

**ARKANSAS DEPARTMENT OF EDUCATION
DIVISION OF CAREER AND TECHNICAL EDUCATION
PROGRAM OPERATIONAL GUIDE**

2021-2022 SCHOOL YEAR

As of: September 3, 2021



Johnny Key, Secretary of Education

Ross White, Director

TABLE OF CONTENTS

Content	Page Number(s)
Staff Directory	2
DCTE Policies and Procedures	3
DCTE Perkins Manual	3
Standards for Accreditation	3
Occupational Areas	4
Safety Checklist	5
Career and Technical Student Organizations (CTSO)	6
Adaptive Equipment for CTE Students with Disabilities	7
Agriculture Science and Technology Education Guide	8-13
Business and Marketing Technology Education Guide	13-21
Family and Consumer Science Education Guide	22-27
Science, Technology, Engineering, and Math (STEM) Guide	28-38
Trade and Industry Education Guide	39-56
Career Readiness/ Work Based Learning Guide	57-60
Jobs for Arkansas Graduates (JAG)	61-63

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POLICIES AND PROCEDURES

The Policies and procedures for the Arkansas Department of Education Division of Career and Technical Education can be found at the link below. All schools must operate their career and technical education programs in accordance with the policies and procedures linked below.

[DCTE Policies and Procedures](#)

Effective July 1, 2021

PERKINS MANUAL

The Perkins Manual for the Arkansas Department of Education Division of Career and Technical Education can be found at the link below. All sub recipients using federal Perkins dollars for their programs must adhere to the guidance provided in the perkins manual linked below.

[Perkins Manual](#)

Effective July 1, 2021

[STANDARDS FOR ACCREDITATION](#)

Each school year districts must meet Standards for Accreditation as outlined by the Arkansas Department of Education. Accreditation in regards to Career and Technical Education includes the following items:

Grades (5-8)

1-A.1.2.7 Career and Technical Education.

Courses 399050 Keyboarding **OR** 399320 KeyCode

AND

399280 Career Development

Grades (9-12)

1-A.1.3.9 Career and Technical Education -

9 units of sequenced career and technical education courses representing three (3) occupational areas.

OCCUPATIONAL AREAS

Agriculture Science & Technology Education	Business & Marketing Technology Education	Family & Consumer Sciences Education	STEM Education	Trade & Industry Education
Programs of Study				
Agribusiness Systems	Accounting	Clothing and Housing Design	Architectural CAD	A/V Tech and Film
Agricultural Power, Structural, and Technical Systems	Banking	Consumer Services	Automation and Robotics Technology	Advertising and Graphic Design
Animal Systems	Business Finance	Culinary Arts and Food Production, Management and Services	Biomedical Sciences-PLTW	Advanced Manufacturing
Food Products & Processing Systems	Digital Marketing	Human and Social Services	Cybersecurity	Automotive Collision Repair Technology
Natural Resources/Environmental Service Systems	Hospitality and Tourism	Nutrition Science and Dietetics	Engineering-CAD	Automotive Service Technology
Plant Systems	Management	Pre-Educator	Game Development	Aviation Technology
	Marketing Business Enterprise		Hardware Engineer/Network Architect	Commercial Photography
	Medical Office Management		Mobile Applications Development	Construction Technology
	Office Administration		Pre-Engineering	Criminal Justice
	Retail Management		Pre-Engineering-PLTW	Electronics
	Supply Chain and Logistics		Robotics	Heating, Ventilation, Air Conditioning, and Refrigeration (HVAC)
			Software Development/Engineering	Industrial Equipment Technologies
			Unmanned Aerial Systems (UAS)	JROTC (Air Force, Army, Marines, Navy)
			UpSkill Coding with Swift (ASU)	Major Appliance Technology
			Website Development	Medical Professions
				Medium/Heavy Truck Technology
				Power Equipment Technology
				Precision Machining Technology
				Radio Broadcasting
				Sports Medicine
				Television Production
				Welding

SAFETY CHECKLIST

Career and Technical Education programs are based on real world tasks and equipment usage that can sometimes be hazardous; therefore, student safety must be of the utmost concern.

Caution must be exercised and enrollment must be maintained within appropriate capacity. The specifications for classroom and laboratory safety for each program area are specified in the links below.

<u>Agriculture Science & Technology Education</u>
<u>Business & Marketing Technology Education</u>
<u>Family & Consumer Sciences Education</u>
<u>STEM Education</u>
<u>Trade & Industry Education</u>

Each of these documents can also be found on the DCTE website under occupational areas tab and then the specific occupational area.

CAREER AND TECHNICAL STUDENTS ORGANIZATIONS (CTSO)

CTSOs shall be an integral part of each CTE Program of Study. Local chapters of each CTSSO shall follow the guidelines, goals, and objectives of the respective State and National organization, and participate in state and national events of the organization.

Each district CTSSO must be chartered annually in conjunction with the national and state offices. Recruitment, retention, and participation will be evaluated by the Arkansas Department of Education-Division of Career and Technical Education for program approvals each year.

Agriculture Science & Technology Education	
<u>FFA</u> <u>Arkansas FFA</u>	
Business & Marketing Technology Education	
<u>DECA</u> <u>Arkansas DECA</u>	<u>FBLA</u> <u>Arkansas FBLA</u>
Family & Consumer Sciences Education	
<u>FCCLA</u> <u>Arkansas FCCLA</u>	<u>Educators Rising</u>
STEM Education	
<u>TSA</u> <u>Arkansas TSA</u>	<u>HOSA</u> <u>Arkansas HOSA</u>
Trade & Industry Education	
<u>HOSA</u> <u>Arkansas HOSA</u>	<u>SkillsUSA</u> <u>Arkansas SkillsUSA</u>

An active chapter is defined as the following according to the Arkansas Department of Education Division of Career and Technical Education:

- State and national dues/affiliations are paid prior to student competitions.
- Required reports have been submitted to the state association.

ADAPTIVE EQUIPMENT FOR CTE STUDENTS WITH DISABILITIES

Adaptive Equipment for Individuals with Disabilities Enrolled in Funded Vocational Education Programs can be obtained through Appropriation 681, by:

1. The requesting school must get a referral for the student from an assigned special education consultant to assist with ordering the adaptive equipment.
2. The superintendent or school principal in which the student is enrolled may then request services through contacting:
 - [Requests for Adaptive Equipment Applications](#) may be submitted by calling the Office of Special Populations at 501-682-5056.
3. The request for services must contain the following information:
 - Name of student
 - Age of student
 - Disability and need for adaptive equipment
 - Vocational program(s) and grade in which the student is enrolled
 - Equipment requested (if known)
 - Assistance in identifying appropriate equipment (if known)
 - Appropriate cost of equipment including shipping and taxes
 - The written evaluation and recommendation of the Special Education Consultant
4. The Office of Special Populations will send an electronic Application for Adaptive Equipment to be signed by the authorized agent. The information listed above will be required with the application. Upon approval, the district/school will be notified and a Memorandum of Understanding will be issued for the equipment purchase. (If the Office of Special Populations locates existing appropriate equipment, this equipment may be provided in lieu of funding.)
5. The Adaptive Equipment may be purchased through the Educational Cooperative or requesting school district. The Office of Special Populations will reimburse the Co-op or LEA upon receipt of the reimbursement report form. The reimbursement will not exceed the allocation approved for the equipment.
6. The adaptive equipment remains the property of the Office of Special Populations of the Division of Career and Technical Education, Arkansas Department of Education. It is subject to redistribution when no longer required by the student or similarly disabled student enrolled in funded vocational education programs within the school district or Cooperative.
7. Existing equipment may be transferred between school districts only upon written approval from the Office of Special Populations.

AGRICULTURE SCIENCE AND TECHNOLOGY EDUCATION

Program Description

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. Agricultural Education programs are expected to offer a minimum of two programs of study within the AFNR Career Cluster. The purpose of offering multiple programs of study is to adhere to the diversity of Agriculture across our State.

Middle School Courses:

Course Code	Course	Units of Credit	7 th	8 th	9 th	10 th	11 th	12 th
399030	Intro to World Agriculture Science	0	X	X				
This course may be taken in both 7 th and 8 th grades, but must receive prior approval from DCTE.								

Cluster: Agriculture, Food and Natural Resources

Pathway: Agribusiness Systems

Program of Study: Agribusiness Systems

Level One	Level Two	Level Three
Survey of Ag Systems (491150)	Agribusiness Management (491030)	<ol style="list-style-type: none"> 1. Advanced Ag Leadership & Communications (491300) 2. Animal Science (491180) 3. CASE Animal Science (491160) 4. Agricultural Mechanics (491390) 5. Natural Resources Management (491310) 6. CASE Natural Resources (491470) 7. Plant Science (491340) 8. CASE Plant Science (491170) 9. Ag Ed Capstone (491370) 10. Career Practicum: AG AFNR (490600) 11. Razorback AgCademy: Foundation of Ag Education (590140)

Industry Certifications:

1. Texas Tech University Personal Financial Literacy Certification (iCEV)
2. Microsoft Office Certifications
3. S/P2 Human Resources Certification
4. Southwest Professional Communications Certification (iCEV)
5. OSHA Employability Interview Skills
6. S/P2 Soft Skills Certification
7. OSHA 10 or OSHA 30

Cluster: Agriculture, Food and Natural Resources

Pathway: Agricultural Power, Structural & Technical Systems

Program of Study: Agricultural Power, Structural & Technical Systems

Level One	Level Two	Level Three
Survey of Ag Systems (491150)	Agricultural Mechanics (491390)	<ol style="list-style-type: none"> 1. Advanced Agricultural Mechanics (490810) 2. Agricultural Metals (491380) 3. Agricultural Structures (491410) 4. CASE Ag, Power & Technical (491630) 5. Forestry Equipment Operations (491620) 6. Ag Ed Capstone (491370) 7. Career Practicum: AG AFNR (490600) 8. Razorback AgCademy: Foundation of Ag Systems (590180)

Industry Certifications

1. OSHA 10 or OSHA 30
2. NCCER Core
1. ShopBot Certification
2. EETC Principles of Small Engine Technology Certification (iCEV)
3. S/P2 Welding Certification
4. S/P2 Construction Certification
5. NCCER Concrete Finishing
6. NCCER Construction Technology
7. NCCER Welding
8. NCCER Electrical
9. AWS Welding
10. Arkansas Pro Loggers Certifications

Cluster: Agriculture, Food and Natural Resources
Pathway: Animal Systems
Program of Study: Animal Systems

Level One	Level Two	Level Three
Survey of Ag Systems (491150)	Animal Science (491180) or CASE Animal Science (491160)	<ol style="list-style-type: none"> Advanced Animal Science (491010) Veterinary Science (491460) Poultry Science (491440) CASE Biotechnology (491490) Ag Ed Capstone (491370) Career Practicum: AG AFNR (490600) Razorback AgCademy: Intro to Animal Science (590150)
<p align="center">Industry Certifications</p> <ol style="list-style-type: none"> OSHA 10 or OSHA 30 YQCA Certification Elanco Fundamentals of Animal Science Certification (iCEV) BQA Certification Artificial Insemination Certification Texas A&M Veterinary Assistant Certification Elanco Veterinary Medical Applications Certification (iCEV) National Collegiate Livestock Coaches' Association Principles of Livestock Selection Certification (iCEV) National Horse Judging Team Coaches' Association Equine Management and Evaluation Certification (iCEV) American Meat Science Meat Evaluation Certification (iCEV) 		

Cluster: Agriculture, Food and Natural Resources
Pathway: Food Products & Processing Systems
Program of Study: Food Products & Processing Systems

Level One	Level Two	Level Three
Survey of Ag Systems (491150)	Food Products & Processing I (491100)	<ol style="list-style-type: none"> Food Products & Processing II (49110) Ag Ed Capstone (491370) Career Practicum: AG AFNR (490600)
<p align="center">Industry Certifications</p> <ol style="list-style-type: none"> American Meat Science Food Safety & Science Certification (iCEV) American Meat Science Meat Evaluation Certification (iCEV) OSHA 10 or OSHA 30 American Meat Science Culinary Meat Selection & Cookery Certification (iCEV) 		

Cluster: Agriculture, Food and Natural Resources
Pathway: Natural Resources/Environmental Service Systems
Program of Study: Natural Resources/Environmental Service Systems

Level One	Level Two	Level Three
Survey of Ag Systems (491150)	Natural Resources Management (491310) or CASE Natural Resources (491470)	<ol style="list-style-type: none"> Forestry & Wildlife Ecosystems (491260) Ag Ed Capstone (491370) Career Practicum: AG AFNR (490600)
<p align="center">Industry Certifications</p> <ol style="list-style-type: none"> Arkansas Hunters' Education Certification Arkansas Boaters' Education Certification OSHA 10 or OSHA 30 Ducks Unlimited Ecology Conservation & Management Certification (iCEV) 		

Cluster: Agriculture, Food and Natural Resources
Pathway: Plant Systems
Program of Study: Plant Systems

Level One	Level Two	Level Three
Survey of Ag Systems (491150)	Plant Science (491340) or CASE Plant Science (491170)	<ol style="list-style-type: none"> Advanced Plant Science (490800) Greenhouse Management (491270) CASE Biotechnology (491490) Ag Ed Capstone (491370) Career Practicum: AG AFNR (490600)
<p align="center">Industry Certifications</p> <ol style="list-style-type: none"> OSHA 10 or OSHA 30 Bayer Crop Science Plant Science Certification (iCEV) Benz School of Floral Design Principles of Floral Design Certification (iCEV) Arkansas Floral Student Certification Pesticide Applicator License 		

Course Descriptions (Alphabetically):

Middle School Courses

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 ARCareerEd Agricultural Science Education)**

High School Courses

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. Prerequisites would be animal science.

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.

491410 Agricultural Structural Systems

Credit: 1 Grade Levels: 11-12

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.

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.

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 and attend training prior to implementation)

491490 Curriculum for Agricultural Science Education (CASE): Animal and Plant 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 and attend training prior to implementation)**

491480 Curriculum for Agricultural Science Education (CASE): Food Science and Safety

Credit: 1 Grade Levels: 10-12

This is a specialization course in the CASE Program of Study. Students will complete hands-on activities, projects, and problems that simulate actual concepts and situations found in the food science and safety industry, allowing students to build content knowledge and technical skills. Students will investigate areas of food science including food safety, food chemistry, food processing, food product development, and marketing.

(Must have DCTE-approval and attend training prior to implementation)

491470 Curriculum for Agricultural Science Education (CASE): Natural Resources and Ecology

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.

(Must have DCTE-approval and attend training prior to implementation)

491160 Curriculum for Agricultural Science Education (CASE): Principles of Agricultural Science—Animal

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.

(Must have DCTE-approval and attend training prior to implementation)

491170 Curriculum for Agricultural Science Education (CASE): Principles of Agricultural Science—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.

(Must have DCTE-approval and attend training prior to implementation)

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.

(Must have DCTE-approval prior to implementation)

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.

(Must have DCTE-approval prior to implementation)

491120 Food Products and Processing Capstone

Credit: 1 Grade Levels: 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.

(Must have DCTE-approval prior to implementation)

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: 11-12

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.

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.

Advanced Ag Leadership & Communications

Credit: 1 Grade Levels: 11-12

This course will provide the student with a sound understanding of 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. Opportunities are provided for students to participate in FFA and supervised agricultural experience activities.

Advanced Agricultural Mechanics

Credit: 1 Grade Levels: 11-12

Students will cover 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.

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.

Advanced Plant Science

Credit: 1 Grade Levels: 11-12

Students completing this course of study will demonstrate competence in the application of principles and techniques for the planning, development, application and management of plant science systems in Agriculture, Food & Natural Resource settings.

Ag Education Capstone

Credit: 1 Grade Levels: 11-12

Business and Marketing Technology Education

Program Description

Business and Marketing Technology programs are designed to prepare individuals to:

- Perform managerial functions
- Make educated financial decisions
- Apply business and marketing principles in order to provide goods and services
- Utilize technology to communicate effectively

Middle Level Business and Marketing Technology Courses

Course Code	Course Name	Credit	4th	5th	6th	7th	8th
399230	Keyboarding 4 (Grade 4)	N/A	X				
355630	Keyboarding (Grade 5)	N/A		X			
366630	Keyboarding (Grade 6)	N/A			X		
399050	Keyboarding (Grades 7-8)	N/A				X	X
399320	Key Code	N/A				X	X
356880	Office Technology Skills	N/A		X	X		
356870	Technology Essentials	N/A		X	X		
388930	Introduction to Business & Marketing	N/A					X
399040	Exploring Business Applications	N/A				X	X

Cluster: Business, Management, and Administration

Pathway: Administrative Support

Program of Study: Office Administration

Level 1	Level 2	Level 3
Survey of Business (492120)	Management (492320)	<ul style="list-style-type: none"> • Accounting I (492100) • Dual Enrollment or Concurrent Credit Introduction to Management • Career Practicum-Bus: Management and Administration • Any <u>approved</u> concurrent credit contributing to specificity for this program of study **
Certifications: <ol style="list-style-type: none"> 1. Microsoft Office Specialist 2. Microsoft Office Specialist Master 3. Excel Expert 4. Southwest Airlines Communications 		

Elective courses, Business Communications, Advanced Database, and Advanced Spreadsheets, complement the program of study, but do not count toward concentrator status. Elective courses, Business Communications, Advanced Database, and Advanced Spreadsheets, complement the program of study, but do not count toward concentrator status.

Cluster: Business, Management, and Administration

Pathway: Administrative Support

Program of Study: Office Administration

Level 1	Level 2	Level 3
Survey of Business (492120)	Business Procedures (492380)	<ul style="list-style-type: none"> • Business Law I (492070) + Business Law II (492080) • Accounting I (492100) • Dual Enrollment or Concurrent Credit Introduction to Management • Career Practicum-Bus: Management and Administration • Any <u>approved</u> concurrent credit contributing to specificity for this program of study **
Certifications: <ol style="list-style-type: none"> 1. Microsoft Office Specialist 2. Microsoft Office Specialist Master 3. Excel Expert 4. Southwest Airlines Communications 		

**Elective courses, Business Communications, Advanced Database, and Advanced Spreadsheets, complement the program of study, but do not count toward concentrator status.

Cluster: Business, Management, and Administration
Pathway: Administrative Support
Program of Study: Medical Office Administration

Level 1	Level 2	Level 3
Survey of Business (492120)	Medical Office Administration (492690)	<ul style="list-style-type: none"> • Medical Coding and Billing (490840) • Accounting I (492100) • Business Law (492070) + Business Law II • Career Practicum- Bus: Management and Administration (490630) • Dual Enrollment or Concurrent Credit Legal Environment of Business • Dual Enrollment or Concurrent Credit 2301 Business Communications • Any <u>approved</u> concurrent credit contributing to specificity**
Certifications: <ol style="list-style-type: none"> 1. Microsoft Office Specialist 2. NRF Customer Service and Sales 3. Excel Expert 4. CPR 5. Master 6. Intuit QuickBooks 7. NHA MOS Medical Coding and Billing 		

Cluster: Marketing
Pathway: Marketing Management
Program of Study: Marketing Business Enterprise

Level 1	Level 2	Level 3
Survey of Business (492120)	Marketing Business Enterprise (492330)	<ul style="list-style-type: none"> • Advanced Business and Market Strategies (490850) • Small Business Operations (492700) • Marketing Management (492350) • Career Practicum- Bus: Marketing, Sales, and Service (490640) • Any <u>approved</u> concurrent credit contributing to specificity for this program of study**
Certifications: <ol style="list-style-type: none"> 1. Microsoft Office Specialist 2. Excel Expert 3. NRF Customer Service and Sales 4. Entrepreneurship and Small Business (ESB) 5. MOS Expert 		

Cluster: Marketing
Pathway: Marketing Research
Program of Study: Digital Marketing

Level 1	Level 2	Level 3
Survey of Business (492120)	Digital Marketing (492760)	<ul style="list-style-type: none"> • Markets and Analytics (492800) • Career Practicum-Bus: Marketing, Sales, and Service (490640) • Any approved concurrent credit contributing to specificity for this program of study
Certifications: <ol style="list-style-type: none"> 1. Microsoft Office Specialist 2. HootSuite 3. HubSpot 4. Buffer 5. Facebook Blueprint 6. Google Analytics 7. MOS Expert 		

Cluster: Marketing
Pathway: Merchandising
Program of Study: Retail Management

Level 1	Level 2	Level 3
Survey of Business (492120)	Retail Business (490820)	<ul style="list-style-type: none"> • Small Business Operations (492700) • Accounting I (492100) • Digital Marketing (492760) • Career Practicum-Bus: Marketing, Sales and Service (490640) • Any approved concurrent credit contributing to specificity for this program of study**
Certifications: <ol style="list-style-type: none"> 1. Microsoft Office Specialist 2. NRF Customer Service and Sales 3. NRF Retail Industry Fundamentals 4. NRF Business of Retail 5. Entrepreneurship and Small Business (ESB) 6. MOS Expert 7. HubSpot 		

Cluster: Finance
Pathway: Accounting
Program of Study: Accounting

Level 1	Level 2	Level 3
Survey of Business (492120)	Principles of Banking (492090)	<ul style="list-style-type: none"> • Accounting II (492100) • Advanced Banking (490860) • Career Practicum-Bus: Finance (490610) • Any approved concurrent credit contributing to specificity for this program of study**
Certifications: <ol style="list-style-type: none"> 1. Microsoft Office Specialist 2. Word Expert 3. Excel Expert 4. Intuit Quickbooks 5. ABA Principles of Banking 6. ABA Banking and Finance Operations 		

*Personal Finance is an elective course that supplements the Accounting Program of Study. It cannot count toward concentrator status, but will satisfy the requirements of Act 466 and Act 480.

Cluster: Finance
Pathway: Accounting
Program of Study: Banking

Level 1	Level 2	Level 3
Survey of Business (492120)	Accounting I (492100)	<ul style="list-style-type: none"> • Accounting II (491110) • Dual Enrollment or Concurrent Credit Principles of Accounting I • Career Practicum-Bus: Finance (490610) • Any approved concurrent credit contributing to specificity for this program of study**
Certifications: <ol style="list-style-type: none"> 1. Microsoft Office Specialist 2. Excel Expert 3. Intuit Quickbooks 		

Cluster: Finance
Pathway: Accounting
Program of Study: Business Finance

Level 1	Level 2	Level 3
Survey of Business (492120)	Financial Planning* (492290)	<ul style="list-style-type: none"> • Securities, Investments, Risk, and Insurance (492000) • Accounting I (492100) • Career Practicum-Bus: Finance (490610) • Any approved concurrent credit contributing to specificity for this program of study**
Certifications: <ol style="list-style-type: none"> 1. Microsoft Office Specialist 2. Wise 3. Excel Expert 4. EverFi – Personal Finance 5. Entrepreneurship and Small Business (ESB) 6. NRF Customer Service and Sales 		

Cluster: Hospitality and Tourism
Pathway: Travel and Tourism
Program of Study: Hospitality and Tourism

Level 1	Level 2	Level 3
Survey of Business (492120)	Tourism Industry Management (492260)	<ul style="list-style-type: none"> • Hospitality Administration (492250) • Arkansas Tourism Industry (492230) • Career Practicum-Bus: Hospitality and Tourism (490670) • Any approved concurrent credit contributing to specificity for this program of study
Certifications: <ol style="list-style-type: none"> 1. Microsoft Office Specialist 2. NRF Customer Service and Sales 3. Excel Expert 4. AHLEI Certified Guest Service Professional (CGSP) 5. AHLEI Certified Front Desk Representative (CFDR) 		

*Personal Finance is a suggested elective course that supplements the Hospitality and Tourism Program of Study. It cannot count toward concentrator status, but will satisfy the requirements of Act 466 and Act 480.

Cluster: Transportation, Distribution, and Logistics
Pathway: Logistics Planning and Management
Program of Study: Supply Chain and Logistics

Level 1	Level 2	Level 3
Survey of Business (492120)	Introduction to Supply Chain and Logistics (492770)	<ul style="list-style-type: none"> • Transportation and Distribution (490830) • Accounting I (492100) • Career Practicum- Bus: Transportation, Distribution and Logistics (490650) • Any approved concurrent credit contributing to specificity for this program of study**
Certifications: <ol style="list-style-type: none"> 1. Microsoft Office Specialist 2. Excel Expert 3. MOS Master 		

The following courses are supplemental courses and can be offered within Business and Marketing Programs of Study but do not count toward concentrator status:

1. Advanced Spreadsheets (492450)
2. Advanced Database (492140)
3. Business Communications (492060)
4. Personal Finance (491990)
5. Organizational Leadership I/II (492790)

*Satisfies requirements of Act 480 and 466

**Contact the DCTE Business and Marketing Program Coordinator, Sarah Shamburger, to seek approval for concurrent credit courses to be counted toward completion of a program of study.

MIDDLE LEVEL COURSES

399040 Exploring Business Applications

Credit: 0 Grade Levels: 7-8

Exploring Business Applications is a one-semester course with emphasis given to computer concepts and operations, programming and design, computer software, and the implications of technology in society and ethics. This course is designed to provide students with an understanding of the fundamental uses for computer applications and technology in business and careers.

388930 Introduction to Business & Marketing Semester

Credit: 0 Grade Level: 8

Introduction to Business is a one-semester course designed to highlight each of the Business and Marketing Technology career clusters and pathways for the Division of Career and Technical Education. Emphasis is placed on the following: Understanding the importance of Career and Technical Student Organizations (CTSO), Soft skill development, Career Clusters and pathways as offered at the high school level including, Business Management and Administration, Information Technology, Finance, Hospitality and Tourism, Transportation, Distribution and Logistics, and Marketing Sales and Services.

399230 Keyboarding 4 (grade 4)

Credit: 0 Grade Level: 4

This is a nine-week 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; and proper care of the equipment. Keyboarding is foundational for developing entry-level skills for business careers. It is recommended that this course be taken prior to the Office Technology Skills and Technology Essentials courses. **This course does not meet state standards.**

355630 Keyboarding 5/6 (grade 5/6)

Credit: 0 Grade Level: 5/6

This is a nine-week 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; and proper care of the equipment. Keyboarding is foundational for developing entry-level skills for business careers. It is recommended that this course be taken prior to the Office Technology Skills and Technology Essentials courses. **This course does not meet state standards.**

399050 Keyboarding (grades 7-8)

Credit: 0 Grade Levels: 7-8

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, and proper care of the equipment. Keyboarding is a foundation for developing entry-level skills for business careers.

399320 KeyCode

Credit: 0 Grade Levels: 7-8

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.

356880 Office Technology Skills

Credit: 0 Grade Levels: 5-6

This is a nine-week support course that will help students begin building a solid foundation of basic technology skills that will promote proper technology habits to prepare them for ongoing academic and career pursuits.

356870 Technology Essentials

Credit: 0 Grade Levels: 5-6

This nine-week course will help students develop foundational technology skills necessary for continued success in academic and career pursuits. Topics covered include foundational word processing and editing, presentation design and delivery, and foundational spreadsheet skills, as well as safe computing and online habits.

High School Courses

490860 Advanced Banking

Credit: 1 Grade Levels: 9-12

This two-semester course addresses all aspects of consumer and commercial lending as well as financial and insurance statements. Other topics addressed in this course include managing loan files, assessing risk in lending understanding issues of regulation and compliance, bankruptcy, credit reports, and appraisals.

490850 Advanced Business and Marketing Strategies

Credit: 1 Grade Levels: 9-12

This course encourages students to work in partnership with business and industry leaders in the community to analyze and solve real-world problems. Students completing projects in the course could benefit significantly from the use of resources and data from local businesses. Instructors are encouraged to leverage existing partnerships and to build on advisory committee relationships as they reach out to business owners or managers for authentic scenarios, materials, and other business information from which students could learn.

492140 Advanced Database

Credit: .5 Grade Levels: 9-12

Students will work with multiple table operations, forms and reports. Students will learn advanced database features to manipulate and present data through advanced queries, calculated controls, macros, switchboards, custom forms/reports, sub forms, sub reports, joins, relationships, and more. Students will explore techniques in sharing, integrating, analyzing and managing a relational database.

The prerequisite for this course is Survey of Business (492120).

492450 Advanced Spreadsheet Applications

Credit: .5 Grade Levels: 9-12

Advanced Spreadsheet is designed to provide students with in-depth coverage of higher level skills, including: creating and working with tables, pivot tables, pivot charts, managing multiple worksheets and workbooks, using advanced functions and filtering, developing an application, and working with financial tools. A basic review of creating and formatting a workbook, working with functions, and creating charts and graphics is used as an introduction into this course also.

492230 Arkansas Tourism Industry

Credit: .5 Grade Levels: 9-12

Arkansas Hospitality is a one-semester course designed to familiarize students with Arkansas careers in hospitality and the opportunities available to promote travel and tourism in the state. Emphasis will be on the food industry, transportation industry, lodging industry, and tourist attractions within the various geographical locations in the state.

492060 Business Communications

Credit: .5 Grade Levels: 9-12

Business Communications is a semester course that will explore concepts, theories, and skills that lead to communicating effectively and appropriately in a variety of workplace situations. This course will cover communications basics for verbal, nonverbal, and written communications, as well as application of advanced level communication skills, incorporating teamwork, collaboration, and technology.

492070 Business Law I

Credit: .5 Grade Levels: 9-12

Business Law I covers the history and evolution of our law, the fundamental elements of the American legal system, and its common law origins. The scope of the course will include: the application and operation of the legal system in the remedy of business disputes, the development and operation of the court system, regulatory law for business firms, consumer protection, and contract law.

492080 Business Law II

Credit: .5 Grade Levels: 9-12

Business Law II covers the standards of law that govern our business and personal affairs in today's marketplace. It is designed to help students better understand the business world in which they live, gain confidence in conducting business, and be better prepared to recognize legal problems in management of an enterprise. Topics will include: credit and bankruptcy, commercial paper, employment and agency, forms of business organization (proprietorships, partnerships, and corporations), real and personal property, bailments, and insurance.

492380 Business Procedures

Credit: 1 Grade Levels: 9-12

Business Procedures provides students with concepts and skills in technology, communication, human relations, financial and record management, and employability skills that can be applied in the management and administration of an office

492100 Computerized Accounting I

Credit: 1 Grade Levels: 9-12

Computerized Accounting I emphasizes on basic accounting principles as they relate to both manual and computerized financial systems. Instruction is on an integrated basis, using computers, spreadsheet software, and electronic calculators as the relationships and processes of manual computerized accounting are presented. Entry-level skills in the accounting occupations can be attained.

492110 Computerized Accounting II
Credit: 1 Grade Levels: 10-12 492110

Computerized Accounting II is designed to provide students with the knowledge, understanding, and skills necessary for college and career readiness. Departmental and corporate accounting systems are components of the course with emphasis given to computerized software and automated systems.

The prerequisite for this course is Computerized Accounting I (492100).

492760 Digital Marketing
Credit: 1 Grade Levels: 9-12

This is a two-semester project-based course that enhances technology skills, job search and employability skills along with communication skills. Students will create an online electronic career portfolio focused on an individual career path, create, digital marketing campaigns [including content marketing, social media, and viral marketing campaigns], participate in video conferencing, cloud-based collaboration, and learn and practice other workplace related communication technologies and channels. Students will apply verbal and nonverbal communication skills related to both spoken and written communications; technology will be used to enhance these skills. Productivity programs and apps will be used to teach time management, organization and collaboration skills, cloud storage and computing. Students will also create career-related documents according to professional layout and design principles, and will also learn the photo and video editing skills needed to create promotional and informational business communications and viral marketing campaigns.

492190 Fashion Merchandising
Credit: .5 Grade Levels: 9-12

Fashion Merchandising is designed to offer an overview of fashion and merchandising industry. It provides the foundation in preparing students for a wide range of careers available in the different levels of the fashion, merchandising and retail industry. Emphasis is given to historical development, marketing, customer service, retailing, fashion, merchandising, and design.

492290 *Financial Planning
Credit: 1.5 Grade Levels: 10-12

Financial Planning and Wealth Management introduces students to the basic concepts of economics and financial literacy then builds on those topics to provide a more in-depth study of wealth management and personal financial planning. Components of financial planning and strategies used in the accumulation and conservation of wealth will be the focus. Strategies for investing, tax, insurance, and retirement planning, as well as estate planning will be studied. In addition, basics of business financial planning will also be discussed, including the purpose and use of financial statements in making business decisions.

**Commissioner's Memo Number LS-18-049 dated 12/15/2017, this course will meet Act 480 requirements, will embed the Economics standards, and will also count as a CTE elective for Business and Marketing programs of study. Students completing this course will receive 1.5 credits (1 career focus and .5 economics). Read the full Commissioner's Memo at this [link](#).*

492250 Hospitality Administration
Credit: .5 Grade Levels: 9-12

Hospitality Administration is an in-depth study of the hospitality industry. Students will become familiar with careers in hospitality and the primary segments of the hospitality industry. The importance of personal presentation, communication skills, guest satisfaction, the ability to perform business math, along with marketing concepts will also be covered in this course. **The prerequisite for this course is Tourism Industry Management (492260).**

492770 Introduction to Supply Chain and Logistics
Credit: 1 Grade Levels: 9-12

Introduction to Supply Chain Management & Logistics is a year-long course that introduces students to the supply chain and logistics industry. The content emphasizes beginning knowledge key to the success of working in the supply chain & logistics industries. Students study and gain a basic understanding of logistics, transportation, operations, warehousing, supply chain technology, transportation systems, SCOR model, and customer service skills ultimately learning how to buy, make and deliver products. Students will have the opportunity to explore careers in the supply chain and logistics industry.

690050 Keyboarding (9-12)
Credit: 0 Grade Levels: 9-12

Keyboarding helps 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, and proper care of the equipment. Keyboarding is a foundation for developing entry-level skills for business careers. Only students who failed or did not take Keyboarding in the 7th or 8th grade are to be enrolled in this course. **This is a foundation course.**

492320 Management
Credit: 1 Grade Levels: 9-12

Management is designed to prepare students for managerial careers. Students will study the value of soft skills in the business environment. Other topics will include: the role of a manager, business organization and government regulations, information and communication systems and the use of technology, business finance principles, product/service development, production, marketing, distribution, pricing, and human resources management.

492330 Marketing Business Enterprise
Credit: 1 Grade Levels: 10-12

Marketing Business Enterprise is a one-year course designed to offer an overview of the American business enterprise system. A study of various forms of ownership, internal organization, management functions, and financing as they relate to business. The course content focuses on the aspects of marketing and managing a small business enterprise; risk management; the use of technology; legal, ethical, and social obligations of businesses; savings and investments; taxes and government.

492350 Marketing Management
Credit: 1 Grade Levels: 10-12

Marketing Management is designed to develop decision-making skills through the application of marketing and management principles. Competencies will be accomplished by utilizing various instructional methods, resources, and direct involvement with marketing businesses. The course will focus on organization, finance, risks, credit, technology, and social aspects. Although not mandatory, many students can benefit from the on-the-job training component for this course. ***The prerequisite for this course is Marketing (492330).***

492800 Markets and Analytics
Credit: 1 Grade Levels: 10-12

This two-semester course extends training in managing digital marketing content and data to maintain brand integrity, customer satisfaction, and profitability of a business. Students will learn strategies for creating effective digital marketing content directed toward specific target markets and for specific online platforms. Students will also explore and practice various methods for gathering and analyzing data in order to maximize return on investment for digital and content marketing efforts. ***The prerequisite for this course is Digital Marketing (492760).***

490840 Medical Coding and Billing
Credit: 1 Grade Levels: 11-12

Students will be introduced to healthcare systems and the electronic medical records as it pertains to the field of medical coding and billing. Students will be exposed to the medical terminology used to describe human anatomy and physiology. Students will also be introduced to the field of health informatics.

492690 Medical Office Management
Credit: 1 Grade Levels: 9-12

Medical Office Management is designed to teach students concepts and skills that will be applied in the management and administration of a medical office. The course will focus on careers in the medical office environment, office management skills, patient billing and collections, patient/client service skills, ethics, medical terminology, and health information management.

492780 Organizational Leadership I
Credit: .5 Grade Levels: 10-12

Organizational Leadership I offers a foundation for understanding and evaluating organizational leadership. It is designed to assist student leaders in developing a framework for understanding and becoming effective leaders. This course examines topics such as professionalism, organizational behavior, trends and issues, creativity, innovation, leadership, and teamwork.

492790 Organizational Leadership II
Credit: .5 Grade Levels: 10-12

Organizational Leadership II offers a fundamental understanding and evaluation of organizational leadership. It is designed to assist student leaders and aspiring student leaders in developing a mindset of leadership with the skills and knowledge necessary to become an effective organizational leader. This course examines topics such as traits and motives of leaders, influence tactics, conflict resolution, leadership development, and succession planning.

491990 Personal Finance
Credit: .5 Grade Levels: 9-12

The purpose of this course is to teach students the essential skills for continued financial success throughout life, helping them to be responsible and contributing citizens and members of society. This is a one-semester course designed to increase personal finance knowledge and skills and prepare students to successfully manage financial resources. This course also focuses on the individual's role and financial responsibilities as a student, citizen, consumer, and active participant in the business world. Emphasis is also placed on activities and competitions within career and technical student organizations (i.e., FBLA, FCCLA, and DECA). This course is aligned with and will satisfy the requirements set forth in Arkansas Act 480

492090 Principles of Banking
Credit: 1 Grade Levels: 9-12

Banking is designed to educate students with real-world banking and financial situations through a partnership with a local financial institution. Completion of this course provides students with a foundation for continued education in finance and business administration, specializing in occupations that support banking and financial institutions. The course aims to provide the student with an introduction to the role of money, financial markets, financial institutions, and monetary policy in the economy, thus providing a solid foundation for further study or employment in the financial services industry.

490820 Retail Business
Credit: 1 Grade Levels: 9-12

The Retail Business course will provide students an overview of the retailing industry from a regional, national, and global perspective. Students will increase awareness and knowledge of key elements within the retail industry including business operations, marketing, sales, supply, and production, merchandising, promotion, selling, analyzing and forecasting sales, operations, and inventory control. The course will also focus on fundamental retail processes and related careers that are essential to maintaining production, purchasing, inventory, and a sustainable supply chain to help ensure products are readily available for consumers. Students will also explore retail operations used within different types of retail companies, on-line and e-commerce businesses, and future trends within the retail industry.

492000 Securities, Investments, Risk, and Insurance
Credit: 1 Grade Levels: 9-12

Securities, Investments, Risk, and Insurance provides students with the tools and techniques needed for short-term earnings and long-term saving and investing strategies while emphasizing an understanding of the value of money. In addition, ethical and professional characteristics will be addressed. Project-based learning opportunities will be used to introduce students to the real-world applications of insurance planning, risk management, and investment avenues of personal financial planning.

492700 Small Business Operations
Credit: 1 Grade Levels: 10-12

Small Business Operations prepares students who are interested in learning how to manage a small business. Students are required to participate in laboratory work. The lab experience will consist of operating a School Based Enterprise. In addition to the lab work, students will also complete a series of lessons designed to prepare them for the transition to higher education and/or an entrepreneurial career. ***Specific documentation will be required to be submitted to DCTE. The prerequisite for this course is Marketing Business Enterprise (492330).**

492120 Survey of Business
Credit: 1 Grade Levels: 9-12

Survey of Business is a two-semester course. It is designed to introduce students to business and marketing programs of study and related technology to help students succeed in business and marketing careers. The clusters and related programs of study are: Business Management & Administration: Management, Medical Office Administration, and Office Administration; Finance: Accounting, Banking, and Securities, Investments, Risk and Insurance; Hospitality and Tourism: Hospitality and Tourism; Marketing: Marketing Business Enterprise, Digital Marketing and Retail Management; and Transportation, Distribution, and Logistics: Supply Chain and Logistics. Using industry-recognized software, students will focus on skills in word processing, spreadsheets, database, presentations, and cloud computing as they relate to business and marketing careers. This course will focus on skills needed to obtain Microsoft Office Specialist (MOS) certifications. Computerized Business Applications is designed to prepare students in the use of software that is industry recognized. Topics include: word processing, spreadsheets, database, presentations, and cloud computing. This course will focus on skills needed to obtain Microsoft Office Specialist (MOS) certifications.

This course is a core requirement for all clusters, pathways, and programs of study.

492260 Tourism Industry Management
Credit: 1 Grade Levels: 9-12

The content for this course includes but is not limited to customer service, management and supervisory development, management theory, decision making, organization, communications, human relations, leadership training, personnel training, travel counseling, reservationists, ticketing, tour development, security, sales, travel and tourism accounting, marketing, and convention management, applicable local, state, and federal laws and asset management.

490830 Transportation and Distribution
Credit: 1 Grade Levels: 11-12

This year-long course covers concepts and skills related to planning and management of transportation and distribution activities affecting business operations. Students will learn essential knowledge for entry into careers in the transportation, distribution, and logistics fields.

Family and Consumer Science Education

Program Description

FCS prepares students for family and work life as well as careers in the family and consumer sciences area. FCS programs provide opportunities to develop knowledge, skills, attitudes, and behaviors that strengthen individuals and families, leading to responsible citizenship, leadership, and careers. Programs promote nutrition and wellness, financial literacy, life management skills, and employable soft skills that enable students to function effectively as providers and consumers of goods and services. The critical and creative thinking skills promoted in Family and Consumer Sciences prepares students to solve complex problems in the diverse environments of a global economy. Family and Consumer Sciences courses are designed to assist students in the development of skills that will enable them to secure employment and advance in a chosen family and consumer sciences career. Students develop employment and career plans with a focus on accountability, as they learn to accept responsibility for actions and personal success.

Family and Consumer Science offers sequential career focus programs of study in multiple pathways correlated to all relevant national standards. Students are encouraged to obtain state and/or national certifications in conjunction with FCS programs.

Middle Level Family and Consumer Sciences Courses

Course Code	Course Name	Credit	7th	8th	9th	10th	11th	12th
399080	Family & Consumer Science Investigations	N/A	X	X				
399260	Exploring Personal Finance	N/A	X	X				
399090	Leadership & Service Learning	N/A	X	X				

Cluster: Arts, A/V Technology, & Communications

Pathway: Visual Arts

Program of Study: Clothing and Housing Design

Level 1	Level 2	Level 3
Family and Consumer Sciences (493080)	Fashion and Interior Design (490890)	Advanced Fashion and Interior Design (490900) Career Practicum (490820)

Please see certification list at <https://dcte.ade.arkansas.gov/CteAdministration/Industry Certifications>

Cluster: Education and Training Cluster

Pathway: Teaching and Training

Program of Study: Pre-Educator

Level 1	Level 2	Level 3	Level 4 (Optional)
Life Span Development (493020)	<ul style="list-style-type: none"> Foundations of Teaching (493240) Teacher Cadet I (497100) Concurrent Credit Foundations of Teaching (590230) 	<ul style="list-style-type: none"> Methods of Teacher Instruction (493290) Teacher Cadet II (497110) Concurrent Credit Methods of Teacher Instruction (590520) 	Career Practicum (490660)

Please see certification list at <https://dcte.ade.arkansas.gov/CteAdministration/Industry Certifications>.

Cluster: Hospitality and Tourism

Pathway: Restaurant and Food and Beverage Services

Program of Study: Culinary Arts and Food Production, Management, and Services

Level 1	Level 2	Level 3
Food Safety and Nutrition (493110)	<ul style="list-style-type: none"> Culinary I (493260) Concurrent Credit Culinary Arts I (592150) Food Production, Management, and Services (493120) Concurrent Credit Food Production, Management and Services (590280) 	<ul style="list-style-type: none"> Culinary II (493270) Concurrent Credit Culinary Arts II (592160) Hospitality Administration** (492250) <ul style="list-style-type: none"> And Arkansas Hospitality and Tourism ** (492230) Career Practicum (490670)

Please see certification list at [https://dcte.ade.arkansas.gov/CteAdministration/Industry Certifications](https://dcte.ade.arkansas.gov/CteAdministration/Industry%20Certifications)

**Cluster: Human Services
Pathway: Consumer Services
Program of Study: Consumer Services**

Level 1	Level 2	Level 3
Family and Consumer Sciences (493080)	Consumer Services (493310)	<ul style="list-style-type: none"> Advanced Consumer Services (490910) Career Practicum (490680)

Please see certification list at [https://dcte.ade.arkansas.gov/CteAdministration/Industry Certifications](https://dcte.ade.arkansas.gov/CteAdministration/Industry%20Certifications)

**Cluster: Human Services
Pathway: Family and Community Services
Program of Study: Human & Social Services**

Level 1	Level 2	Level 3
Family and Consumer Sciences (493080)	Life Span Development (493020)	<ul style="list-style-type: none"> Dynamics of Human Relationships (493150) Child Care Guidance, Management, and Services (493010) Career Practicum (490680)

Please see certification list at [https://dcte.ade.arkansas.gov/CteAdministration/Industry Certifications](https://dcte.ade.arkansas.gov/CteAdministration/Industry%20Certifications)

**Pathway: Family and Community Services
Program of Study: Nutrition Science and Dietetics**

Level 1	Level 2	Level 3
Family and Consumer Sciences (493080)	Food Safety & Nutrition (493110)	<ul style="list-style-type: none"> Life and Fitness Nutrition (493200) Advanced Nutrition & Dietetics (493340) Chemistry of Foods (493130) Career Practicum (490680)

Please see certification list at [https://dcte.ade.arkansas.gov/CteAdministration/Industry Certifications](https://dcte.ade.arkansas.gov/CteAdministration/Industry%20Certifications)

**Pathway: Personal Care Services
Program of Study: Cosmetology**

Level 1	Level 2 and Level 3
Cosmetology I (494550)	Cosmetology II (2 credits) (494570)

****Special Certification and Licensure Requirements:**

1. Meet the licensure requirements for career and technical permits
2. Licensed by the Arkansas State Board of Cosmetology
3. Hold a current cosmetology instructor's license issued by the Arkansas State Board of Cosmetology

The following courses are supplemental courses and can be offered within Family and Consumer Sciences programs of study but do not count toward concentrator status:

1. Personal Finance*(491990)-WISE and Everfi Financial Literacy Certifications
2. Leadership and Service Learning (493160)
3. Digital Marketing (492760)**
4. Marketing Business Enterprise (492330)**
5. Fashion Merchandising (492190)**

*Satisfies requirements of Act 480 and 466

**Taught in the Business Department and require a Business Licensure

The following certifications are acceptable across all Family and Consumer Science Program Areas

1. Career Readiness Certificates
2. Digital Literacy
3. All Microsoft Office (MOS) Certifications Specialist and Expert
4. iCEV Express Employment Professionals Career Preparedness
5. iCEV Southwest Airlines Professional Communications

MIDDLE LEVEL COURSES

399260 Exploring Personal Finance

Credit: 0 Grade Levels: 7-8

Exploring Personal Finance is a middle level course designed to introduce students to the knowledge and skills required for managing their personal and family financial resources. Students learn to manage resources through hands-on applications that are relevant to their lives. Projects will require students to use academic skills in language arts, math, social sciences, and science. Emphasis is given to the development of competencies related to values, needs, and wants, goals and decision-making, career exploration, understanding paychecks, spending plans, savings, electronic banking and credit, financial institutions, and checking accounts.

399080 Family & Consumer Science Investigation (Family CSI)

Credit: 0 Grade Levels: 7-8

Family and Consumer Science Investigation is a one semester course that emphasizes introductory competencies related to personal development, communication, relationships, home environment, nutrition and wellness, food safety and preparation, resource management, child development, and clothing. Students will have an opportunity to fully participate in the CTSO activities of Family, Career, and Community Leaders of America. Upon completion of this course, students will gain skills that will enable them to function more effectively as an employee, family member, community leader, and productive citizen. **In kitchen labs areas, kitchens should be limited to 3-5 students for safety purposes.**

399090 Leadership & Service Learning (7-8)

Credit: 0 Grade Levels: 7-8

Leadership and Service Learning emphasizes the importance of leadership skills, volunteerism, and professionalism in the development of personal qualities. This course focuses on the benefits of community service, leadership roles, and civic responsibilities. Course projects and activities incorporate and reinforce academic skills such as language arts, math, and science. Students are encouraged to explore areas of critical and creative thinking, responsibility, and cultural awareness as they relate to character development. The use of current technology enhances communication skills and promotes professionalism.

HIGH SCHOOL COURSES

490900 Advanced Fashion and Interior Design

Credit: 1 Grade Levels: 11-12

Prerequisite: Fashion and Interior Design (490890)

Students in Advanced Fashion and Interior Design will develop necessary skills for the management and construction of commercial buildings, industrial garment construction and related projects. Basic construction techniques are integrated throughout the course in various projects. One or more advanced level projects will create projects using correct construction techniques and commercial interior design skills. Students will have in-depth experiences using advanced sewing techniques, such as pattern alterations exploring seams and constructions, use of facing and advanced hand stitching techniques and the use of advanced technology. The student will also develop skills for understanding commercial regulations pertaining to interior design. Upon completion of this course, students should master knowledge and skills needed for designing and constructing projects in both the fashion and interior design industry as well as develop a professional portfolio.

490910 Advanced Consumer Services

Credit: 1 Grade Levels: 11-12

Prerequisite: Consumer Services (493310)

The Advanced Consumer Services course is a school-based enterprise where students attain experience researching the market and identifying the need for a product or service. Students will create, produce, and market a product or service as part of the program. This program provides students the opportunity to determine the characteristics of entrepreneurs, and to track the establishment of a successful business from its inception as an entrepreneurial idea. By using technology, students will learn to evaluate information that will attract and retain customers, provide customer satisfaction, and apply principles and processes to meet customer's expectations. Students will learn to use business procedures and apply them in the school based enterprise work experience. As an enrichment activity, students are encouraged to launch their own entrepreneurial effort outside the school-based enterprise.

Students will participate in a school-based business enterprise.

493340 Advanced Nutrition and Dietetics

Credit: 1 Grade Levels: 11-12

Prerequisite: Food Safety and Nutrition (493110)

Advanced Nutrition and Dietetics emphasizes the profession of nutrition and dietetics, the professional role of the dietitian, and career opportunities in nutrition and dietetics. The student will explore nutritive processes, nutritional needs for various stages of the life cycle, therapeutic diets, dietary modifications, and timely nutrition-related issues. Students use critical thinking skills to investigate scientific, consumer oriented, and global aspects of nutrition, as well as programs, policies, and institutions that influence nutrition services at the local, state, and national levels. Laboratory instruction and work-based learning opportunities are throughout the course curriculum.

In kitchen labs areas, kitchens should be limited to 3-5 students for safety purposes.

493130 Chemistry of Food
Credit: 1 Grade Levels: 11-12

Prerequisite: Food Safety and Nutrition (493110)

Chemistry of Foods focuses on the scientific method to study the various relationships between food science, nutrition, and food preparation. Laboratory skills in measuring, recording, and analyzing data are used to explore these relationships. Experimental methods are employed to analyze food mixtures, food microbiology, food preservations, and complex food systems. Students investigate career possibilities as well as up to date information regarding technological advances and future trends in food preparation, preservation, evaluation, and utilization of food.

In kitchen labs areas, kitchens should be limited to 3-5 students for safety purposes.

493010 Child Care Guidance, Management, & Services
Credit: 1 Grade Levels: 11-12

Prerequisite: Lifespan Development (493020)

This course provides students with information and experiences in the occupational field of childcare guidance, management and services. Employment opportunities include childcare and guidance, early childhood education, foster care, family day care, and teacher assistants. Emphasis in this course is given to development of competencies related to FCCLA, employability, understanding the child care profession, child development, health and safety of children, guiding children's behavior, guiding special needs children, planning and management of a child care program and facility, and the effect of technology in child care and guidance management and services. Upon successful completion of this course, students may apply for state certification as childcare teacher, childcare assistant, or childcare aide. The level of certification depends on the number of FCS courses taken in the childcare program of study.

Special Notes –

The course requires a minimum of 40 hours of hands-on practicum in a childcare facility. Students should be at least sixteen (16) years of age before participating in the practicum. Background checks are required before students can participate in the practicum.

493310 Consumer Services
Credit: 1 Grade Levels: 10-12

Prerequisite: Family and Consumer Science (493080)

Consumer Services is a course that introduces applications within the consumer service industry. Students will obtain a broad-based knowledge in consumer products and industry equipment in order to obtain and maintain a profession in consumer services, to allow demonstration of product/equipment features and associated uses, to read and understand current research information to include in presentations to consumers, and to recognize and apply current ethical and legal practices in consumer services. Course content includes using technology to manage various aspects of consumer services to meet consumer expectations and to utilize consumer information and resources.

494550 Cosmetology I
Credit: 1 Grade Levels: 11-12

This two-semester instructional program prepares the individual to begin achieving the basic competencies necessary to begin a program of study in cosmetology.

494570 Cosmetology II
Credit: 2 Grade Levels: 11-12

The course allows the completion of the 1,500 hours of training and instruction required to be eligible for the State Board of Cosmetology licensing examination.

494560 Cosmetology Lab
Credit: 1 Grade Levels: 11-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute a comprehensive cosmetology product.

493260 Culinary Arts I
Credit: 1 Grade Levels: 10-12

Prerequisite: Food Safety and Nutrition (493110)

Culinary Arts I is a one-year course designed to expand students' knowledge in the culinary arts profession. The course emphasizes the study of kitchen staples, principles of cooking, soups, stocks and sauces, dairy products, eggs, fruit and vegetables, grains and pasta cookery, meat cookery and principles of baking. Upon completion of this course, students should have attained basic skills needed for entry-level employment in the food service industry, customer relations, purchasing and storage of foods, cooking techniques and principles of baking.

Special Notes – Commercial kitchen and equipment are required for this program of study.

In kitchen labs areas, kitchens should be limited to 3-5 students for safety purposes.

493270 Culinary Arts II
Credit: 1 Grade Levels: 10-12
Prerequisite: Culinary Arts I (493260)

Culinary Arts II is a one-year course designed to expand students' knowledge in the culinary arts profession. Emphasis is on the study of sauces, garde-manger, advanced meat preparation, advanced poultry preparation, fish and shellfish, candy making, chocolate, advanced baking and pastries, plating, presentation and garnishing, and career opportunities. Upon completion of this course, students should have obtained the basic skills needed for employment in the food service industry or further education in culinary arts.

Special Notes – Commercial kitchen and equipment are required for this program of study.

In kitchen labs areas, kitchens should be limited to 3-5 students for safety purposes.

493150 Dynamics of Human Relationships
Credit: 1 Grade Levels: 11-12

Prerequisite: Lifespan Development (493020)

Dynamics of Human Relationships focuses on the nature, function, and significance of human relationships within family, community and career settings. This course examines skills needed for positive and productive relationships. The course also includes the study of these relationships and their effects on an individual's life. The course includes the importance of mental wellness, positive coping techniques, and awareness of treatment options of mental illnesses. This course provides a foundation for all career areas that involve interacting with families, mental health and wellness, treatment team members, clients, patients, customers, and the public.

493080 Family & Consumer Sciences
Credit: 1 Grade Levels: 9-12

Family and Consumer Science provides students with the basic information and skills needed to function effectively in the family and the workforce, within a complex and changing society. Emphasis is on the development of competencies related to Family, Career, and Community Leaders of America, individual and family relationships, healthy lifestyle choices; housing and interior design; garment care, selection and construction; the physical, emotional, social and intellectual development of children; nutrition, meal planning, food preparation and foodservice; home management, money management. Upon completion of this course, the student should have developed skills that promote a positive influence on the quality of life.

In kitchen labs areas, kitchens should be limited to 3-5 students for safety purposes.

493890 Fashion and Interior Design
Credit: 1 Grade Level: 10-12

Prerequisite: Family and Consumer Science (493080)

The Fashion and Interior Design course will assist students in developing skills necessary for personal fashion and residential interior design. The student will gain knowledge and industry necessary skills needed in the fashion and interior design career fields. The skills introduced and taught are clothing care and selection, characteristics of natural and synthetic fibers, types of fabric and fabric finishes, laws and regulations related to the clothing and textile industry, use and care of basic sewing supplies and equipment, fabric selection for clothing and housing materials, clothing construction techniques, and careers related to the fashion and textile industry. Students will also gain knowledge related to the basics of home design, materials used in home design and construction, home maintenance and safety, and careers in housing and interior design. Upon completion of this course, the student should acquire textile construction skills and design skills enabling them to advance to the next level in the fashion and interior design field.

493120 Food Production, Management, & Services
Credit: 1 Grade Levels: 10-12

Prerequisite: Food Safety and Nutrition (493110)

The Food Production, Management, and Services student develops skills related to employability, technology in food production, management, and services. Students practice current sanitation and safety guidelines. The course prepares students for following nutrition guidelines while menu planning. Students develop skills in the servicing of food, purchasing, receiving, and storing of food supplies. Instruction includes proper use, care, and storage of large and small commercial foodservice equipment.

Special Notes – Commercial kitchen and equipment are required for this program of study.

In kitchen labs areas, kitchens should be limited to 3-5 students for safety purposes.

493110 Food Safety & Nutrition
Credit: 1 Grade Levels: 9-12

Family and Consumer Science (493080) for Nutrition Science and Dietetics Program of Study.

This course focuses on the development of essential food safety practices needed to select, receive, store, prepare, and serve food, as well as the skills needed to select food that meets nutritional needs of individuals and families. Students will learn to create and implement an environment of food safety procedures based on the latest FDA Food Code and local regulations. This course gives emphasis to the development of competencies related to nutrition, weight control, the food consumer, the effect of technology on food and nutrition, and food preparation skills. With completion of this course, students should be able to apply sound sanitation practices, to apply sound nutritional practices for positive effect on their health, and food preparation skills necessary in various aspects of the food industry.

In kitchen labs areas, kitchens should be limited to 3-5 students for safety purposes.

493240 Foundations of Teaching

Credit: 1 Grade Levels: 10-12

Prerequisite: Lifespan Development (493020)

Foundations of Teaching is a one-year course designed to provide students with information and experiences in the field of education. Students will plan and direct individualized instruction and group activities, prepare instructional materials, assist with record keeping, make physical arrangements, and experience other responsibilities of classroom teachers. Students are involved in observations as well as direct student instruction; placement rotations are utilized to allow students to have experiences in various education career roles, grade levels, subject areas, and ability groups. Upon completion of the course, students should have identified areas of special interest that may be pursued further, have a better understanding of the teaching profession, and have enhanced employability skills which will be of benefit regardless of the occupation or career in which employed. **Teacher Cadet Curriculum and Educator Rising Curriculum may be used to assist in teaching the standards.**

Special Notes: A forty (40) hour practicum is required for the course.

493160 Leadership & Service Learning (9-12)

Credit: .5 Grade Levels: 9-12

Leadership and Service Learning emphasize the importance of leadership skills, volunteerism and professionalism in the development of personal qualities. This course focuses on the benefits of community service, leadership roles and civic responsibilities. Course projects and activities incorporate and reinforce academic skills such as math and science. Students are encouraged to explore areas of critical and creative thinking, responsibility, and cultural awareness as they relate to character development. The use of current technology enhances communication skills and promotes professionalism. **Does not count towards completer status.**

493020 Lifespan Development

Credit: 1 Grade Levels: 9-12

Lifespan Development focuses on skills needed to guide the physical, cognitive/intellectual, emotional, and social development of children. This course focuses on development of career-ready skills related to pregnancy and prenatal development, types and stages of child growth and development, needs of children, factors influencing the behavior of children, children with special needs, coping with crises, the effects of technology on child development, and careers related to the area of child development. Students will also gain knowledge and skills of the parenting process and parenting skills, costs related to raising children, resources available to parents, and factors to consider when selecting childcare and education options. Lifespan Development will benefit anyone who lives with, associates with, or works with children in various career fields.

493200 Life and Fitness Nutrition

Credit: 1 Grade Levels: 11-12

Prerequisite: Food Safety and Nutrition (493110)

Life Fitness Nutrition is a Level 3 course in the Nutrition Science and Dietetics program of study. It enables students to analyze the interaction of nutrition, foods, and fitness for overall wellness. In this course, students will develop nutrition and fitness habits to make wise decisions regarding healthy living. Students will develop higher order thinking skills and academic skills in the areas of math, science, language arts, and social studies through the evaluation of relevant nutrition and wellness information. The course is for students with interests in health and wellness, fitness, and foods and nutrition related career pathways. **In kitchen labs areas, kitchens should be limited to 3-5 students for safety purposes.**

493290 Methods of Teaching Instruction

Credit: 1 Grade Levels: 11-12

Prerequisite: Foundations of Teaching (493240)

Methods of Teacher Instruction is a course designed to integrate psychological, sociological, and philosophical foundations, which prepare students for positive field experiences. This course encourages prospective teachers to become responsible, professional, and ethical as they explore the teaching profession. The students will research and examine foundations within the educational system. Upon completion of this course, a student should have a working knowledge of and employability skills for the education profession. The student will have the opportunity to obtain the paraprofessional certification. **Teacher Cadet Curriculum and Educators Rising Curriculum may be used to assist in teaching the standards.**

491990 Personal Finance

Credit: .5 Grade Levels: 10-12

This course is designed to increase financial literacy and prepare students to manage financial resources successfully. This course also focuses on the individual's role and financial responsibilities as a student, citizen, consumer, and active participant in the business world. Emphasis is placed on activities and competitions within career and technical student organizations (i.e., FBLA, FCCLA, and DECA). **Does not count towards completer status.**

Science, Technology, Engineering and Math (STEM)

Program Descriptions

STEM Programs are designed to train individuals in the fields of Science, Technology, Engineering and Mathematics

- Solving real-world problems through problem-based learning
- Teaching a rigorous curriculum using advanced technology
- Improving problem solving skills through engineering by design processes
- Designing, planning, managing, building, and maintaining physical structures and the larger built environment, including roadways and bridges and industrial, commercial, and residential facilities and buildings
- Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development
- Applying technical knowledge and skills in one or more trade, technical, and/or professional occupations. Students will engage in activities and instruction enabling them to use, create, problem solve, and control various technology resources: people, tools, machines, information, materials, energy, capital, and time.

MIDDLE LEVEL COURSES:

Gateway to Technology: Project Lead the Way (PLTW)

Course Code	Course Name	Credit	7th	8th
399110	Automation and Robotics (AR)	0	X	X
399120	Design and Modeling (DM)	0	X	X
399310	Energy and the Environment (EE)	0	X	X
399250	Flight and Space (FS)	0	X	X
399300	Green Architecture (GA)	0	X	X
399130	The Magic of Electrons (ME)	0	X	X
399140	The Science of Technology (ST)	0	X	X
399180	Career Medical Detectives (MD)	0	X	X

Engineering Technology Education

Course Code	Non-Program Specific Electives	Credit	7th	8th	9th
399150	Engineering Technology Education I (ETE 1)	0	X	X	
399160	Engineering Technology Education II (ETE 2)	0	X	X	
494010	Engineering Technology Education I	.5			X
494020	Engineering Technology Education II	.5			X

Cluster: Architecture and Construction Cluster

Pathway: Design and Pre-Construction Pathway

Program of Study: Architectural CAD

Level One	Level Two	Level Three
Drafting and Design (494700)	Architectural/CAD I (494710)	1. Architectural/CAD II (494730) 2. Career Practicum (490690)
Industry Recognized Certifications: 1. Autodesk Certified User (ACU) Revit 2. Solid Edge Associate		

Cluster: Architecture and Construction Cluster
Pathway: Design and Pre-Construction Pathway
Program of Study: Engineering CAD

Level One	Level Two	Level Three
Drafting and Design (494700)	Engineering/CAD I (494740)	1. Engineering/CAD II (494760) 2. Career Practicum (490690)
Industry Recognized Certifications: 1. Autodesk Certified User (ACU) Inventor 2. AutoCAD Certified User 3. Solid Edge Associate 4. Certified Solidworks Associate (CSWA)		

Cluster: Health Sciences
Pathway: Biotechnology Research and Development
Program of Study: Biomedical Sciences

Level One	Level Two	Level Three
Principles of Biomedical Sciences (PBS) (495000)	Human Body Systems (HBS) (495010)	1. Medical Interventions (MI) (495020) 2. Career Practicum (490700)
Industry Recognized Certifications: 1. Biotechnician Assistant Credentialing Exam (B.A.C.E.)		

Cluster: STEM (Science, Technology, Engineering, and Mathematics)
Pathway: Engineering and Technology
Program of Study: Pre-Engineering

Level One	Level Two	Level Three
Introduction to Engineering Design (IED) (495480) OR Innovations in Science and Technology I (493960)	Principles of Engineering (POE) (495490) OR Innovations in Science and Technology II (493970)	1. Aerospace Engineering (AE) (494980) 2. Civil Engineering and Architecture (CEA) (495440) 3. Computer-Integrated Manufacturing (CIM) (495450) 4. Digital Electronics (DE) (495460) 5. Engineering Design and Development (495470) 6. One full credit (2 courses) of AR Approved Computer Science (course codes may vary) 7. Career Practicum (490720) 8. Innovations in Science and Technology III (493980)
Industry Recognized Certifications: 1. Autodesk Certified User (ACU) Inventor 2. Autodesk Certified User (ACU) Revit 3. CLAD: Certified LabVIEW Associate Developer 4. Solid Edge Certified Associate		

Cluster: STEM (Science, Technology, Engineering, and Mathematics)
Pathway: Engineering and Technology
Program of Study: Unmanned Aerial Systems

Level One	Level Two	Level Three
Unmanned Aerial Systems (UAS) I (490160)	Unmanned Aerial Systems (UAS) II (490170)	<ol style="list-style-type: none"> 1. Unmanned Aerial Systems (UAS) III (490180) 2. Unmanned Aerial Systems (UAS) Flex Course (490150) 3. Civil Engineering and Architecture (CEA) (495440) 4. Computer-Integrated Manufacturing (CIM) (495450) 5. Digital Electronics (DE) (495460) 6. Career Practicum (490720)
Industry Recognized Certifications: <ol style="list-style-type: none"> 1. FAA Part 107 Licensure 2. ArcGIS Desktop Entry Certification 		

Cluster: STEM (Science, Technology, Engineering, and Mathematics)
Pathway: Engineering and Technology
Program of Study: Automation and Robotics Technology

Level One	Level Two	Level Three
Automation and Robotics Technology 1 (490390)	Automation and Robotics Technology 2 (490400)	<ol style="list-style-type: none"> 1. Automation and Robotics Technology 3 (490410) 3. Career Practicum (490710)
Industry Recognized Certifications: <ol style="list-style-type: none"> 1. ABB Robotics 2. FANUC Robotics 		

Cluster: Information Technology Cluster
Pathway: Programming & Software Development
Program of Study: Computer Science: Artificial Intelligence and Machine Learning

Level One	Level Two	Level Three
Artificial Intelligence and Machine Learning – Year 1 (465410) or College Board AP Computer Science Principles (565030)	Artificial Intelligence and Machine Learning – Year 2 (465420)	<ol style="list-style-type: none"> 1. Advanced Artificial Intelligence and Machine Learning (465430) 2. Computer Science Independent Study (465930) 3. Computer Science Internship (465940) 4. CS Concurrent Credit (565910, 565920, 565930, 565940, 565950, 565960, 565970, 565980, 565990) 5. CS Weighted Concurrent Credit (565810, 565820, 565830, 565840, 565850, 565860, 565870, 565880, 565890) 6. Career Practicum – Computer Science (465780, 465790, 465880, 465890)
Industry Recognized Certifications: <ol style="list-style-type: none"> 1. PCAP - Certified Associate in Python Programming 2. CLA – C Programming Language Certified Associate 3. CPA – C++ Certified Associate Programmer 4. Java SE 8 Programmer Certification 5. CJSD - Certified JavaScript Developer 6. CompTIA A+ 7. CompTIA Network+ 8. CompTIA Security+ 9. Tensor Flow 10. AWS Certified Machine Learning 		

Cluster: Information Technology Cluster
Pathway: Programming & Software Development
Program of Study: Computer Science: Computer Engineering

Level One	Level Two	Level Three
Computer Engineering – Year 1 (465470) or College Board AP Computer Science Principles (565030)	Computer Engineering – Year 2 (465480)	<ol style="list-style-type: none"> 1. Advanced Computer Engineering (465490) 2. Computer Science Independent Study (465930) 3. Computer Science Internship (465940) 4. CS Concurrent Credit (565910, 565920, 565930, 565940, 565950, 565960, 565970, 565980, 565990) 5. CS Weighted Concurrent Credit (565810, 565820, 565830, 565840, 565850, 565860, 565870, 565880, 565890) 6. Career Practicum – Computer Science (465780, 465790, 465880, 465890)
Industry Recognized Certifications: <ol style="list-style-type: none"> 1. PCAP - Certified Associate in Python Programming 2. CLA – C Programming Language Certified Associate 3. CPA – C++ Certified Associate Programmer 4. Java SE 8 Programmer Certification 5. CJSD - Certified JavaScript Developer 6. CompTIA A+ 7. CompTIA Network+ 8. CompTIA Security+ 		

Cluster: Information Technology Cluster
Pathway: Programming & Software Development
Program of Study: Computer Science: Cybersecurity

Level One	Level Two	Level Three
Cybersecurity – Year 1 (465270) or College Board AP Computer Science Principles (565030)	Cybersecurity – Year 2 (465280)	<ol style="list-style-type: none"> 1. Advanced Cybersecurity (465290) 2. Computer Science Independent Study (465930) 3. Computer Science Internship (465940) 4. CS Concurrent Credit (565910, 565920, 565930, 565940, 565950, 565960, 565970, 565980, 565990) 5. CS Weighted Concurrent Credit (565810, 565820, 565830, 565840, 565850, 565860, 565870, 565880, 565890) 6. Career Practicum – Computer Science (465780, 465790, 465880, 465890)
Industry Recognized Certifications: <ol style="list-style-type: none"> 1. PCAP - Certified Associate in Python Programming 2. CLA – C Programming Language Certified Associate 3. CPA – C++ Certified Associate Programmer 4. Java SE 8 Programmer Certification 5. CJSD - Certified JavaScript Developer 6. CompTIA A+ 7. CompTIA Network+ 8. CompTIA Security+ 9. EC-Council Associate: Ethical Hacking Associate 10. CompTIA PenTest+ 		

Cluster: Information Technology Cluster
Pathway: Programming & Software Development
Program of Study: Computer Science: Data Science

Level One	Level Two	Level Three
Data Science – Year 1 (465710) or College Board AP Computer Science Principles (565030)	Data Science – Year 2 (465720)	<ol style="list-style-type: none"> 1. Advanced Data Science (465730) 2. Computer Science Independent Study (465930) 3. Computer Science Internship (465940) 4. CS Concurrent Credit (565910, 565920, 565930, 565940, 565950, 565960, 565970, 565980, 565990) 5. CS Weighted Concurrent Credit (565810, 565820, 565830, 565840, 565850, 565860, 565870, 565880, 565890) 6. Career Practicum – Computer Science (465780, 465790, 465880, 465890)
Industry Recognized Certifications: <ol style="list-style-type: none"> 1. PCAP - Certified Associate in Python Programming 2. CLA – C Programming Language Certified Associate 3. CPA – C++ Certified Associate Programmer 4. Java SE 8 Programmer Certification 5. CJSD - Certified JavaScript Developer 6. CompTIA A+ 7. CompTIA Network+ 8. CompTIA Security+ 9. Professional Data Engineer 10. AWS Certified Data Analytics 11. Data Science Certification 		

Cluster: Information Technology Cluster
Pathway: Programming & Software Development
Program of Study: Computer Science: Game Development and Design

Level One	Level Two	Level Three
Game Development and Design – Year 1 (465670) or College Board AP Computer Science Principles (565030)	Game Development and Design – Year 2 (465680)	<ol style="list-style-type: none"> 1. Advanced Game Development and Design (465690) 2. Computer Science Independent Study (465930) 3. Computer Science Internship (465940) 4. CS Concurrent Credit (565910, 565920, 565930, 565940, 565950, 565960, 565970, 565980, 565990) 5. CS Weighted Concurrent Credit (565810, 565820, 565830, 565840, 565850, 565860, 565870, 565880, 565890) 6. Career Practicum – Computer Science (465780, 465790, 465880, 465890)
Industry Recognized Certifications: <ol style="list-style-type: none"> 1. PCAP - Certified Associate in Python Programming 2. CLA – C Programming Language Certified Associate 3. CPA – C++ Certified Associate Programmer 4. Java SE 8 Programmer Certification 5. CJSD - Certified JavaScript Developer 6. CompTIA A+ 7. CompTIA Network+ 8. CompTIA Security+ 9. Associate Android Developer 10. Unity Certified User: Programmer 11. Unity Certified User: VR Developer 12. Unity Certified User: Artist 13. App Development with Swift Associate 14. App Development with Swift Certified User 		

Cluster: Information Technology Cluster
Pathway: Programming & Software Development
Program of Study: Computer Science: Mobile Application Development

Level One	Level Two	Level Three
Mobile Application Development – Year 1 (465370) or College Board AP Computer Science Principles (565030)	Mobile Application Development – Year 2 (465380)	<ol style="list-style-type: none"> 1. Advanced Mobile Application Development (465390) 2. Computer Science Independent Study (465930) 3. Computer Science Internship (465940) 4. CS Concurrent Credit (565910, 565920, 565930, 565940, 565950, 565960, 565970, 565980, 565990) 5. CS Weighted Concurrent Credit (565810, 565820, 565830, 565840, 565850, 565860, 565870, 565880, 565890) 6. Career Practicum – Computer Science (465780, 465790, 465880, 465890)
Industry Recognized Certifications: <ol style="list-style-type: none"> 1. PCAP - Certified Associate in Python Programming 2. CLA – C Programming Language Certified Associate 3. CPA – C++ Certified Associate Programmer 4. Java SE 8 Programmer Certification 5. CJSD - Certified JavaScript Developer 6. CompTIA A+ 7. CompTIA Network+ 8. CompTIA Security+ 9. Associate Android Developer 10. Unity Certified User: Programmer 11. Unity Certified User: VR Developer 12. Unity Certified User: Artist 13. App Development with Swift Associate 14. App Development with Swift Certified User 		

Cluster: Information Technology Cluster
Pathway: Programming & Software Development
Program of Study: Computer Science: Networking

Level One	Level Two	Level Three
Networking – Year 1 (465170) or College Board AP Computer Science Principles (565030)	Networking – Year 2 (465180)	<ol style="list-style-type: none"> 1. Advanced Networking (465190) 2. Computer Science Independent Study (465930) 3. Computer Science Internship (465940) 4. CS Concurrent Credit (565910, 565920, 565930, 565940, 565950, 565960, 565970, 565980, 565990) 5. CS Weighted Concurrent Credit (565810, 565820, 565830, 565840, 565850, 565860, 565870, 565880, 565890) 6. Career Practicum – Computer Science (465780, 465790, 465880, 465890)
Industry Recognized Certifications: <ol style="list-style-type: none"> 1. PCAP - Certified Associate in Python Programming 2. CLA – C Programming Language Certified Associate 3. CPA – C++ Certified Associate Programmer 4. Java SE 8 Programmer Certification 5. CJSD - Certified JavaScript Developer 6. CompTIA A+ 7. CompTIA Network+ 8. CompTIA Security+ 9. Cisco Certified Entry Network Tech (CCENT) 10. CompTIA Network + 11. CompTIA Cloud+ 12. CompTIA Linux+ 13. CompTIA IT Fundamentals 14. Cisco IT Essentials PC Hardware & Software Certification 15. Cisco Certified Network Associate (CCNA) 		

Cluster: Information Technology Cluster
Pathway: Programming & Software Development
Program of Study: Computer Science: Programming

Level One	Level Two	Level Three
Programming – Year 1 (465070) or College Board AP Computer Science Principles (565030)	Programming – Year 2 (465080) or College Board AP Computer Science A (565130)* *College Board AP Computer Science A (565130) can be used to meet the requirements for Level Two OR Level Three in the Computer Science: Programming program of study, but not both.	1. Advanced Programming (465090) 2. International Baccalaureate (IB) Computer Science SL (565230) 3. International Baccalaureate (IB) Computer Science HL (565330) 4. College Board AP Computer Science A (565130) 5. Computer Science Independent Study (465930) 6. Computer Science Internship (465940) 7. CS Concurrent Credit (565910, 565920, 565930, 565940, 565950, 565960, 565970, 565980, 565990) 8. CS Weighted Concurrent Credit (565810, 565820, 565830, 565840, 565850, 565860, 565870, 565880, 565890) 9. Career Practicum – Computer Science (465780, 465790, 465880, 465890)
Industry Recognized Certifications: 1. PCAP - Certified Associate in Python Programming 2. CLA – C Programming Language Certified Associate 3. CPA – C++ Certified Associate Programmer 4. Java SE 8 Programmer Certification 5. CJSD - Certified JavaScript Developer 6. CompTIA A+ 7. CompTIA Network+ 8. CompTIA Security+ 9. Associate Android Developer 10. App Development with Swift Associate 11. App Development with Swift Certified User		

Cluster: Information Technology Cluster
Pathway: Programming & Software Development
Program of Study: Computer Science: Robotics

Level One	Level Two	Level Three
Robotics – Year 1 (465570) Or College Board AP Computer Science Principles (565030)	Robotics – Year 2 (465580)	1. Advanced Robotics (465590) 2. Computer Science Independent Study (465930) 3. Computer Science Internship (465940) 4. CS Concurrent Credit (565910, 565920, 565930, 565940, 565950, 565960, 565970, 565980, 565990) 5. CS Weighted Concurrent Credit (565810, 565820, 565830, 565840, 565850, 565860, 565870, 565880, 565890) 6. Career Practicum – Computer Science (465780, 465790, 465880, 465890)
Industry Recognized Certifications: 1. PCAP - Certified Associate in Python Programming 2. CLA – C Programming Language Certified Associate 3. CPA – C++ Certified Associate Programmer 4. Java SE 8 Programmer Certification 5. CJSD - Certified JavaScript Developer 6. CompTIA A+ 7. CompTIA Network+ 8. CompTIA Security+		

Cluster: Information Technology Cluster
Pathway: Programming & Software Development
Program of Study: ASU UPSkill: Coding with Swift

Level One	Level Two	Level Three
UpSkill Introduction to Coding with Swift Concurrent Credit (565910)	UpSkill Intermediate Coding with Swift Concurrent Credit (565920)	<ol style="list-style-type: none"> 1. UpSkill Advanced Studio in Swift Coding (Weighted Concurrent Credit 565810) 2. Independent Study for Swift certification (465910) 3. Advanced Programming (465090) 4. Computer Science Independent Study (465930) 5. Computer Science Internship (465940) 6. CS Concurrent Credit (565910, 565920, 565930, 565940, 565950, 565960, 565970, 565980, 565990) 7. CS Weighted Concurrent Credit (565810, 565820, 565830, 565840, 565850, 565860, 565870, 565880, 565890) 8. Career Practicum – Computer Science (465780, 465790, 465880, 465890)
Industry Recognized Certifications: <ol style="list-style-type: none"> 1. App Development with Swift Associate 2. App Development with Swift Certified User 		

Cluster: Information Technology Cluster
Pathway: Web & Digital Communications
Program of Study: Website Development

Level One	Level Two	Level Three
Web Technologies (492670)	Mobile Application Development – Year 1 (465370) or Programming – Year 1 (465070) or College Board AP Computer Science Principles (565030)	<ol style="list-style-type: none"> 1. Mobile Application Development – Year 2 (465380) 2. Advanced Programming (465090) 3. Computer Science Independent Study (465930) 4. Computer Science Internship (465940) 5. CS Concurrent Credit (565910, 565920, 565930, 565940, 565950, 565960, 565970, 565980, 565990) 6. CS Weighted Concurrent Credit (565810, 565820, 565830, 565840, 565850, 565860, 565870, 565880, 565890) 7. Career Practicum – Computer Science (465780, 465790, 465880, 465890)
Industry Recognized Certifications: <ol style="list-style-type: none"> 1. Microsoft Technology Associate Software Development Fundamentals 2. Microsoft Technology Mobility and Device Fundamentals 3. Swift Certification Level 1 4. Associate Android Developer 5. Adobe Certified Professional – Web Communication – Dreamweaver 6. JavaScript Certification W3 7. Front End Certification 8. CJSD - Certified JavaScript Developer 		

MIDDLE LEVEL COURSES

399110 Automation and Robotics (AR)

Credit: 0 Semester Course - Grade Levels: 7-8

Students trace the history and development of automation and robotics. They learn about structures, energy transfer, and machine automation. They also find out what they need to study in high school and beyond to prepare for careers in engineering.

399180 Career Medical Detectives (MD)

Credit: 0 Semester Course - Grade Levels: 7-8

Students play the role of real-life medical detectives as they analyze genetic testing results to diagnose disease and study DNA evidence found at a "crime scene." They solve medical mysteries through hands-on projects and labs, investigate how to measure and interpret vital signs, and learn how the systems of the human body work together to maintain health.

399120 Design and Modeling (DM)

Credit: 0 Semester Course - Grade Levels: 7-8

Students will learn the uses of solid modeling. They will be introduced to the design process and shown how this technology has influenced their lives. Using design briefs or abstracts, students create models and documentation to solve problems.

399310 Energy and the Environment (EE)

Credit: 0 Semester Course - Grade Levels: 7-8

Students investigate the impact of energy on their lives and the environment. Alternative energy sources are evaluated and used to reduce energy consumption through energy efficiency and sustainability.

399150 ETE 1 (Introduction to Engineering and Technology, 7-8th grade)

Credit: 0 Semester Course - Grade Levels: 7-8

Students will develop an understanding of the history of technology involving information and communication, construction, manufacturing, energy, power, transportation and how they can be used to solve technological problems.

399160 ETE 2 (Fundamentals of Engineering and Technology, 7-8th grade)

Credit: 0 Semester Course - Grade Levels: 7-8

Students will further their understanding of the impact technology has on the modern world involving information and communication, construction, manufacturing, energy, power, transportation and how they can be used to solve technological problems.

399250 Flight and Space (FS)

Credit: 0 Semester Course - Grade Levels: 7-8

The history of aerospace comes to life through hands-on activities and research as students explore the science behind aeronautics. Students use their knowledge to build, design, and test airfoil. Simulation software is used to provide space travel experience.

399300 Green Architecture (GA)

Credit: 0 Semester Course – Grade Levels: 7-8

The concept of "being green" is introduced to the next generation of designers and builders. Students learn about architectural styles and sustainability construction plans. An environmentally friendly home is designed using 3D architecture software.

399130 The Magic of Electrons (ME)

Credit: 0 Semester Course - Grade Levels: 7-8

Students use hands-on projects to explore the science of electricity including the behavior and parts of atoms using sensing devices. Knowledge and skills are acquired in basic circuitry design and the impact of electricity on our lives.

399140 The Science of Technology (ST)

Credit: 0 Semester Course - Grade Levels: 7-8

How science has affected technology throughout history is traced as students learn to apply the concepts in physics, chemistry and nanotechnology to STEM activities and projects.

HIGH SCHOOL COURSES

494980 Aerospace Engineering (AE)

Credit: 1 Grade Levels: 11-12

Through hands-on engineering projects developed with NASA, Aerospace Engineering students learn about aerodynamics, astronautics, space-life sciences, and systems engineering, including the study of intelligent vehicles like the Mars rovers Spirit and Opportunity.

494710 Architectural/CAD I (Core Course)

Credit: 1 Grade Levels: 9-12

Architectural/CAD I focuses on the knowledge and skills required to plan and prepare scale pictorial interpretations of plans and design concepts for residential buildings. Emphasis is given to the development of competencies related to solving drafting and design problems that require the individual to understand and apply a wide range of technical knowledge and critical thinking skills. The course is designed to allow the student to produce architectural drawings as traditional drawings or as computer-aided drawings.

494730 Architectural/CAD II

Credit: 1 Grade Levels: 10-12

Architectural/CAD II focuses on the knowledge and skills required to plan and prepare scale pictorial interpretations of plans and design concepts for residential buildings. Emphasis is given to the development of real world experiences in applying the application of architectural drafting standards. The course is designed to allow the student to produce drawings as traditional drawings or advanced use of various CAD software to produce drawings.

494720 Architectural/CAD Lab

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute a comprehensive architectural product.

490390 Automation and Robotics Technology 1

Credit: 1 Grade Levels: 9-12

This introduction to Automation and Robotics Technology enables students to identify and investigate different types of robotics systems. Students engage in designing and analyzing robotics systems.

490400 Automation and Robotics Technology 2

Credit: 1 Grade Levels: 9-12

This course in Automation and Robotics Technology enables students to identify and investigate problems in real-world scenarios, and devise solutions using various robotics systems.

490310 Automation and Robotics Technology 3

Credit: 1 Grade Levels: 9-12

This advanced course includes learning related to programming and creating working stations for robotic systems. Students will demonstrate robotic tool usage and editing programmed positions to optimize robotic performance. Students will demonstrate effective problem solving skills to program the robot to perform a specific, complex task.

495030 Biomedical Innovations (BI) – Capstone Course

Credit: 1 Grade Levels: 11-12

Students apply their knowledge and skills to answer questions and solve problems related to the biomedical sciences. In this capstone course, they may consult with a mentor or advisor from a university, hospital, physician's office, or industry. Students are expected to present the results of their work to an adult audience, which may include representatives from the local healthcare or business community or the school's Partnership Team.

495440 Civil Engineering and Architecture (CEA)

Credit: 1 Grade Levels: 11-12

This course builds upon the computer solid modeling design skills developed in Introduction to Engineering Design. Students will be presented with design problems that require the use of computer-aided drafting skills to develop solutions to the problems.

495450 Computer-Integrated Manufacturing (CIM)

Credit: 1 Grade Levels: 11-12

This course builds upon the computer solid modeling design skills developed in Introduction to Engineering Design. Students will be presented with design problems that require the use of Inventor to develop solutions to the problems.

495460 Digital Electronics (DE)

Credit: 1 Grade Levels: 10-12

Digital Electronics is a course of study in applied digital logic. The course is patterned after the first-semester course in digital electronics taught in two- and four-year colleges. Students will study the application of electronic logic circuits and devices and apply Boolean logic to the solution of problems.

494700 Drafting & Design (Core Course)

Credit: 1 Grade Levels: 9-12

Drafting and Design focuses on the basic knowledge and skills required to produce engineering and architectural drawings. Emphasis is given to the development of competencies related to the use of drafting equipment, the production of beginning level engineering drawings and the production of beginning level architectural drawings.

494740 Engineering/CAD I**Credit: 1 Grade Levels: 9-12**

Engineering/CAD I focus on the knowledge and skills required to produce advanced level engineering drawings. Emphasis is given to the development of competencies related to solving drafting and design problems that require the individual to understand and apply a wide range of technical knowledge and critical-thinking skills. The course is designed to allow the student to produce drawings of mechanical parts, engineering diagrams, electronics, etc. as traditional drawings or as computer-aided drawings.

494760 Engineering/CAD II**Credit: 1 Grade Levels: 10-12**

Engineering/CAD II focuses on the knowledge and skills required to produce advanced level engineering drawings. Emphasis is given to putting into practice real world experience related to solving problems that require the individual to understand and use various engineering software and techniques.

494750 Engineering/CAD Lab**Credit: 1 Grade Levels: 9-12**

This production-based program is designed to allow for the development of skills and knowledge needed to execute a comprehensive engineering product.

495470 Engineering Design and Development – (CAPSTONE)**Credit: 1 Grade Levels: 11-12**

In this course, students will work in teams of two to four to design and construct the solution to an engineering problem, applying the principles developed in the preceding four courses.

494010 ETE 1 (Introduction to Engineering and Technology, 9th grade)**Credit: .5 Grade Level: 9**

Students will develop an understanding of the history of technology involving information and communication, construction, manufacturing, energy, power, transportation and how they can be used to solve technological problems.

494020 ETE 2 (Fundamentals of Engineering and Technology, 9th grade)**Credit: .5 Grade Levels: 9**

Students will further their understanding of the impact technology has on the modern world involving information and communication, construction, manufacturing, energy, power, transportation and how they can be used to solve technological problems.

495010 Human Body Systems (HBS)**Credit: 1 Grade Levels: 9-12**

Students engage in the study of the processes, structures, and interactions of the human body systems. Important concepts in the course include: communication, transport of substances, locomotion, metabolic processes, defense, and protection. The central theme is how the body systems work together to maintain homeostasis and good health.

493960 Innovations in Science and Technology I**Credit: 1 Grade Levels: 9-12**

This is a contextual-based course that introduces students to the core fundamental concepts of science and technology through authentic projects. Through these projects, students will develop an understanding of the relationship between the physical, biological and social world. Students will gain an understanding of the differences between science and technology, and learn that technology is a process for applying science

493970 Innovations in Science and Technology II**Credit: 1 Grade Levels: 9-12**

This course uses the concepts learned from Course 1 to further develop students' problem-solving strategies and skills needed by the 21st-century workforce. Students will continue to explore emerging technologies and techniques in the context of addressing authentic projects.

493980 Innovations in Science and Technology III**Credit 1 Grade Levels 10-12**

This course will examine the past, present and future impact of science and technology on culture, society and the environment. Students will explore how their predecessors worked to solve some problems that still exist today, and examine the potential of using modern technology to solve those problems.

493990 Innovations in Science and Technology IV**Credit 1 Grade Levels 10-12**

This course will allow students to brainstorm, use invention, innovation, creativity, predictive analysis and use technology to solve real-world problems. Dimensions covered will include research and development, troubleshooting, experimentation, design failures, patents and trademarks, and design under constraints.

495480 Introduction to Engineering Design (IED)**Credit: 1 Grade Levels: 9-12**

Introduction to Engineering Design is an introductory course that develops students' problem-solving skills, with emphasis placed on the concept of developing a 3D model or solid rendering of an object. Students focus on the application of visualization processes and tools provided by modern, state-of-the-art computer hardware and software.

495020 Medical Interventions (MI)**Credit: 1 Grade Levels: 9-12**

Students investigate a variety of interventions involved in the prevention, diagnosis and treatment of disease as they follow the lives of a fictitious family. The course is a "How-To" manual for maintaining overall health and homeostasis in the body as students explore how to prevent and fight infection; how to screen and evaluate the code in human DNA; how to prevent, diagnose and treat cancer; and how to prevail when the organs of the body begin to fail.

495000 Principles of the Biomedical Sciences (PBS)**Credit: 1 Grade Levels: 9-12**

Student work involves the study of human medicine, research processes, an introduction to bioinformatics, and the use of computer science, mathematics, and information theory to model and analyze biological systems. Students investigate the human body systems and various health conditions including heart disease, diabetes, sickle-cell disease, hypercholesterolemia, and infectious diseases.

495490 Principles of Engineering (POE)**Credit: 1 Grade Levels: 9-12**

Principles of Engineering is a broad-based survey course designed to help students understand the field of engineering and engineering technology and its career possibilities. Students will develop engineering problem-solving skills that are involved in postsecondary education programs and engineering careers. They will explore various engineering systems and manufacturing processes.

490160 Unmanned Aerial Systems (UAS) I**Credit: 1 Grade Levels: 9-12**

Unmanned Aerial Systems spans the spectrum from the basics of aviation, safety and principles of flight to design and manufacturing, industry specific applications, troubleshooting and maintenance, regulations, and mission planning, execution and debriefing.

490170 Unmanned Aerial Systems (UAS) II**Credit: 1 Grade Levels: 10-12**

Unmanned Aerial Systems II continues building on the foundational skills learned in UAS I. Students can earn the FAA 107 Remote Pilot Certificate by the end of the second level.

490180 Unmanned Aerial Systems (UAS) III**Credit: 1 Grade Levels: 11-12**

Unmanned Aerial Systems III helps students prepare for drone-related career and entrepreneurial opportunities while serving as a capstone lab-based course.

490150 Unmanned Aerial Systems (UAS) Flex**Credit: 1 Grade Levels: 9-12**

The UAS Flex course provides a foundational overview of the basics of aviation, safety and principles of flight, troubleshooting and maintenance, regulations, and mission planning, execution and debriefing as in UAS I; with the primary difference being the course is built around the use of a pre-made drone. Students will not be prepared to enter UAS II, or be prepared to take the FAA 107 exam. This course is an approved elective in multiple CTE pathways, and students will explore the industrial applications of drones in the specific pathway in which it is applied.

492670 Web Technologies**Credit: 1 Grade Levels: 9-12**

Web Technologies is an exploration of all of the elements of good web page design. Students will begin by creating web pages using HTML, XHTML and CSS. Students will investigate several Adobe software packages to enhance web sites such as: Photoshop to

create and edit graphics, Flash to create animations and web banners, Fireworks to create and optimize images for the web, and Premiere or other video/audio software to create and edit videos and audio. Students will focus on how to use web design software such as Dreamweaver to create websites. Students will also use multimedia equipment such as digital cameras and camcorders to add this rich media to websites. Students will complete several real-world applications such as Flash videos and web pages for the school or other organizations or businesses. Web Communication using Adobe Dreamweaver® (Associate) certification is encouraged

Trade and Industry

Program Description

Trade and Industry Educational Programs are designed to provide career exploration and preparation for students in a wide array of industrial occupations. Programs include theory-based learning and practicum training in apprentice trades, technical, healthcare, and other industrial and service occupations. Trade and Industry Education prepares students for entry into skilled trades and an opportunity to transition smoothly into postsecondary education. Program design will prepare students for the 21st century global economy and rapidly changing workforce needs. Trade and Industry is the broadest of all career and technical education fields that encompass programs within seven Career Clusters.

Cluster: Architecture and Construction
Pathway: Construction
Program of Study: Construction Technology

Level One	Level Two	Level Three
Construction Fundamentals 494480	Carpentry 494460	<ol style="list-style-type: none"> 1. Construction Lab 490040 2. Cabinetry 494470 3. Electrical 494500 4. HVACR 1 495100 5. Mechanical, Plumbing & Electrical Systems 493840 6. Plumbing 494510 7. Furniture Manufacturing I 494850 8. Furniture Manufacturing II 494870 9. Furniture Manufacturing Lab 490060 10. Career Practicum: T&I AC 490730
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Architecture and Construction
Pathway: Construction
Program of Study: HVAC

Level One	Level Two	Level Three
HVACR I 495100	HVACR II 495110	<ol style="list-style-type: none"> 1. HVACR Lab 490070 2. Cabinetry 494470 3. Carpentry 494460 4. Electrical 494500 5. Mechanical, Plumbing & Electrical Systems 493840 6. Plumbing 494510 7. Career Practicum: T&I AC 490730
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Audio/Video Technology and Film
Pathway: A/V Technology & Film
Program of Study: A/V Tech and Film

Level One	Level Two	Level Three
Fundamentals of Audio/Video Tech & Film 493640	Intermediate Audio/Video Tech & Film 493650	<ol style="list-style-type: none"> Advanced Audio/Video Tech & Film 493660 Audio/Video Tech and Film Lab 493670 Career Practicum: T&I AVTC 490740
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Audio/Video Technology and Film
Pathway: Journalism & Broadcasting
Program of Study: Radio Broadcasting

Level One	Level Two	Level Three
Fundamentals of Radio 493380	Intermediate Radio 493390	<ol style="list-style-type: none"> Advanced Radio 493400 Radio Lab 493410 Career Practicum: T&I AVTC 490740
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Audio/Video Technology and Film
Pathway: Journalism & Broadcasting
Program of Study: Television Production

Level One	Level Two	Level Three
Fundamentals of Television 493420	Intermediate Television 493430	<ol style="list-style-type: none"> Advanced Television 493440 Television Lab 493450 Career Practicum: T&I AVTC 490740
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster:
Pathway: Visual Arts
Program of Study: Advertising and Graphic Design

Level One	Level Two	Level Three
Fundamentals of Advertising and Graphic Design 494150	Intermediate Advertising and Graphic Design 494170	<ol style="list-style-type: none"> Advanced Advertising and Graphic Design 494130 Advertising and Graphic Design Lab 494160 Career Practicum: T&I AVTC 490740
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster:
Pathway: Visual Arts
Program of Study: Commercial Photography

Level One	Level Two	Level Three
Digital Photography I 494350	Digital Photography II 494370	1. Digital Photography III 494380 2. Digital Photography Lab 494360 3. Career Practicum: T&I AVTC 490740
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

**Cluster: Government and Public Administration
Pathway: National Security
Program of Study: Air Force JROTC**

Level One	Level Two	Level Three
Air Force JROTC I 495760	Air Force JROTC II 495770	Air Force JROTC III 495780 Air Force JROTC IV 495880
-or-		
JROTC Health 480950 JROTC Physical Education 485950		
Students can take JROTC Health and Physical Education at any level		

**Cluster: Government and Public Administration
Pathway: National Security
Program of Study: Army JROTC**

Level One	Level Two	Level Three
Army JROTC I 495790	Army JROTC II 495800	Army JROTC III 495810 Army JROTC IV 495890
-or-		
JROTC Health 480950 JROTC Physical Education 485950		
Students can take JROTC Health and Physical Education at any level		

**Cluster: Government and Public Administration
Pathway: National Security
Program of Study: Marine JROTC**

Level One	Level Two	Level Three
Marine JROTC I 495820	Marine JROTC II 495830	Marine JROTC III 495840 Marine JROTC IV 495900
-or-		
JROTC Health 480950 JROTC Physical Education 485950		
Students can take JROTC Health and Physical Education at any level		

**Cluster: Government and Public Administration
Pathway: National Security
Program of Study: Navy JROTC**

Level One	Level Two	Level Three
Navy JROTC I 495850	Navy JROTC II 495860	Navy JROTC III 495870 Navy JROTC IV 495910
-or-		
JROTC Health 480950 JROTC Physical Education 485950		
Students can take JROTC Health and Physical Education at any level		

**Cluster: Health Science
Pathway: Therapeutic Services
Program of Study: Medical Professions**

Level One	Level Two	Level Three
Foundations of Health Care 495350	Anatomy/Physiology 424030	<ol style="list-style-type: none"> 1. Abnormal Psychology 495370 2. First Responder 494140 3. Human Behavior & Disorders 495320 4. Introduction to Medical Professions Expanded 495380 5. Medical Lab (1.0) 490520 6. Medical Lab (.5) 490510 7. Medical Math 495240 8. Medical Procedures Expanded 495390 9. Medical Terminology 495360 10. Pathology 495290 11. Pharmacy Technology Fundamentals 495280 12. Certified Nursing Assistant (CNA) (.5) 490030 13. Certified Nursing Assistant (CNA) (1) 490500 14. Career Practicum: T&I HS 490760
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

**Cluster: Health Sciences
Pathway: Therapeutic Services
Program of Study: Sports Medicine**

Level One	Level Two	Level Three
Foundations of Sports Medicine 494050	Anatomy/Physiology 424030	<ol style="list-style-type: none"> 1. Sports Medicine Injury Assessment 494070 2. First Responder 494140 3. Human Behavior & Disorders 495320 4. Introduction Medical Professions Expanded 495380 5. Medical Math 495240 6. Medical Procedures Expanded 495390 7. Medical Terminology 495360 8. Medical Lab (1.0) 490520 9. Medical Lab (.5) 490510 10. Pathology 495290 11. Pharmacy Technology Fundamentals 495280 12. Career Practicum: T&I HS 490760
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

**Cluster: Health Sciences
Pathway: Therapeutic Services
Program of Study: Emergency Preparedness**

Level One	Level Two	Level Three
Emergency Preparedness I 490050	Emergency Preparedness II 490420	<ol style="list-style-type: none"> 1. Emergency Preparedness Lab (.5) 490530 2. Emergency Preparedness Lab (1) 490540 3. Career Practicum: T&I HS 490760
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Law, Public Safety, Corrections, and Security
Pathway: Law Enforcement Services
Program of Study: Criminal Justice

Level One	Level Two	Level Three
Introduction to Criminal Justice 494620	Foundations of Law Enforcement 494630	1. Crime Scene Investigation 494600 2. Criminal Law 494610 3. First Responder 494140 4. Career Practicum: T&I LPSCS 490770
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Manufacturing
Pathway: Maintenance, Installation, and Repair
Program of Study: Industrial Equipment Technologies

Level One	Level Two	Level Three
Industrial Technologies I 495150	Industrial Technologies II 495170	1. Industrial Technologies Lab 495160 2. Electronics I 494800 3. Electronics II 494820 4. Electronics Lab 494810 5. Machine Tool I 495200 6. Machine Tool II 495220 7. Machine Tool Lab 495210 8. Career Practicum: T&I MFT 490780
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Manufacturing
Pathway: Maintenance, Installation, and Repair
Program of Study: Major Appliance Technology

Level One	Level Two	Level Three
Major Appliance Technology I 495250	Major Appliance Technology II 495270	1. Major Appliance Technology Lab 490080 2. Career Practicum: T&I MFT 490780
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Manufacturing

Pathway: Maintenance, Installation, and Repair

Program of Study: Electronics

Level One	Level Two	Level Three
Electronics I 494800	Electronics II 494820	1. Electronics Lab 490080 2. Career Practicum: T&I MIRP 490780
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Manufacturing

Pathway: Manufacturing Production

Program of Study: Advanced Manufacturing

Level One	Level Two	Level Three
Introduction to Manufacturing 494940	Design for Manufacturing 494950	1. Manufacturing Production Processes 494960 2. Machine Power and Equipment Systems 494970 3. Career Practicum: T&I MFT 490780
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Manufacturing

Pathway: Manufacturing Production

Program of Study: Precision Machine Manufacturing

Level One	Level Two	Level Three
Machine Tool I 495200	Machine Tool II 495220	1. Machine Tool Lab 495210 2. Career Practicum: T&I MFT 490780
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Manufacturing

Pathway: Manufacturing Production

Program of Study: Welding

Level One	Level Two	Level Three
Metal Fabrication 495570	Shielded Metal Arc Welding 495580	1. Gas Metal Arc Welding 495550 2. Gas Tungsten Arc Welding 495560 3. Advanced Shielded Metal Arc Welding 495540 4. Welding Lab 490190 5. Career Practicum: T&I MFT 490780
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Transportation, Distribution, and Logistics
Pathway: Facility and Mobile Equipment Maintenance and Repair

Program of Study: Aviation Technology

Level One	Level Two	Level Three
Aviation I 494250	Aviation II 494260	1. Aviation Lab 490020 2. Career Practicum: T&I TDL 490790
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Transportation, Distribution, and Logistics

Pathway: Facility and Mobile Equipment Maintenance

Program of Study: Medium/Heavy Truck Technology

Level One	Level Two	Level Three
Medium/Heavy Brake/Drive Train 494650	Medium/Heavy Electrical Systems/HVAC 494660	1. Medium/Heavy Steering & Suspension/Hydraulics 494230 2. Medium/Heavy Diesel Engines/CAB 494240 3. Medium/Heavy Truck Lab 490090 4. Career Practicum: T&I TDL 490790
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Transportation, Distribution, and Logistics

Pathway: Facility and Mobile Equipment Maintenance

Program of Study: Power Equipment Technology

Level One	Level Two	Level Three
Power Equipment Technology I 495400	Power Equipment Technology II 495420	1. Power Equipment Technology Lab 490100 2. Career Practicum: T&I TDL 490790
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Transportation, Distribution, and Logistics

Pathway: Facility and Mobile Equipment Maintenance

Program of Study: Automotive Collision Repair Technology

Level One	Level Two	Level Three
Non-Structural Analysis/Repair 494300	Painting & Refinishing 494310	1. Damage Analysis, Estimating and Customer Service 494220 2. Structural Analysis/Repair 494320 3. Automotive Collision Lab 490000 4. Career Practicum: T&I TDL 490790
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

Cluster: Transportation, Distribution, and Logistics

Pathway: Facility and Mobile Equipment Maintenance

Program of Study: Automotive Service Technology

Level One	Level Two	Level Three
Brakes/Manual Drive Train 494180	Automotive Electrical Systems/HVAC 494190	1. Engine Performance /Engine Repair 494200 2. Suspension & Steering/Automatic Transmission 494210 3. Automotive Service Lab 490010 4. Career Practicum: T&I TDL 490790
Industry Recognized Certifications can be referenced at: DCTE Website, Occupational Areas Tab, Trade and Industry 2020-2021 Programs of Study with Codes and Certifications		

MIDDLE SCHOOL COURSES

The DCTE Office of Trade and Industry must approve middle school course offerings.

HIGH SCHOOL COURSES

495370 Abnormal Psychology

Credit: .5 Grade Levels: 9-12

This course provides a basic survey of maladaptive human behavior. Major psychological disorders, their causes, symptom behaviors, cultural influences, and relevant treatment approaches are discussed. Included topics are historical medical background, perspectives of treatment of the mentally ill, fundamental definitions, causes of anxiety disorders, disorders of mood including depression and bipolar disorder, personality disorders, disorders of thought including schizophrenia, substance-related disorders, and domestic violence. Legal, ethical, and social issues relating to the medical professional's role in treating psychological disorders are explored.

494130 Advanced Advertising and Graphic Design

Credit: 1 Grade Levels: 11-12

Advanced Advertising and Graphic Design takes the best, most important and relevant components of Advertising and Graphic Design Introduction and Intermediate courses, and expands them for the serious third year student. Each component is flexible and can be implemented throughout the school year, fulfilling the 120 credit hours of instruction. Each component is essentially intertwined with each other and may be implemented simultaneously.

493660 Advanced A/V Tech & Film

Credit: 1 Grade Levels: 11-12

This independent production based program is designed to allow mastery of the knowledge and skills needed to begin a successful Audio/Video or Film career.

493400 Advanced Radio

Credit: 1 Grade Levels: 11-12

This independent production based program is designed to allow mastery of the knowledge and skills needed to begin a successful radio broadcasting career.

495540 Advanced Shielded Metal Arc Welding

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to unite or separate metal parts by heating, using a variety of techniques and equipment. Emphasis of this course will be the use of shielded metal arc welders.

493440 Advanced Television

Credit: 1 Grade Levels: 11-12

This independent production-based program is designed to allow the student to master the knowledge and skills needed to begin a successful television career

494160 Advertising and Graphic Design Lab

Credit: 1 Grade Levels: 10-12

This production-based program is designed to allow the serious advertising design students time for the development of skills and knowledge needed to execute a comprehensive advertising design product.

495760 Air Force JROTC I

Credit: 1 Grade Levels: 9-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495770 Air Force JROTC II

Credit: 1 Grade Levels: 10-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495780 Air Force JROTC III

Credit: 1 Grade Levels: 11-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495880 Air Force JROTC IV

Credit: 1 Grade Level: 12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495790 Army JROTC I

Credit: 1 Grade Levels: 9-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495800 Army JROTC II

Credit: 1 Grade Levels: 10-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495810 Army JROTC III

Credit: 1 Grade Levels: 11-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495890 Army JROTC IV

Credit: 1 Grade Level: 12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

424030 Anatomy and Physiology

Credit: 1 Grade Levels: 9-12

This course focuses on anatomical and physiological systems of the body as well as the diseases of those systems.

493670 Audio/Video Tech and Film Lab

Credit: 1 Grade Levels: 11-12

Simulated experiences of theory based content from courses 493640 and 493650.

490000 Automotive Collision Lab

Credit: 1 Grade Levels: 9-12

This course provides the student time to build skills and knowledge of the related industry through a series of progressive exercises that cover a broad range of projects.

494190 Automotive Electrical Systems/HVAC

Credit: 1 Grade Levels: 9-12

This course prepares individuals to engage in the diagnosis and repair of electrical/electronic systems. Instruction will include units on general electrical system diagnosis and service.

490010 Automotive Service Lab

Credit: 1 Grade Levels: 9-12

This course provides the student time to build skills and knowledge of the related industry through a series of progressive exercises that cover a broad range of projects.

494250 Aviation I

Credit: 1 Grade Levels: 9-12

This program will include instruction on the general core curriculum required by the Federal Aviation Administration.

494260 Aviation II

Credit: 1 Grade Levels: 10-12

This program will include instruction on the general core curriculum required by the Federal Aviation Administration (FAA). This course will prepare students for the Air Frame and Power Plant School certified by the FAA.

490020 Aviation Lab

Credit: 1 Grade Levels: 9-12

This course provides the student time to build skills and knowledge of the related industry through a series of progressive exercises that cover a broad range of projects.

494180 Brakes/Manual Drive Train

Credit: 1 Grade Levels: 9-12

This course prepares individuals to engage in the diagnosis and repair of brakes. Instruction will include units on hydraulic system diagnosis and repair, drum brake diagnosis and repair, and disc brake diagnosis and repair.

494470 Cabinetry

Credit 1 Grade Levels: 9-12

This instructional course prepares individuals to apply technical knowledge and skills to lay out, fabricate, erect, install, and repair cabinets using hand and power tools.

494460 Carpentry

Credit: 1 Grade Levels: 9-12

This instructional course prepares individuals to apply technical knowledge and skills to lay out, fabricate, erect, install, and repair wooden structures and fixtures using hand and power tools.

490030 Certified Nursing Assistant (CNA) Program

Credit: .5 Grade Levels: 10-12

This certification course is approved as an expansion to the Medical Professions Program of Study only.

490500 Certified Nursing Assistant (CNA) Program

Credit: 1 Grade Levels: 10-12

This certification course is approved as an expansion to the Medical Professions Program of Study only.

494480 Construction Fundamentals

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills in the building, inspecting, and maintaining of structures and related properties. Successful completion will allow students to earn NCCER credential in CORE curriculum. If used as a core requirement for Construction Technology, Welding, Industrial Technologies or other NCCER courses the instructor needs to be NCCER certified.

490040 Construction Lab

Credit: 1 Grade Levels: 9-12

This course provides the student time to build skills and knowledge of the construction industry through a series of progressive exercises that cover a broad range of projects.

494610 Criminal Law

Credit: 1 Grade Levels: 9-12

This course emphasizes the study of substantive criminal law. Selected crimes most likely to be dealt with by the criminal justice professional are explored through discussion, where applicable, of the English Common Law precedents, general modern application, and specific Arkansas Criminal Code.

494600 Crime Scene Investigation

Credit: 1 Grade Levels: 9-12

Prerequisite: Foundations of Law Enforcement (494630)

This course provides students with an overview of the basics of crime scene investigations. Students will gain an understanding of the skills necessary to properly recognize, document, collect, process, and preserve evidence.

494220 Damage Analysis, Estimating and Customer Service

Credit: 1 Grade Levels: 9-12

This course will educate the student on how to assess and analyze collision damaged vehicles. The student will also learn the fundamentals of damage patterns and different types of damage. Hand written and computer generated estimates using the latest estimating software and resources will be taught.

494950 Design for Manufacturing

Credit: 1 Grade Levels: 10-12

In this course, students will apply the technologies that are found in modern clean, production environments. Students study effective and energy efficient control of pumping, conveyors, piping, pneumatic and hydraulic control systems. Students apply total quality management to production design to assure quality. Students also focus on properties of materials and material testing, creating documentation to support designs, examining properties and justifying material selections based on properties. Students learn that old products become the new raw materials for new products.

494350 Digital Photography I

Credit: 1 Grade Levels: 9-12

This core instructional program prepares individuals to effectively communicate ideas and information to business and consumer audiences and record events and people via film, still or video photography.

494370 Digital Photography II

Credit: 1 Grade Levels: 10-12

This core production based instructional program allows the photography student to implement artistic techniques to effectively communicate ideas and information to business and consumer audiences and record events and people via film, still or video photography.

494380 Digital Photography III

Credit: 1 Grade Levels: 11-12

This independent production based program is designed to provide the advanced photography student with knowledge and highly advanced skills for a comprehensive career in photography.

494360 Digital Photography Lab

Credit: 1 Grade Levels: 10-12

This production-based program will allow the serious photography student time for the development of skills and knowledge needed to produce comprehensive photography products.

494500 Electrical
Credit: 1 Grade Levels: 9-12

This course prepares individuals to apply technical knowledge and skills to install and repair residential electrical systems.

494800 Electronics I
Credit: 1 Grade Levels: 9-12

Electronics I is an applied course in the manufacturing cluster for students interested in learning more about careers as an electronic technician, maintenance technician, electromechanical technician, and manufacturing engineer. This course covers basic electrical and mechanical components of electronic systems with instrument controls and embedded software designs.

494820 Electronics II
Credit: 1 Grade Levels: 9-12

Electronics II is a multi-disciplinary study to develop specialized and highly trained technicians dealing with the integration of mechanical devices, actuators, sensors, intelligent controllers and computers.

490080 Electronics Lab
Credit: 1 Grade Levels: 9-12

Simulated experiences of theory based content from courses 494800 and 494820.

494200 Engine Performance/ Engine Repair
Credit: 1 Grade Levels: 9-12

This course prepares individuals to engage in the diagnosis and repair of engine performance. Instruction will include units on general engine diagnosis and computerized engine controls diagnosis and repair.

490050 Emergency Preparedness I
Credit: 1 Grade Levels: 11-12

This course introduces a career in Emergency Preparedness that can lead to employment. Emergency Preparedness I course includes, but not limited to, fire history, emergency responder, health, safety, situational awareness, personal protective equipment; governing agencies, nutrition and physical fitness.

490420 Emergency Preparedness II
Credit: 1 Grade Levels: 11-12

This course provides the foundations and hands-on training that will lead to a career in Emergency Preparedness that can lead to employment, after further instruction, to a career as an Emergency Responder or other disciplines in the Emergency Preparedness realm. It includes, but is not limited to, search and rescue, utility ropes and knots, forcible entry, ladders, ventilation, water hose characteristics, fire attack, disaster simulations and the Candidate Physical Ability Test 2 (CPAT).

494140 First Responder
Credit: 1 Grade Levels: 9-12

This course introduces students to emergency medical technician occupational skills. Prior approval must be obtained from the Trade and Industry Sciences Office before this course is implemented.

495350 Foundations of Health Care
Credit: 1 Grade Levels: 9-12

This course is designed to introduce students to medical professions and the basic foundational skills for first aid and the treatment of patients. Along with Anatomy and Physiology this is a foundation core course for subsequent education and training in health services. This course is a revised combination of Introduction to Medical Professions and Medical Procedures.

494630 Foundations of Law Enforcement
Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to perform the duties of police and public security officers, including patrol and investigative activities, traffic control, crowd control, and public relations.

494050 Foundations of Sports Medicine
Credit: 1 Grade Levels: 9-12

This course provides students with a general overview of sports medicine and its history from the perspective of the healthcare community that includes injury prevention, treatment, rehabilitation, psychosocial, and administration concerns. Students will gain an understanding of sports medicine and the role it plays in the athletic community.

494150 Fundamentals of Advertising and Graphic Design

Credit: 1 Grade Levels: 9-12

This instructional program in the applied visual arts is a core course and prepares individuals to use artistic techniques to effectively communicate ideas and information to business and consumer audiences via illustrations and other forms of printed media.

493640 Fundamentals of A/V Tech & Film

Credit: 1 Grade Levels: 9-12

Students in this core program will learn the basics of film and television production as well as other forms of audio-video communication such as animation, graphics, and sound production for video. They will also study the history of audio- video technology and film as well as career development and employment in this pathway.

493380 Fundamentals of Radio

Credit: 1 Grade Levels: 9-12

Principles of announcing/audio engineering: study of voice, diction, pronunciation and delivery will be explored in this course. Experience in various types of announcing, concepts and techniques of sound production, including the coordinating and directing processes, hands-on experience with equipment, sound sources, and direction of talent, equipment maintenance and operations.

493420 Fundamentals of Television

Credit: 1 Grade Levels: 9-12

The core program is designed to give practical knowledge in preparation for the pursuit of a career in television.

494850 Furniture Manufacturing I

Credit: 1 Grade Levels: 9-12

This course will introduce the beginning furniture and cabinetmaking student to the various stages of construction and assembly of wood products and related materials. This course is intended to provide students with the basic knowledge and skills necessary to design, construct, and finish furniture and/or cabinets in the woodworking industry.

494870 Furniture Manufacturing II

Credit: 1 Grade Levels: 9-12

This course is a continuation of Furniture Manufacturing I. This course provides intermediate furniture and cabinetmaking students with the necessary knowledge and skills to pursue employment in related industries.

490060 Furniture Manufacturing Lab

Credit: 1 Grade Levels: 11-12

Simulated experiences of theory based content from courses 494850 and 494870.

495550 Gas Metal Arc Welding

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to unite or separate metal parts by heating, using a variety of techniques and equipment. Emphasis of this course will be the use of gas metal arc welders.

495560 Gas Tungsten Arc Welding

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to unite or separate metal parts by heating, using a variety of techniques and equipment. Emphasis of this course will be the use of gas tungsten arc welders.

495320 Human Behavior and Disorders

Credit: .5 Grade Levels: 9-12

This course focuses on normal behavior and personality, abnormal behavior and personality, and behavior disorders and the therapies used to treat those disorders and abnormalities.

495100 HVACR I

Credit: 1 Grade Levels: 9-12

This course prepares individuals to apply technical knowledge and skills to repair, install, service, and maintain the operating condition of heating, air conditioning, and refrigeration systems.

495110 HVACR II

Credit: 1 Grade Levels: 10-12

This course prepares individuals to apply technical knowledge and skills to repair, install, service, and maintain the operating condition of heating, air conditioning, and refrigeration systems.

490070 HVACR Lab

Credit: 1 Grade Levels: 9-12

This course provides the student time to build skills and knowledge of the related industry through a series of progressive exercises that cover a broad range of projects.

495160 Industrial Equipment Technologies Lab

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute comprehensive industrial equipment maintenance.

495150 Industrial Technologies I

Credit: 1 Grade Levels: 9-12

The student will be trained to perform a variety of skills to repair, install, fabricate, set up, adjust, and do preventive maintenance to industrial machinery and equipment.

495170 Industrial Technologies II

Credit: 1 Grade Levels: 10-12

The student will be trained to perform a variety of skills to repair, install, fabricate, set up, adjust, and do preventive maintenance to industrial machinery and equipment.

494170 Intermediate Advertising and Graphic Design

Credit: 1 Grade Levels: 10-12

This is a core course emphasizing the integration of computer skills and knowledge of software used in the market place.

493650 Intermediate A/V Tech & Film

Credit: 1 Grade Levels: 10-12

This core program is designed to develop high level technical skills in preparation for a career in Audio/Video and Film Production.

493390 Intermediate Radio

Credit: 1 Grade Levels: 10-12

This core program is designed to develop high level technical skills in preparation for a career in radio broadcasting.

493430 Intermediate Television

Credit: 1 Grade Levels: 10-12

The core course will provide an understanding of production principles and experience with the video camera, lighting instruments and techniques, microphones, script creation, and editing. Students will perform assignments on camera as well as studio and control room duties.

494620 Introduction to Criminal Justice

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to perform the duties of police and public security officers, including patrol and investigative activities, traffic control, crowd control, and public relations.

495380 Introduction to Medical Professions

Expanded Credit: .5 Grade Levels: 9-12

This course is designed as an extension of Introduction to Medical Professions. The course provides students with a general overview of the more crucial content areas of the health science technology education program core courses. Areas covered are medical terminology, medical math, human growth and development, processes of disease, and employability skills needed within the health care industry. This course is recommended for students who will not have the opportunity to take any additional health science technology education courses other than Introduction to Medical Professions.

494940 Introduction to Manufacturing

Credit: 1 Grade Levels: 9-12

This course will engage students in the use of modern technologies in the design and improvement of products. Students will use three-dimensional CAD software in the creation and analysis process. Students will document designs using standards set by industry for design documentation. Students will implement methods of green production and just-in-time component supply which allow for the lowest cost and highest quality products. Students will design and troubleshoot data acquisition, programmable logic control, process monitoring, automation and robotic systems. Students will incorporate sensing and vision systems, utilizing cameras and sensors to control automated systems.

480950 JROTC Health

Credit: 1 Grade Levels: 9-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

485950 JROTC Physical Education

Credit: 1 Grade Levels: 9-12

The JROTC physical education program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495200 Machine Tool I

Credit: 1 Grade Levels: 9-12

This course is designed to provide students with a basic understanding of the precision machining processes used in industry, manufacturing, maintenance, and repair. The course instructs students in industrial safety, terminology, tools and machine tools, measurement and layout. Students will become familiar with the setup and operation of power saws, drill press, lathe, milling machine, grinders and receive an introduction to CNC (computer controlled) machines.

495220 Machine Tool II

Credit: 1 Grade Levels: 9-12

This course is a more in-depth study of skills learned in Machine Tool I, with a stronger focus on CNC setup/operation/programming. Classroom activities will concentrate on precision set-up and inspection work, as well as machine shop calculations. Students will develop skills in advanced machining and measuring parts involving tighter tolerances. A continued focus on safety will also be presented.

495210 Machine Tool Lab

Credit: 1 Grade Levels: 9-12

Simulated experiences of theory based content from courses 495200 and 495220.

495250 Major Appliance Technology I

Credit: 1 Grade Levels: 9-12

This independent production based course will provide the appliance repair student with the practical knowledge and highly advanced skills for a comprehensive career in appliance repair.

495270 Major Appliance Technology II

Credit: 1 Grade Levels: 9-12

This independent production based course will provide the appliance repair student with the practical knowledge and highly advanced skills for a comprehensive career in appliance repair.

490080 Major Appliance Technology Lab

Credit: 1 Grade Levels: 9-12

This course provides the student time to build skills and knowledge of the related industry through a series of progressive exercises that cover a broad range of projects.

495260 Manufacturing and Production Lab

Credit: 1 Grade Levels: 9-12

This course provides the student time to build skills and knowledge of the manufacturing industry through a series of progressive exercises that cover a broad range of projects.

494970 Manufacturing Power & Equipment Systems

Credit: 1 Grade Levels: 10-12

Students will create plant designs to process and automatically assemble materials into new products. Students follow the process of developing and producing a new product from prototype to final product. They will accomplish this by creating a production flow plan that allows for the mass production of the product. Students will analyze and evaluate all aspects of the design and production processes with an emphasis on clean, lean and green production. Students will utilize data acquisition, quality control processes and Six Sigma methodology to control production.

494960 Manufacturing Production Processes

Credit: 1 Grade Levels: 10-12

Students will design cost-effective work cells incorporating automation and robotics to improve quality of final products. The advanced production in this course depends on the use and coordination of information, automation, network systems, vision and sensing systems. Students will design and create mechatronic systems and automated tooling to accomplish these advanced tasks. Students produce authentic documentation about their cyber-mechanical systems and the integration with data to control and monitor processes.

495820 Marine JROTC I

Credit: 1 Grade Levels: 9-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495830 Marine JROTC II
Credit: 1 Grade Levels: 10-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495840 Marine JROTC III
Credit: 1 Grade Levels: 11-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495900 Marine JROTC IV
Credit: 1 Grade Level: 12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

493840 Mechanical, Plumbing and Electrical Systems
Credit: 1 Grade Level: 11-12

This is a foundation course to combine electrical, plumbing and HVAC courses into a one credit introductory course.

493670 Media Communications Lab
Credit: 1 Grade Levels: 10-12

This production-based program is designed to allow the audio/video student studio time for the development of skills needed to execute a comprehensive media career.

495230 Medical Clinical Internship/Specialization (.5 Credit)
Credit: .5 Grade Levels: 11-12

This is an educational program that offers Specialized Training in a health related field. It may also alternate in-school instruction and supervised on-the-job training activities in health science technology occupations.

495310 Medical Clinical Internship/Specialization
Credit: 1 Grade Levels: 11-12

This is an educational program that offers Specialized Training in a health related field. It may also alternate in-school instruction and supervised on-the-job training activities in health science technology occupations.

490520 Medical Lab (1.0)
Credit: 1 Grade Levels: 11-12

Simulated experiences of theory based content from courses 493350 and 424030.

490510 Medical Lab (.5)
Credit: .5 Grade Levels: 11-12

Simulated experiences of theory based content from courses 493350 and 424030.

495240 Medical Math
Credit: 1 Grade Levels: 9-12

This course is designed to increase students' ability to identify, solve, and apply mathematical principles involving temperature, weights, and measures used in the healthcare delivery system.

495330 Medical Procedures
Credit: .5 Grade Levels: 9-12

Medical Procedures is a one-unit course that helps students develop specific and general skills needed by the health science technology professional. *Will be discontinued after 2018-2019 School Year (Replaced by Foundations of Health Care)*

495390 Medical Procedures Expanded
Credit: .5 Grade Levels: 9-12

This course focuses on the specific skills needed in several different areas of health care. Students are able to build upon the skills gained in the Medical Procedures course. The different areas addressed are dental assisting, laboratory assisting, medical assisting, nurse assisting, physical therapy assisting, and veterinary assisting.

495360 Medical Terminology
Credit: .5 Grade Levels: 9-12

Medical Terminology assists students in developing the language used for communication in the healthcare profession.

494650 Medium/Heavy Brake/Drive Train
Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to diagnose and repair diesel equipment in on-road and off-road vehicles and machinery.

494660 Medium/Heavy Electrical Systems/HVAC

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to diagnose and repair diesel equipment in on-road and off-road vehicles and machinery. Advanced on-the-job training may be included.

494230 Medium/Heavy Steering & Suspension/Hydraulics

Credit: 1 Grade Levels: 9-12

This course prepares individuals to apply technical knowledge to diagnose and repair steering & suspension/hydraulics in trucks, buses, and other commercial and industrial vehicles.

494240 Medium/Heavy Diesel Engines/CAB

Credit: 1 Grade Levels: 9-12

This course prepares individuals to apply technical knowledge to diagnose and repair diesel engines and CAB in trucks, buses, and other commercial and industrial vehicles.

490090 Medium/Heavy Truck Lab

Credit: 1 Grade Levels: 9-12

This course provides the student time to build skills and knowledge of the related industry through a series of progressive exercises that cover a broad range of projects.

495570 Metal Fabrication

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills in the building, inspecting, and maintaining of structures and related properties. Successful completion will allow students to earn NCCER credential in CORE curriculum. This may be taught as a stand-alone elective. If used as a core requirement for Construction Technology, Welding, Industrial Technologies or other NCCER courses the instructor needs to be NCCER certified.

495850 Navy JROTC I

Credit: 1 Grade Levels: 9-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495860 Navy JROTC II

Credit: 1 Grade Levels: 10-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495870 Navy JROTC III

Credit: 1 Grade Levels: 11-12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

495910 Navy JROTC IV

Credit: 1 Grade Level: 12

The JROTC program stresses military discipline, with a curriculum that emphasizes study of military science and military history.

494300 Non-Structural Analysis/Repair

Credit: 1 Grade Levels: 9-12

This course concentrates on analysis and repair of the nonstructural components as they pertain to collision repair.

494310 Painting/Refinishing

Credit: 1 Grade Levels: 9-12

This course concentrates on painting and refinishing as they pertain to collision repair. The course includes causes and correction of finish defects.

495290 Pathology

Credit: .5 Grade Levels: 9-12

This course is devoted to the exploration of human pathology. Pathology is the branch of medical science that studies the causes, nature, and effects of diseases. This course of study begins with an introduction to pathology-related terms, predisposing factors of diseases, the relationship between diagnosis and prognosis, and disease treatments. Following the introduction, the course delves into a range of pathology-related topics and their relationships to specific systems of the human body. The topics include signs and symptoms of pathology, the effects of trauma, the effects of age, and characteristics of common diseases.

495280 Pharmacy Technology Fundamentals

Credit: 1 Grade Levels: 9-12

Provides an overview of the pharmacy technology field and develops the fundamental concepts and principles necessary for successful participation in the pharmacy field.

494510 Plumbing

Credit: 1 Grade Levels: 9-12

This course prepares individuals to apply technical knowledge and skills to lay out, assemble, install, and maintain piping fixtures and piping systems, hot water, heating, cooling, and drainage systems.

495400 Power Equipment Technology I

Credit: 1 Grade Levels: 9-12

Power Equipment Technology I & II prepares students for careers in the Power Equipment industry. The course sequence focuses on duties and tasks performed by professionals in power equipment repair occupations, as well as pre-employment and employment skills.

495420 Power Equipment Technology II

Credit: 1 Grade Levels: 9-12

Power Equipment Technology I & II prepares students for careers in the Power Equipment industry. The course sequence focuses on duties and tasks performed by professionals in power equipment repair occupations, as well as pre-employment and employment skills.

490100 Power Equipment Technology Lab

Credit: 1 Grade Levels: 9-12

This course provides the student time to build skills and knowledge of the transportation industry through a series of progressive exercises that cover a broad range of projects. Simulated experiences of theory based content from courses 495400 and 495420.

493410 Radio Lab

Credit: 1 Grade Levels: 10-12

This production-based program is designed to allow the broadcasting student studio time for the development of skills needed to execute a comprehensive radio career.

495580 Shielded Metal Arc Welding

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to unite or separate metal parts by heating, using a variety of techniques and equipment. Emphasis of this course will be the use of shielded metal arc welders.

494070 Sports Medicine Injury Assessment

Credit: 1 Grade Levels: 9-12

Prerequisite: 494050 Foundations of Sports Medicine

This course provides students with the skills needed to evaluate sports related injuries. Students will gain an understanding of common injuries that affect athletes, injury assessment, and treatment.

494320 Structural Analysis/Repair

Credit: 1 Grade Levels: 10-12

This course concentrates on analysis and repair of the structural components as they pertain to collision repair.

494210 Suspension & Steering/Automatic Transmissions

Credit: 1 Grade Levels: 9-12

This course prepares individuals to engage in the diagnosis and repair of suspension and steering. Instruction will include units on steering systems diagnosis and repair; suspension systems diagnosis and repair; wheel alignment diagnosis, adjustment, and repair; and wheel and tire diagnosis and repair.

493450 Television Lab

Credit: 1 Grade Levels: 10-12

This production-based program is designed to allow the television student studio time for the development of skills needed to execute a comprehensive TV career.

490190 Welding Lab

Credit: 1 Grade Levels: 9-12

This course provides the student time to build skills and knowledge of the related industry through a series of progressive exercises that cover a broad range of projects.

Career Readiness and Work Based Learning (WBL)

Program Description

The Career Readiness\Work-Based Learning office provides a continuum of courses to assist students in planning for a successful career beyond high school.

Career Education instruction is delivered through the following major components:

- Exploring the sixteen career clusters
- Identifying students' personal interests and strengths
- Analyzing postsecondary and occupational career pathways
- Developing employability and 21st century skills
- The opportunity to apply career knowledge and skills through Work-Based Learning.

MIDDLE SCHOOL COURSES (Grade Levels 7-8)

Course Code	Middle School Elective	Credit	7th	8th
399280	Career Development	n/a	X	X

399280 Career Development

Credit: Grade Levels 7-8

Career Development is an examination of careers using the 16 career clusters and other technology applications for students to analyze career planning, preparation, research and development. Students will be knowledgeable about the world of work, with job shadowing and career resource speakers available to offer career options, personal skills, aptitudes, and expectations to complete the education and training requirements to enter into a future career. Students will begin the development of the Student Success Plan.

HIGH SCHOOL COURSES (Grade Levels 9-12)

Course Code	High School Offerings	Credit	9th	10th	11th	12th
493850	Keystone	.5	X	X		
493900	Career Readiness	.5	X	X	X	X
493880	College and Career Readiness *	.5	X	X	X	X
493910	Work Ready* (Formerly known as Career Ready 101 online)	.5	X	X	X	X
493860	Internship	1		X	X	X
490600	Career Practicum - AG: Agriculture, Food, and Natural Resources	1			X	X
490610	Career Practicum - Bus: Finance	1			X	X
490620	Career Practicum - Bus: Hospitality and Tourism	1			X	X
490630	Career Practicum - Bus: Management and Administration	1			X	X
490640	Career Practicum - Bus: Marketing Sales and Services	1			X	X
490650	Career Practicum - Bus: Transportation, Distribution and Logistics	1			X	X
490660	Career Practicum - FCS: Education and Training	1			X	X
490670	Career Practicum - FCS: Hospitality and Tourism	1			X	X

490680	Career Practicum - FCS: Human Services	1			X	X
490280	Career Practicum – FCS: Arts, AV/Technology & Communications	1			X	X
490690	Career Practicum - STEM: Architecture and Constructions	1			X	X
490700	Career Practicum - STEM: Health Science	1			X	X
490710	Career Practicum - STEM: Information Technology	1			X	X
490720	Career Practicum - STEM: STEM Cluster	1			X	X
490730	Career Practicum - T&I: Architecture and Construction	1			X	X
490740	Career Practicum - T&I: Arts, Audio/Video Technology and Communications	1			X	X
490760	Career Practicum - T&I: Health Science	1			X	X
490770	Career Practicum - T&I: Law, Public Safety, Corrections and Security	1			X	X
490780	Career Practicum - T&I: Manufacturing	1			X	X
490790	Career Practicum - T&I: Transportation, Distribution and Logistics	1			X	X
490110	Pre-Apprenticeship I	1			X	X
490120	Pre-Apprenticeship II	1			X	X
490130	Pre-Apprenticeship III	1			X	X
490140	Pre-Apprenticeship IV	1			X	X

493850 Keystone

Credit: .5 Grade Levels 9-10

The Keystone course is a one-semester course offered in grades 9-10. This course is designed to help ninth and tenth graders successfully navigate high school. Students will receive instruction in self-realization, interpersonal skills, study skills, self-management skills, goal setting, and planning strategies. This transition course will create a sense of belonging among students by having them become productive citizens of their school and community. Students will receive guidance in investigating their own interests, values, and aptitudes in relation to possible Career Pathways with life-long learning and will begin developing a flexible education plan for high school and beyond.

493900 Career Readiness

Credit: .5 Grade Levels: 9-12

Career Readiness is a semester course recommended for students in grades 9-10. It focuses on career preparation skills, interpersonal skills, problem solving, critical thinking skills, teamwork, self-management, communications skills, and technology skills. Emphasis will be placed on employable skills in job application and job search. Each student will develop a career portfolio.

493880 College and Career Readiness

Credit: .5 Grade Levels: 9-12

College and Career Readiness is a semester course recommended for students in grades 11-12. The course content shall reflect postsecondary education and training opportunities for success at the college level or employable level. It is designed to prepare students for the actions necessary to pursue their career. It also focuses on WorkKeys skills including Graphic Literacy, Applied Math, and Workplace Documents. The online computer-based WorkKeys curriculum is to prepare students for the National Career Readiness Certificate. The assessment is provided free of charge to students in public education under the state contract.

493910 Work Ready

Credit: .5 Grade Levels 9-12

This is a course offered online for high school students in grades 9-12. However, it is highly recommended for students in grades 11-12 due to the 16 years of age requirement for the WorkKeys assessment. The curriculum for this course is the same as Career Readiness (493900) with the addition of the WorkKeys skills of Graphic Literacy, Applied Math, and Workplace Documents from (493880).

493860 Internship**Credit: 1 Grade Levels: 10-12**

The Internship course is a paid or unpaid experiential work-based learning experience that integrates knowledge and theory learning in the classroom with practical application and skills development in a professional setting. The course will serve as an introductory work experience course for 10-12 grade students. A student may enroll in the Internship course for up to two years and earn a maximum of four credits. This course is eligible for an employer tax credit, and it is not eligible for completer status. The Internship course includes both classroom instruction and worksite experience. Internships give students the opportunity to gain valuable applied experience and make connections in professional fields, and it gives employers the opportunity to guide and evaluate talent (2018 Advance CTE, Career Technical Education Glossary). An Internship agreement and training plan must be developed for each student. The WBL Coordinator and the workplace supervisor will evaluate the student. The students must be employed prior to enrolling in the class or at the end of the second week of school. Students who are not employed by the end of the second week must be withdrawn from the class.

**Please refer to the Internship Instructor Manual for specific details on the DCTE Website.*

(Multiple – See Above Table) Career Practicum**Credit: 1 Grade Levels 11-12**

The Career Practicum course is offered to students in grades 11-12. To be eligible, students must:

- be at least 16 years of age.
- be in good academic standing according to the school.
- have completed at least two courses in an approved Program of Study.
- have a student success plan that includes courses in an approved Program of Study.

Career Practicum is designed to assist students in their specific CTE career pathway areas and to help them successfully transition from school to career. The student must have completed at least two courses in a chosen CTE Program of Study. This course is eligible for an employer tax credit and may count toward becoming a completer. Career Practicum is a worksite-learning option, designed for high school students, that includes a combination of classroom instruction and paid or unpaid worksite training ending with an approved credential. A student may enroll in a Career Practicum course for up to two years and earn a maximum of four credits.

This course is a structured learning experience at the worksite for a specific timeframe that leads to a career path (Workforce Innovation and Opportunity Act). It requires high-quality supervised learning opportunities for students at both the worksite and integrated learning in the classroom. The structure includes a strong business partnership that links the course and its participants to current resources, information, and guidance from industry professionals. The student, Work-Based Learning Coordinator, and worksite supervisor must develop a detailed training plan. Guidelines for this course must be followed and documented. The WBL Coordinator and worksite supervisor will evaluate the student. The students must be employed prior to enrolling in the class or at the end of the second week of school. Students who are not employed by the end of the second week must be withdrawn from the class. An instructor must have the 412 Career Preparation Endorsement.

**Please refer to the Career Practicum Instructor Manual for specific details on DCTE Website.*

Course Credits for Internship and Career Practicum

Students can earn up to four (4) credits, in a two-year period. To earn two (2) credits PER YEAR, a student will need 36 hours of classroom instruction (at least 1 hour per week) and 240 work hours (approximately 7 hours per week). One (1) credit may be granted for an entire year for students that work 120 hours throughout the year and are in class at least 36 hours.

Hours of Classroom Instruction - Semester	Hours of Work Experience – Semester	Credits Earned
Minimum 18 hours	120 hours	1 credit
Minimum 36 hours	240 hours	2 credits
Minimum 54 hours	360 hours	3 credits
Minimum 72 hours	480 hours	4 credits

Classroom hours should include all students and should incorporate discussions about soft skills, employability skills, and pre-employment and employment documents.

Hours of work experience should be on the job site working weekly to meet the above required hours.

WBL COORDINATOR SUPERVISION PERIOD REQUIRED FOR INTERNSHIP AND CAREER PRACTICUM

1. One supervision period for 1-25 students
2. Two supervision periods for 26-50 students
3. Three supervision periods for 51 or more students.
The conference/planning period may count as one of the three (3) supervision periods.

- 490110 Pre-Apprenticeship I**
- 490120 Pre-Apprenticeship II**
- 490130 Pre-Apprenticeship III**
- 490140 Pre-Apprenticeship IV**

Credit 1: Grade Levels: 11-12 (At Least 16 years of age)

The Pre-Apprenticeship program is an unpaid or paid program designed to prepare students for entry into a Department of Labor registered apprenticeship program. Instruction may vary in length and scope and may include basic skills training, academic skills remediation, or an introduction to the industry. Completers of this program may be given preferential consideration for entry into an apprenticeship program and/or applied time served or credits earned toward fulfilling program requirements 2018 Advanced CTE, Career Technical Education Glossary).

The Pre-Apprenticeship must be sponsored by at least one Department of Labor registered apprenticeship program. Pre-Apprenticeship programs must follow the guidelines provided by the Arkansas Apprenticeship Coordination Steering Committee, the Arkansas Department of Commerce, and Office of Skills Development. An instructor must have the 412 Career Preparation Endorsement.

**Please refer to the Pre-Apprenticeship Instructor Manual for specific details on DCTE Website.*

Course Credits for Pre-Apprenticeship

Students can earn up to four (4) credits, in a two-year period. The rate at which the credits are earned is determined by the Department of Labor Registered Apprenticeship partner.

WBL COORDINATOR SUPERVISION PERIOD REQUIRED FOR PRE-APPRENTICESHIP

1. One supervision period for 1-25 students
2. Two supervision periods for 26-50 students
3. Three supervision periods for 51 or more students.
The conference/planning period may count as one of the three (3) supervision periods.

JOBS FOR ARKANSAS GRADUATES (JAG)

Program Description

Jobs for Arkansas Graduates is a broad based School-to-Work program designed to assist students whose ability to successfully graduate from high school and obtain meaningful employment is in jeopardy. The program's goal is to identify students with a need for modest interventions in order to ensure graduation (or GED) and to prepare them for workplace success. The JAG program provides one year of follow-up to monitor the student's outcomes through data recording of graduation dates, civil and military job placement, career, and college success.

Teacher Qualifications

The "JAG Specialist" is to be secondary certified in Career and Technical Education or any core academic area and endorsed through the completion of program management training developed and approved by Division of Career and Technical Education (DCTE). Training includes New Specialist Training (one to two days) and National Data Management System training (one day). Training leads to the 413 Special Populations endorsement. Be able to have the ability to establish and maintain relations with industries in the community. Demonstrate proficiency in computers and written communication skills. Registration can be found on the DCTE website under Professional Development.

Teacher Contract Length

It is strongly recommended that, during the first year of operation, the specialist be employed on a contract of a minimum of 215 days. It also is strongly recommended that during each subsequent year, the specialist be employed on a contract of a minimum of 225 days. Arkansas JAG recommends that the specialist be provided one period for Data Entry and Employer Marketing/Job Development for every 25 in school participants. The model requires 12 months of follow-up after graduation, which means monthly contact with each participant beginning the month of June following completion of senior year and at least six contacts with the participant's employer/school/military recruiter.

Funding

New program start-up equipment funds are available. Districts may be eligible for Division of Workforce Service grants for high poverty areas. Corporate start-up grants are often available.

Eligible Students

Career and Technical students with two or more identified barriers may apply for acceptance into the JAG class. A JAG class roster typically has an average of five barriers. Students may be identified by the school advisory committee as eligible for the program due to existing barriers to graduation. The specialist/teacher or administrator identifies a student's barriers prior to placement into the program. JAG students should have an identified career and technical focus/major and have completed at least one unit and be enrolled in a second unit of the identified career focus/major.

Class Size and Credits

"Standards of Accreditation", Arkansas Public Schools states: "in grades seven through twelve, a teacher shall not be assigned more than one hundred fifty (150) students daily and an individual class shall not exceed thirty (30) students, provided that, in exceptional cases or for courses that lend themselves to large group instruction, these ratios may be increased." (JAG is not an exceptional case). Large JAG classes have proven to be less practical and effective because they place limitations on the types and quality of hands-on, individualized, or other class activities.

The JAG model requires 35-45 students to be the maximum in the in-school phase. The JAG program may encompass several class periods, thus enforcing the Standards of Accreditation for class size. Programs in alternative schools can request a waiver to lower the student load. All students in the JAG class must be recorded in the JAG electronic data management system roster in order to hold the integrity of the Jobs for America's Graduates guidelines.

Class periods shall conform to the minimum class hours established by the Standards for Accreditation of Public Schools and North Central Association (NCA): (NCA: 120 hours = 1 unit; 60 hours = ½ unit)

One unit of credit per year is to be given for JAG participants in the High School program. Depending on the application of the model and the particular need or risk, a student may be identified for placement in the JAG program for multiple years, starting in Middle School. JAG may be utilized as a related option of any program of study. JAG is not a stand-alone program of study or career focus/major.

JAG Career Association

The JAG Career Association embodies a fundamental purpose of the JAG program: to provide motivation and practical strategies to help young people to succeed both in school and on the job. The Career Association is a student-led organization for career-minded students who are interested in preparing themselves to enter the workforce and are enrolled in a program that is affiliated with the Jobs for America's Graduates National Network.

Each student enrolled in the local JAG program is automatically a member of the Career Association.

Three levels exist in the Career Association – national, state, and local chapter (the JAG program in your school).

JAG believes that programs with successful Career Association chapters will experience a lower school dropout rate and a higher retention rate in the program. The Career Association chapter is a support system that most members need and want.

The activities of the Career Association are integral to the instructional program and should be perceived as co-curricular. Since all Career Association activities are offered to develop, practice, and refine skills necessary for personal, academic and career success, chapter activities enhance classroom learning, thus are considered co-curricular.

Local Career Association chapters provide activities to help members develop the confidence and competencies needed to stay in school through graduation and achieve a successful transition from school to the work- place. The chapter advisor (JAG Specialist) is held accountable for implementing the Career Association and using it effectively to achieve five (5) fundamental yet powerful goals of leadership development, career development, social awareness, civic awareness, and community service. JAG suggests each goal area have a committee with a President, Vice President or Chairperson leading that committee.

Middle School Courses:

Course Code	DCTE Middle School Electives	Units of Credit	7 th	8 th	9 th	10 th	11 th	12 th
399290	JAG Middle School	0	X	X				
399350	JAG Middle School ALTERNATIVE	0	X	X				

This course may be taken in both 7th and 8th grades. Must receive prior approval from DCTE Office of Special Populations. Traditional and Alternative Programs at one school are considered two programs and must each have prior approval.

High School Courses:

Course Code	Core Requirements	Units of Credit	7 th	8 th	9 th	10 th	11 th	12 th
493780	JAG I (Multi-Year Program)	1			X	X	X	X
493790	JAG II (Multi-Year Program)	1				X	X	X
493770	JAG Senior Applications	1						X
493760	JAG Multi-Year ALTERNATIVE	1			X	X	X	X
493800	JAG Work-Based Learning	1				X	X	X

These courses may be taken in 9th – 12th grades (as indicated). All JAG courses must receive prior approval from DCTE Office of Special Populations. It is expected that a JAG program will expand to accommodate needs among student populations. Adding a Senior Applications program requires approval for an addition to an already established JAG program. Traditional and Alternative Programs at one school are considered two programs and must have prior approval. JAG Work-Based Learning follows the course credit guidelines for the DCTE Internship program. Students must be concurrently enrolled in JAG I, JAG II, JAG Senior Applications, or JAG Multi- Year Alternative program in order to be enrolled in JAG Work-Based Learning.

Middle School Courses:

399290 JAG Middle School

Credit: 0 Grade Levels: 7-8

Middle School Program serves seventh and eighth grade students. Middle school staff and administrators identify students at risk of not reaching their potential or leaving school prematurely.

(Must have DCTE approval prior to implementation)

399350 JAG Middle School ALTERNATIVE

Credit: 0 Grade Levels: 7-8

JAG Middle School AE Program serves grades seventh through eighth students. The program is designed to serve students in alternative learning environments. Middle school staff and administrators identify students at risk of not reaching their potential or leaving school prematurely.

High School Courses: (Must have DCTE approval prior to implementation)

493780 JAG Multi-Year I

Credit: 1 Grade Levels: 9-12

JAG utilizes the National Jobs for America's Graduates model and curriculum. It is designed to assist career and technical students whose ability to successfully graduate from high school and obtain meaningful employment is in jeopardy. High school staff and administrators identify students at risk of not reaching their potential or leaving school prematurely.

(Must have DCTE approval prior to implementation)

493790 JAG Multi-Year II

Credit: 1 Grade Levels: 10-12

JAG II continues the JAG curriculum and may be repeated. JAG utilizes the National Jobs for America's Graduates model. It is designed to assist career and technical students whose ability to successfully graduate from high school and obtain meaningful employment is in jeopardy. High school staff and administrators identify students at risk of not reaching their potential or leaving school prematurely.

(Must have DCTE approval prior to implementation)

493770 JAG Senior Applications

Credit: 1 Grade Levels: 12

A senior-only program that focuses classroom attention on eligible high school seniors to provide support for school-to-career success. JAG utilizes the National Jobs for America's Graduates model. It is designed to assist career and technical students whose ability to successfully graduate from high school and obtain meaningful employment is in jeopardy. High school staff and administrators identify students at risk of not reaching their potential or leaving school prematurely. It is recommended, for early intervention, that a Multi-Year class precede the implementation of a JAG Senior Applications.

(Must have DCTE approval prior to implementation)

493760 JAG Multi-Year ALTERNATIVE

Credit: 1 Grade Levels: 9-12

JAG Multi-Year AE Program serves ninth through twelfth grade students. The program is designed to serve students in alternative learning environments. High school staff and administrators identify students at risk of not reaching their potential or leaving school prematurely.

(Must have DCTE approval prior to implementation)

493800 JAG Work-Based Learning

Credit: 1 Grade Levels: 9-12

While employment is not a requirement of the JAG program, this instructor-supervised work release course may be offered concurrent to the JAG High School courses listed above. JAG Work-Based Learning includes monthly employer evaluations of participants. Credit can be given at the discretion of the individual school district for student work-based learning experiences. Participants should be expected to complete 180 hours of work-based learning in order to receive one credit-with a maximum of four credits for completing 720 hours of work study within a consecutive two-year period. JAG Work-Based Learning may be utilized in both traditional and alternative environments. The JAG WBL course follows the Work-Site Instruction and Course Credit guidelines for the CTE Internship Course (See Course Code 493860) while providing the JAG curriculum instruction as noted in JAG High School programs.

(Must have DCTE approval prior to implementation)