program shall offer at least two programs of study.

Career and Technical Student Organization (CTSO)

The career and technical student organization (CTSO), FFA, shall be an integral part of the agriculture education instructional program and shall follow the applicable guidelines, goals, objectives, and participate in activities of the state and National FFA Organization.

All students enrolled are encouraged to become members of the FFA and take advantage of the leadership, citizenship, and personal development training and experience offered through participation in the FFA program. Each approved program of Agricultural Education shall have an active FFA Chapter that provides leadership development opportunities for all its members.

Agricultural Education teachers shall serve as FFA Chapter Advisors. In multiple-teacher departments, each teacher shall share the FFA Chapter responsibilities.

For more information about the Arkansas FFA Association, go to www.arkansasffa.org. Information about the National FFA Organization can be accessed at www.ffa.org.

AGRICULTURE PREREQUISITES	
COURSES	**PREREQUISITE COURSE(S)**
All courses/pathways (except Survey of Agricultural Systems and Intro to World Ag)	Survey of Agricultural Systems or CASE: AFNR

Agriculture Middle School Course:

Course Code	DCTE Middle School Electives	Credit	7th	8th	9th	10th	11th	12th
399030	Intro to World Agriculture Science	0	X	X				

This course may be taken in both 7th and 8th grades, but must receive prior approval from the DCTE Agricultural Science and Technology Office

PATHWAY		PROGRAM OF STUDY						
Agribusiness Systems		Agribusiness Systems						
Course Code	Level 1	Credit	7th	8th	9th	10th	11th	12th
491150	Survey of Agricultural Systems	1			X	X	X	X
Course Code	Level 2	Credit	7th	8th	9th	10th	11th	12th
491030	Agribusiness Management	1				X	X	X
Course Code	Level 3	Credit	7th	8th	9th	10th	11th	12th
491300	Advanced Leadership & Communications	1					X	X
491180	Animal Science	1				X	X	X
491160	CASE Animal Science	1				X	X	X
491390	Agricultural Mechanics	1				X	X	X
491310	Natural Resources Management	1				X	X	X
491470	CASE Natural Resources and Ecology	1				X	X	X
491340	Plant Science	1				X	X	X
491170	CASE Plant Science	1				X	X	X
491370	Ag Ed Capstone	1					X	X
490200	Youth Apprenticeship: AG AFNR	1					X	X
490600	Career Practicum: AG AFNR	1					X	X
590140	Razorback AgCademy: Foundations of Ag Education	1					X	X

PATHWAY		PROGRAM OF STUDY						
Agricultural Power, Structural, & Technical Systems		Agricultural Power, Structural, & Technical Systems						
Course Code	Level 1	Credit	7th	8th	9th	10th	11th	12th
491150	Survey of Agricultural Systems	1			X	X	X	X
Course Code	Level 2	Credit	7th	8th	9th	10th	11th	12th
491390	Agricultural Mechanics	1				X	X	X
Course Code	Level 3	Credit	7th	8th	9th	10th	11th	12th
490810	Advanced Agricultural Mechanics	1					X	X
491380	Agricultural Metals	1					X	X
491410	Agricultural Structures	1					X	X
491630	CASE Ag. Power & Technology	1					X	X
491620	Forestry Equipment Operations	1					X	X
491370	Ag Ed Capstone	1					X	X
490200	Youth Apprenticeship: AG AFNR	1					X	X
490600	Career Practicum: AG AFNR	1					X	X
590180	Razorback AgCademy: Foundations of Ag Systems	1					X	X

PATHWAY		PROGRAM OF STUDY						
Animal Systems		Animal Systems						
Course Code	Level 1	Credit	7th	8th	9th	10th	11th	12th
491150	Survey of Agricultural Systems	1			X	X	X	X
Course Code	Level 2	Credit	7th	8th	9th	10th	11th	12th
491180	Animal Science	1				X	X	X
(OR)								
491160	CASE Animal Science	1				X	X	X
Course Code	Level 3	Credit	7th	8th	9th	10th	11th	12th
491010	Advanced Animal Science	1					X	X
491460	Veterinary Science	1					X	X
491440	Poultry Science	1					X	X
491490	CASE Biotechnology	1					X	X
491370	Ag Ed Capstone	1					X	X
490200	Youth Apprenticeship: AG AFNR	1					X	X
490600	Career Practicum: AG AFNR	1					X	X
590150	Razorback AgCademy: Foundations of Animal Science	1					X	X

PATHWAY		PROGRAM OF STUDY						
Food Products & Processing Systems		Food Products & Processing Systems						
Course Code	Level 1	Credit	7th	8th	9th	10th	11th	12th
491150	Survey of Agricultural Systems	1			X	X	X	X
Course Code	Level 2	Credit	7th	8th	9th	10th	11th	12th
491100	Food Products & Processing I	1				X	X	X
Course Code	Level 3	Credit	7th	8th	9th	10th	11th	12th
491110	Food Products & Processing II	1					X	X
490200	Youth Apprenticeship: AG AFNR	1					X	X
490600	Career Practicum: AG AFNR	1					X	X

PATHWAY		PROGRAM OF STUDY						
Natural Resources/Environmental Service Systems		Natural Resources/Environmental Service Systems						
Course Code	Level 1	Credit	7th	8th	9th	10th	11th	12th
491150	Survey of Agricultural Systems	1			X	X	X	X
Course Code	Level 2	Credit	7th	8th	9th	10th	11th	12th
491310	Natural Resources Management	1				X	X	X
(OR)								
491470	CASE Natural Resources	1				X	X	X
Course Code	Level 3	Credit	7th	8th	9th	10th	11th	12th
491260	Forestry & Wildlife Ecosystems	1					X	X
491370	Ag Ed Capstone	1					X	X
490200	Youth Apprenticeship: AG AFNR	1					X	X
490600	Career Practicum: AG AFNR	1					X	X

PATHWAY		PROGRAM OF STUDY						
Plant Systems		Plant Systems						
Course Code	Level 1	Credit	7th	8th	9th	10th	11th	12th
491150	Survey of Agricultural Systems	1			X	X	X	X
Course Code	Level 2	Credit	7th	8th	9th	10th	11th	12th
491340	Plant Science	1				X	X	X
(OR)								
491170	CASE Plant Science	1				X	X	X
Course Code	Level 3	Credit	7th	8th	9th	10th	11th	12th
490800	Advanced Plant Science	1					X	X
491270	Greenhouse Management	1					X	X
491490	CASE: Biotechnology	1					X	X
491370	Ag Ed Capstone	1					X	X
490200	Youth Apprenticeship: AG AFNR	1					X	X
490600	Career Practicum: AG AFNR	1					X	X

Courses Listed Alphabetically

CLUSTER: AGRICULTURE, FOOD, & NATURAL RESOURCES (all pathways)

Middle School Course

399030   Intro to World Agriculture
Science Credit: 0   Grade Levels: 7-8
This is a foundation course for agriculture courses. Basic agriculture concepts are introduced, and students explore careers in the agriculture industry. Students will also be introduced to the FFA, leadership, and Supervised Agricultural Experiences. **(This course may be taken in both 7th and 8th grades, but must receive prior approval from the DCTE Agricultural Science and Technology Office)**

High School Courses

490810   Advanced Agricultural Mechanics
Credit: 1   Grade Levels: 11-12
This course covers agricultural technology terms, careers, systems, features and troubleshooting. They will develop industry partnerships to meet specific needs in agricultural settings with skills including agricultural power systems, small engine technology, agricultural electricity and CNC technology

491010 Advanced Animal
Science Credit: 1 Grade
Levels: 11-12
This course is designed at the local level for specialized instruction as determined by the local advisory committee and administration in a specific area of animal science. Pre-requisites would be animal science.

491300   Advanced   Leadership&Communications
Credit: 1   Grade Levels: 11-12
Public speaking, parliamentary procedure, organization, delegation, oral communication, conflict resolution, business etiquette, and community service are major topics to assist students in development of their leadership skills for the future.

490800 Advanced Plant Science
Credit: 1   Grade Levels: 11-12
This course allows for an in-depth look at the Plant Science Industry while providing hands on laboratories and opportunities to participate in FFA and Supervised Agricultural Experiences.

491370   Ag. Ed Capstone
 Credit: 1   Grade Levels: 11-12
The Capstone course is an opportunity for students to continue gaining skills in a specific program of study at an advanced level. School districts may submit a request to the Agriculture Science and Technology office to offer this course along with a syllabus outline for what topics will be covered in the capstone course. Capstone courses should be rigorous, high level projects with direct industry connections and support.

491030   Agribusiness Management
 Credit: 1   Grade Levels: 10-12
This course provides students with a basis for making effective decisions, setting goals, assessing and solving problems, evaluating the management of resources, and gaining skills useful in everyday life. FFA and SAEs will be covered as well.

491390   Agricultural Mechanics
 Credit: 1   Grade Levels: 10-12
This course connects scientific principles with mechanical skills. This course will enhance the student's understanding of traditional areas of agriculture mechanics and will emphasize agricultural technology, including such topics as electricity, internal combustion engines, metal technology, construction, and the development, role, and scope of mechanical technology in agriculture.

491380   Agricultural Metals
 Credit: 1   Grade Levels: 11-12
This course covers safety, technical information, tool fitting, sheet metal, hot and cold metal work, as well as an introduction to oxy acetylene welding and cutting and arc welding. It will also cover cold metal, hot metal, fabrication concepts, reading and implementing blueprints as they relate to metal work, arc welding, gas welding, MIG welding, TIG welding, plasma cutting, and careers related to metal work. Safety practices and performance skills will be emphasized in each area.

491180   Animal Science
 Credit: 1   Grade Levels: 10-12
The course is structured to enable all students to have an overview of the Animal Industry. Topics covered in Animal Science include the Animal Industry, Animal Handling and Safety, Animal Anatomy/Physiology, and Animal Nutrition. Opportunities are provided for students to participate in FFA and supervised experience activities.

491410   Agricultural Structures
 Credit: 1   Grade Level: 10-12
 Students will be introduced to basic practices used in farm building and construction of facilities for the farm. A more in-depth look will be given to the technical areas of the agriculture structural industry. Topics will include FFA, SAEs, safety, planning, tools, basic construction, surveying, concrete and masonry structures, basic carpentry, plumbing, electricity, metal fabrication, and painting and finishing.

491630   Curriculum for Agricultural Science Education (CASE): Agricultural Power and Technology Credit: 1   Grade Levels: 11-12
This is a specialization course in the CASE Program of Study, preparing students for the wide array of career opportunities in agricultural engineering. Students are immersed in inquiry-based exercises that tie in the math and science of agricultural mechanics and engineering including shop safety, tool operation, materials selection & use, fabrication, energy & power, machines, machinery management, engineering and technology applications.
(Must have DCTE-approval prior to implementation)

491490   Curriculum for Agricultural Science Education (CASE): Biotechnology
 Credit: 1   Grade Levels: 11-12
This is a specialization course in the CASE Program of Study, provides students with experiences in industry appropriate applications of biotechnology related to plant and animal agriculture. Students will complete hands-on activities, projects, and problems designed to build content knowledge and technical skills in the field of biotechnology.
(**Must have DCTE-approval prior to implementation)**

491470   Curriculum for Agricultural Science Education (CASE): Natural Resources
 Credit: 1   Grade Levels: 10-12

This course is a foundation course within the CASE sequence of courses. The course provides students a variety of experiences that in the fields of natural resources and ecology.
<mark>**(Must have DCTE-approval prior to implementation)**</mark>

491160   Curriculum for Agricultural Science Education (CASE): Animal Science
Credit: 1   Grade Levels: 10-12
This is a foundation-level course designed to engage students in hands-on laboratories and activities to explore the

world of animal agriculture.

491170   Curriculum for Agricultural Science Education (CASE): Plant
Credit: 1   Grade Levels: 10-12

This is a foundation-level course that will teach students about the form and function of plant systems. Students are immersed in inquiry-based exercises filled with activities, projects, and problems to teach them plant concepts through laboratory and practical experiences. Student experiences will include the study of plant anatomy and physiology, classification, and the fundamentals of production and harvesting.

491100   Food Products and
Processing I Credit: 1   Grade Levels: 10-12

This course examines the food industry in production, manufacturing/processing, distribution, and marketing. It also explores careers, consumer consumption, food safety, global commodities, and food companies.

491110   Food Products and
Processing II Credit: 1   Grade Levels: 11-12

This course examines the food industry in production, manufacturing/processing, distribution, and marketing. It also explores careers, consumer consumption, food safety, global commodities, and food companies.

491260   Forestry & Wildlife
Ecosystems Credit: 1 Grade Levels: 11-12

This course provides an overview of the forestry and wildlife industry and its importance to the economy of the nation. Tree and wildlife identification, management practices, harvesting and marketing processes, and business applications are major topics. GPS and GIS are included.

491620   Forestry Equipment
Operations Credit: 1 Grade Levels: 11-12

The Forestry Equipment Operations course covers basic operations, safety, maintenance, service and technologies of forestry equipment. It also covers careers and opportunities in the forest industry.

491270   Greenhouse Management
Credit:1   Grade Levels: 10-12

This course covers greenhouse management practices, including structural considerations, plant propagation, pesticide use, and product marketing. The student will also receive ample hands-on practice.

491310   Natural Resources
Management Credit: 1   Grade Levels: 10-12

Students will explore natural resources (soil, water, air, forests, energy, minerals and metals, and wildlife) and develop the knowledge and skills to use them wisely. Other issues include outdoor recreation, careers, and the environment.

491340   Plant Science
Credit: 1 Grade Levels: 10-12

This course covers the relationship between plants and people, plant morphology and physiology, plant production, the environment, soil, and other related areas.

491440   Poultry Science
Credit: 1   Grade Levels: 11-12

This course focuses on the production and management of poultry and the production and handling of poultry products.

491150 Survey of Agricultural
Systems Credit: 1 Grade Levels: 9-12

This is a foundation course for all agriculture programs of study. Topics covered include general agriculture, FFA, leadership, record keeping, Supervised Agricultural Experiences (SAEs), animal science, plant science, soil science, and agricultural mechanics.

491460 Veterinary Science
Credit: 1 Grade Levels: 11-12

This course will provide the student with a sound platform to master the knowledge and skills necessary to become a veterinary assistant. It will also prepare the student to pursue a rewarding career as part of the professional veterinarian team. It will also equip the next generation of veterinarians and veterinarian assistants with the new technological tools that reinforce our industry's expectations. Finally, it provides academic knowledge, higher order reasoning and problem solving skills, work attitudes, general employability skills, technical skills and occupational skills.