Career and Technical Education (CTE)

Why CTE?

Career and Technical Education (CTE) prepares all students for high-skill, high-wage, or in-demand careers. The experience begins with career inspiration in Pre-K, awareness in elementary school, exploration in middle school, and preparation in high school. CTE equips students for postsecondary education and immediate employment opportunities to successfully compete worldwide.

Why CTE?
CTE students graduate with choices for careers, not just graduation.

100% of CTE Concentrators graduate.

CTE programs bridge the gap between school and career, and the results are clear. CTE students graduate in higher numbers than non-CTE students do and continue on to higher education, many with college credits to get them one step closer to their career goals.

As a CTE Concentrator, you are completing a pathway for:

- High-skill, high-wage, or in-demand careers
- Earning college credits while in high school to jump-start your college degree
- Attaining industry-recognized credentials
- Placement in real-world, work-based learning opportunities within business/industries as apprentices, interns, cooperative learners, and clinicians

CTE Data at a Glance 2019–2020

- 252 Middle/High School CTE courses were offered
- 37,550 students were enrolled in CTE
  - ✔ 16,500 Middle School Students
  - ✔ 21,050 High School Students
- 138 Apprenticeships
- 1,445 Internships
- 30 Cooperative Education Experiences

CTE Career Clusters

All CTE pathways align to the Career Clusters. Each course within a CTE pathway is placed in a Career Cluster based on a set of knowledge and skills common to careers within it. Current industry standards identify what the student should

know and be able to do. The courses prepare students for success in a broad range of high-skill, high-wage or in-demand careers.

GCS offers CTE courses that lead to a concentration in the 15 Career Clusters listed below:

1. Agriculture, Food, & Natural Resources
2. Architecture & Construction
3. Arts, A/V Technology, & Communications
4. Business Management & Administration
5. Education & Training
6. Finance
7. Health Science
8. Hospitality & Tourism
9. Human Services
10. Information Technology
11. Law, Public Safety, Corrections, & Security
12. Manufacturing
13. Marketing
14. Science, Technology, Engineering, & Mathematics
15. Transportation, Distribution, & Logistics

CTE Pathways

Whether planning to enter the workforce before or after college, all students benefit from both a strong academic foundation and specialized technical skills. CTE pathway course sequences may be combined with required academic courses to assist students with their lifelong plan for learning.

Be a Pathway Completer (Concentrator)

Students who elect to concentrate in a CTE pathway will take a required sequence of courses and must earn two or three credits within a Career Cluster. CTE pathways are developed in collaboration with business and industry partners and reflect the trends in current and emerging careers and the need for CTE lifelong learning. Students should work with their

parents, counselors, career development coordinators, and teachers to identify their interests, abilities, and talents and by researching the careers today, tomorrow, and beyond.

Earning College Credit While in High School

GCS and GTCC have adopted the North Carolina High School to Community College Statewide Articulation Agreement, which awards college credit at NC community colleges to students completing select CTE courses. In addition, GCS and GTCC have added a local articulation agreement to expand the number of eligible courses. Under these agreements, GCS

high school students have the opportunity to earn college credit before graduation by earning a score of 93 or higher on the CTE State Assessment and a grade of B or better in their high school CTE course. See your school counselor or Career Development Coordinator for additional information and an advanced standing agreement application.

For more information about CTE, visit the GCS website at **www.gcsnc.com** and click Departments, and then select: Career and Technical Education.

The CTE Experience...

- ✔ Be a CTE Pathway Completer (Concentrator)
- ✔ Attain Industry-Recognized Credentials
- ✔ Enroll in Work–Based Learning (WBL)
- ✔ Enhance Professional/Employability Skills
- ✔ Lead in a Career Technology Student Organizations (CTSOs)
- ✔ Prepare for High–Skill, High–Wage, or In–Demand Careers

Choices for Careers, Not Just Graduation

WORKFORCE READY	2-YEAR COLLEGE	4-YEAR & ADVANCED DEGREES	ENTREPRENEURIAL VENTURES	MILITARY
Credentials	Credentials	Credentials	Credentials	Credentials
Certificates	Certificates	Certificates	Certificates	Certificates
Licensures	Licensures	Licensures	Licensures	Licensures
	Associate Degree	Associate Degree	Consultant	Advanced Ranking
	Professional Degree	Professional Degree	Contractor	Professional Degree
	Specialist Degree	Specialist Degree	Subcontractor	
		Bachelor's Degree	Self–Employed	
		Master's Degree	Start–Up	
		Doctoral Degree		

CTE Course Descriptions |

CTE CAREER CLUSTER:

A grouping of occupations used as an organizing tool for curriculum design and instruction. The Career Cluster approach makes it easy for students to understand the relevance of their required courses and helps them select their elective courses more wisely from a group of similar courses in the same field of work that require comparable skills. Career Clusters identify routes from secondary school to two- and four-year colleges, graduate school, and the workplace so students can link what they learn in school and what they can do in the future.

CTE CAREER PATHWAY:

A subgrouping of occupations within a Career Cluster used as an organizing tool for curriculum design and instruction. Occupations are grouped into pathways based on a set of common knowledge and skills required for career success.

CTE CONCENTRATOR:

A student who has earned two or three credits in a specific Career Pathway contained in a Career Cluster by enrolling in sequential order. It is recommended that students take the CTE Foundational Course.

CTE MAJOR:

A student who has earned three or four credits in a specific Career Pathway contained in a Career Cluster by enrolling in sequential order. It is recommended that the fourth credit be from a work-based learning experience. There are a few exceptions when a fourth course for a specific pathway is not WBL.

UNIT:

A CTE course is equivalent to one unit, except for a few courses that are denoted as two units. A unit equals one credit towards CTE pathway completion.

WORK-BASED LEARNING (WBL):

An educational strategy that allows students to engage in sustained interactions with community business and industry professionals and prepares them for the workplace while allowing the application of technical skills learned in the classroom. Quality WBL experiences help students to develop their technical and employability skills while applying their academic skills. WBL has been a practice for many centuries and is an integral part of the CTE experience.

CAREER AND COLLEGE PROMISE (CCP):

A method to provide a way for any NC high school student in good academic standing who meets eligibility requirements to take community college courses while still in high school. Students can combine high school and postsecondary courses to earn a credential, certificate, or diploma in a technical field and meet requirements for CTE concentration. Credit may be transferrable to another NC community college, to UNC System institutions, and to many of the state's independent colleges and universities. Students should work with their school counselor to determine what CTE pathways are available at their local community college or in what other ways they can access this program.

INDUSTRY-RECOGNIZED CREDENTIAL:

A CTE Concentrator signifies proficiency of industry knowledge by obtaining an industry-recognized credential, which is the ability to perform specific tasks that provides evidence of authority, status, rights, and entitlement to privileges.

SUPPLEMENTAL CTE COURSES:

A course that enhances related knowledge and skills developed in a specific Career Pathway contained in a Career Cluster.

CAREER AND TECHNICAL STUDENT ORGANIZATIONS (CTSOS):

A cocurricular national organization for students in a CTE pathway to further their knowledge, skills and leadership ability by participating in activities, events, and competitions (region, state, and national).

HIGH-WAGE CAREER:

A profession that pays at least half of the workers at or above the regional average for that job.

HIGH-SKILL CAREER:

A profession that requires a high school diploma (or equivalent); some college or additional training, such as an apprenticeship/internship; or an industry-recognized credential, certificate, or licensure.

IN-DEMAND CAREER:

A profession that has a very large number of annual openings and a strong job-growth rate each year.

CTE Clusters, CTE Pathways, & CTE Course Descriptions

CTE Career Cluster | AGRICULTURAL, FOOD, AND NATURAL RESOURCES

CTE CAREER PATHWAY ANIMAL SCIENCE (ANSC)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	AU10 Agriscience Applications	AA21 Animal Science I	AA22 Animal Science II or AA23 Animal Science II – Small Animal	AA41 Veterinary Assisting Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internership
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Certified Veterinary Assistant				
CTE Careers Existing Today and Tomorrow: Veterinarian, Animal Health Scientist, Animal Biologist, Science Policy Director				

CTE Course Descriptions:

CTE COURSE 1
Agriscience Applications

This course focuses on integrating biological/physical sciences with technology as related to the environment, natural resources, food production, science, and agribusiness. Topics of instruction include agricultural awareness and literacy, employability skills, and introduction to all aspects of the total agricultural industry. Strong communication skills are necessary, and English language arts, mathematics, and science standards are reinforced.

CTE COURSE 2
Animal Science I

This course focuses on the basic scientific principles and processes that are involved in animal physiology, breeding, nutrition, and care in preparation for an animal science career major. Topics include animal diseases, introduction to animal science, animal nutrition, animal science issues, career opportunities, and animal evaluation. Strong communication skills are necessary, and English language arts, mathematics, and science standards are reinforced.

CTE COURSE 3
Animal Science II

This course includes more advanced scientific principles and communication skills and includes animal waste management; animal science economics; decision-making; and global concerns in the industry, genetics, and breeding. Strong communication skills are necessary, and English language arts, mathematics, and science standards are reinforced.

Animal Science II – Small Animal

This course provides instruction on animal science topics related to small animals that are served by a veterinarian. Content related to the breeding, grooming, care, and marketing of animals that fit into this category is taught in this course. Strong communication skills are necessary, and English language arts, mathematics, and science standards are reinforced.

CTE CAREER PATHWAY MAJOR:
Veterinary Assisting

Interested in a career in animal medicine? Topics include proper veterinary practice management and client relations, pharmacy and laboratory procedures, enhancement of animal care learned in previous animal courses, and surgical/radiological procedures. Advanced FFA leadership will be infused throughout the curriculum to develop the student's ability to work with the public. All aspects of this course will have hands–on skill sets that will be enforced with 200 hours of working in animal medicine throughout all animal courses in high school. Applied mathematics, science, writing, and skill sets are integrated throughout the curriculum. Students will be prepared for the Veterinary Assisting exam developed by the National Association of Veterinary Technicians in America.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | AGRICULTURAL, FOOD, AND NATURAL RESOURCES

CTE CAREER PATHWAY PLANT SYSTEMS (PLSV)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	AU10 Agriscience Applications	AP41 Horticulture I	AP42 Horticulture II or AP44 Horticulture II – Landscaping or AP43 Horticulture II – Turfgrass Management	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, North Carolina Certified Plant Professional (CPP), Certified Young Plant Professional (CYPP), NC Private Pesticide Applicator				
CTE Careers Existing Today and Tomorrow: Landscaper, Global System Architect, Fear Containment Manager				

CTE Course Descriptions:

CTE COURSE 1
Agriscience Applications

This course focuses on integrating biological/physical sciences with technology as related to the environment, natural resources, food production, science, and agribusiness. Topics of instruction include agricultural awareness and literacy, employability skills, and introduction to all aspects of the agricultural industry. Strong communication skills are necessary, and English language arts, mathematics, and science standards are reinforced.

CTE COURSE 2
Horticulture I

This course covers instruction that expands scientific knowledge and skills to include the more advanced scientific computations and communication skills needed in the horticulture industry. Topics include greenhouse plant production and management; bedding plant production; watering systems; light effects; basic landscape design; installation and maintenance; lawn and turfgrass management; and personal development. Strong communication skills are necessary, and English language arts, mathematics, and science standards are reinforced.

CTE COURSE 3
Horticulture II

This course covers instruction that expands scientific knowledge and skills to include the more advanced scientific computations and communication skills needed in the horticulture industry. Topics include greenhouse plant production and management; bedding plant production; watering systems; light effects; basic landscape design, installation and maintenance; lawn and turfgrass management; and personal development. Strong communication skills are necessary, and English language arts, mathematics, and science standards are reinforced.

Horticulture II – Landscaping

This course provides hands–on instruction and emphasizes safety skills needed by landscape technicians in the field. Students are instructed in interpreting landscape designs; identifying landscape plants; and planting/maintaining trees, shrubs, and turf. Landscape construction is emphasized in the areas of grading and drainage, irrigation, paver installation, and the use/maintenance of landscape equipment. Current topics discussions provide students an understanding of careers and the employability skills needed to enter the landscape industry. Strong communication skills are necessary, and English language arts, mathematics, and science standards are reinforced.

Horticulture II – Turfgrass Management

This course provides hands–on instruction and emphasizes eight units of instruction, including fundamentals of soils and pests, environmental issues related to turf management, landscape basics, lawn care and turf production, golf course management, sports turf and turf irrigation, turf equipment and maintenance, and human resources and financial management. Safety skills will be emphasized. Strong communication skills are necessary, and English language arts, mathematics, and science standards are reinforced.

Supplemental CTE Course Descriptions:

MICROSOFT WORD AND POWERPOINT

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | ARCHITECTURE

CTE CAREER PATHWAY CARPENTRY (CARP)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	IC00 Core and Sustainable Construction	IC21 Carpentry I	IC22 Carpentry II	IC23 Carpentry III or Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, OSHA 10–Hour Construction Industry Certifications, NC NCCER Credential – Carpentry I, NC NCCER Credential – Carpentry II				
CTE Careers Existing Today and Tomorrow: Shareability Auditor, Opportunity Spotters, Impact Assessors				

CTE Course Descriptions:

CTE COURSE 1
Core and Sustainable Construction

This course covers the National Center for Construction Education and Research (NCCER) Core certification modules, required for all of the NCCER curriculum–area programs, and an additional Green module. The course content includes: basic safety, introduction to construction math, introduction to hand tools, introduction to power tools, introduction to construction drawing blueprints, material handling, basic communication skills, basic employability skills, and "Your Role in the Green Environment." The additional Green module has been added to provide students with instruction in the green environment, green construction practices, and green building rating systems. It will also help students better understand their personal impacts on the environment and make them more aware of how to reduce their carbon footprint.

CTE COURSE 2
Carpentry I

This course covers basic carpentry terminology and develops technical aspects of carpentry with an emphasis on the development of introductory skills, including orientation to the trade, building materials, fasteners, and adhesives, hand and power tools; reading plans and elevations; introduction to concrete; reinforcing materials, and forms; floor system construction procedures; wall and ceiling framing procedures; and basic stair layout. Strong communication skills are necessary, and English language arts, and mathematics standards are reinforced.

CTE COURSE 3
Carpentry II

This course builds on skills mastered in Carpentry I and provides an emphasis on roof framing procedures, roofing applications, thermal and moisture protection, window and exterior door installation, exterior finishing, and the introduction to weatherization module. Strong communication skills are necessary, and English language arts, and mathematics standards are reinforced.

CTE CAREER PATHWAY MAJOR:
Carpentry III

This course builds on skills mastered in Carpentry II and develops advanced technical aspects of carpentry with an emphasis on commercial drawing; cold–formed steel framing construction methods; drywall installations; drywall finishing procedures; doors and door hardware installation; and windows, door, floor, and ceiling trim procedures. Strong communication skills are necessary, and English language arts and mathematics standards are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | ARCHITECTURE

CTE CAREER PATHWAY **DRAFTING ARCHITECTURAL (DRFA)**				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	IC61 Drafting I	IC62 Drafting II – Architectural	IC63 Drafting III – Architectural	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Autodesk Certified User AutoCAD, Autodesk Certified User Revit, Autodesk Certified Professional Revit				
CTE Careers Existing Today and Tomorrow: Architect, Construction Material Designer, Structural Engineer, Global System Architect				

CTE Course Descriptions:

CTE COURSE 1
Drafting I

This course focuses on the principles, concepts of architectural design, and use of Building Information Modeling (BIM), used in the field of architecture. An emphasis is placed on the use of 3D CAD tools in the design and execution of floor plans, foundation plans, wall sections, and elevation drawings. An understanding of 3D CAD concepts and terms and the use of 3D CAD software, such as REVIT, are essential to this course, and the required method of producing finished drawings.

CTE COURSE 2
Drafting II – Architectural

This course focuses on the principles, concepts of architectural design, and use of Building Information Modeling (BIM), used in the field of architecture. An emphasis is placed on the use of 3D CAD tools in the design and execution of floor plans, foundation plans, wall sections, and elevation drawings. An

understanding of 3D CAD concepts and terms, and the use of 3D CAD software, such as REVIT, are essential to this course and the required method of producing finished drawings.

CTE COURSE 3
Drafting II – Architectural III

This course introduces students to advanced architectural design concepts and Building Information Modeling (BIM). Emphasis is placed on the continued use of 3D CAD tools and software, such as REVIT, in the design and execution of site and foundation plans, electrical/lighting plans, stair/railing design, bath and kitchen details, multilevel floor systems, site development, and renderings and walkthroughs, as well as small commercial building and design.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | ARCHITECTURE

CTE CAREER PATHWAY				
ELECTRICAL TRADES (ELTR)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	IC00 Core and Sustainable Construction	IC41 Electrical Trades I	IC42 Electrical Trades II	IC43 Electrical Trades III Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials:				
NC NCCER Credential – Electrical Trades, WorkKeys National Career Readiness Certificate				
CTE Careers Existing Today and Tomorrow:				
Electrician, Micro Grid Strategists, Power Conversion Specialists				

CTE Course Descriptions:

CTE COURSE 1
Core and Sustainable Construction

This course covers the National Center for Construction Education and Research (NCCER) Core certification modules, required for all of the NCCER curriculum–area programs, and an additional Green module. The course content includes: basic safety, introduction to construction math, introduction to hand tools, introduction to power tools, introduction to construction drawing blueprints, material handling, basic communication skills, basic employability skills, and "Your Role in the Green

Environment." The additional Green module has been added to provide students with instruction in the green environment, green construction practices, and green building rating systems. It will also help students better understand their personal impacts on the environment and make them more aware of how to reduce their carbon footprint.

CTE COURSE 2
Electrical Trades I

This course covers basic electrical trades' terminology and develops technical aspects of electrical trades with an emphasis on the development of introductory skills, such as residential wiring, electrical installation, and service. Topics include orientation to the electrical trade, electrical safety, introduction to electrical circuits, electrical theory, introduction to the National Electric Code, device boxes, hand bending techniques, raceways and fittings, and introduction to weatherization. Strong communication skills are necessary, and English language arts, science, and mathematics standards are reinforced.

CTE COURSE 3
Electrical Trades II

This course builds on skills mastered in Electrical Trades I and provides an emphasis on conductors and cables, construction drawings, residential electric services, electrical test equipment usage, alternating current (A/C) theory, grounding and bonding techniques: theory and application of motors, and electric lighting to structures. Strong communication skills are necessary, and English language arts, science, and mathematics standards are reinforced.

CTE CAREER PATHWAY MAJOR:
Electrical Trades III

This course builds on skills mastered in Electrical Trades II and provides an emphasis on conduit bending techniques, pull and junction boxes, conductor installations, cable tray, conductor terminations and splices, circuit breakers and fuses, and control systems and fundamental concepts. Upon successful completion of this course, students should be prepared to enter the workforce as an electrical helper and/or continuing education towards degrees in Construction Management or Electrical Engineering. Strong communication skills are necessary and English language arts, science and mathematics standards are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | ARCHITECTURE

<table>
<tr><td colspan="5">CTE CAREER PATHWAY
HEATING, VENTILATION, AND AC (HVAC)</td></tr>
<tr><td>**PATHWAY COMPLETER**</td><td>**CTE COURSE 1**</td><td>**CTE COURSE 2**</td><td>**CTE COURSE 3**</td><td>**CTE CAREER PATHWAY MAJOR**</td></tr>
<tr><td>**CTE CONCENTRATOR**</td><td rowspan="2">IC00 Core and Sustainable Construction</td><td rowspan="2">IL55 Heating Ventilation, & Air Conditioning I</td><td rowspan="2">IL56 Heating, Ventilation, & Air Conditioning II</td><td rowspan="2">Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship</td></tr>
<tr><td>**CTE MAJOR**</td></tr>
<tr><td>**SUPPLEMENTAL CTE COURSES**</td><td colspan="4">BM10 Microsoft Word and PowerPoint</td></tr>
<tr><td>**CAREER & COLLEGE PROMISE**</td><td colspan="4">Approved Career & College Promise Career Technical Education Pathway</td></tr>
<tr><td colspan="5">**CTE Industry-Recognized Credentials:** WorkKeys National Career Readiness Certificate, NCCER Certification, Occupational Safety and Health Administration (OSHA) 10–Hour Construction Industry Credential</td></tr>
<tr><td colspan="5">**CTE Careers Existing Today and Tomorrow:** Commercial HVAC Technician, HVAC Project Manager, Controller, Robot Sherpa Operations Manager, IoT Smart Appliance Installer</td></tr>
</table>

CTE Course Descriptions:

CTE COURSE 1
Core and Sustainable Construction

This course covers the National Center for Construction Education and Research (NCCER) Core certification modules, required for all of the NCCER curriculum–area programs, and an additional Green module. The course content includes: basic safety, introduction to construction math, introduction to hand tools, introduction to power tools, introduction to construction drawing blueprints, material handling, basic communication skills, basic employability skills, and "Your Role in the Green Environment." The additional Green module has been added to provide students with instruction in the green environment, green construction practices, and green building rating systems. It will also help students better understand their personal impacts on the environment and make them more aware of how to reduce their carbon footprint.

CTE COURSE 2
Heating, Ventilation, & Air Conditioning I

Students are introduced to the general and technical aspects of the heating, ventilation, and air conditioning (HVAC) industry. Topics and hands–on activities include copper and plastic tubing, soldering and brazing, introduction to heating and cooling, air–distribution systems, and basic electricity. Students will have the opportunity to develop skills and earn national certification through the National Center for Construction Education and Research. See www.nccer.org for additional information on NCCER.

CTE COURSE 3
Heating, Ventilation, & Air Conditioning II

Students are introduced to advanced general and technical aspects of the HVAC industry. Topics and hands–on activities include leak detection, evacuation, recovery, charging, control–circuit troubleshooting, installation and maintenance, and duct systems. Students will have the opportunity to develop skills and earn national certification through the National Center for Construction Education and Research (NCCER) as well as the Occupational Safety and Health Administration (OSHA) 10–Hour Construction Industry credential. See www.nccer.org for additional information on NCCER.

CTE CAREER PATHWAY MAJOR:
Electrical Trades III

This course builds on skills mastered in Electrical Trades II and provides an emphasis on conduit bending techniques, pull and junction boxes, conductor installations, cable tray, conductor terminations and splices, circuit breakers and fuses, and control systems and fundamental concepts. Upon successful completion of this course, students should be prepared to enter the workforce as an electrical helper and/or continuing education towards degrees in Construction Management or Electrical Engineering. Strong communication skills are necessary, and English language arts, science, and mathematics standards are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | ARCHITECTURE

CTE CAREER PATHWAY **INTERIOR DESIGN (INDE)**				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	FI51 Interior Design I	FI52 Interior Design II	FI53 Interior Digital Applications	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Autodesk Certified User Revit				
CTE Careers Existing Today and Tomorrow: Furniture Designer, Facilities Architect, Virtual Showroom Coordinator, 3D Design Manager				

CTE Course Descriptions:

CTE COURSE 1
Interior Design I

This course examines the housing and interior decisions individuals and families make based on their needs, the environment, and technology. It emphasizes selecting goods and services and creating functional and pleasing living environments based on sound financial decisions and design principles. Skills in mathematics, technology, and art are reinforced in this course. Family, Career and Community Leaders of America (FCCLA) leadership activities provide the opportunity to apply instructional competencies and workplace–readiness skills to authentic experiences.

CTE COURSE 2
Interior Design II

This course prepares students for opportunities in residential and nonresidential interior–design fields for entry–level jobs. Topics include the application of design theory to interior plans and production, selection of materials, and examination of business procedures. Skills in technology, art, mathematics, and communication are reinforced in this course. FCCLA leadership activities provide the opportunity to apply instructional competencies and workplace–readiness skills to authentic experiences.

CTE COURSE 3
Interior Digital Applications

This course is a project–based video course that develops career and communication skills in video production using Adobe tools. This course is aligned to Adobe Premiere certification. Strong communication skills are necessary,

and English language arts standards are reinforced. Work-based learning strategies appropriate for this course may include job shadowing. Apprenticeships and cooperative education are possible for this course. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | ARTS, A/V TECHNOLOGY, & COMMUNICATIONS

CTE CAREER PATHWAY **ADOBE ACADEMY (ADAC)**				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	II31 Adobe Visual Design	II32 Adobe Digital Design	II33 Adobe Video Design	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Adobe Photoshop, InDesign, Illustrator, Adobe Dreamweaver, Adobe Premiere				
CTE Careers Existing Today and Tomorrow: Motion Graphics Designer, 3Dimensionalist, 3D Printer "Ink" Developer, Animation Expert				

CTE Course Descriptions:

CTE COURSE 1

Adobe Visual Design

This course is a project–based course that develops ICT, career, and communication skills in print and graphic design using Adobe tools. This course is aligned to Adobe Photoshop, InDesign, and Illustrator certification. Strong communication skills are necessary, and English language arts standards are reinforced. Work–based learning strategies appropriate for this course include job shadowing. Apprenticeships and cooperative education are possible for this course. SkillsUSA competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

CTE COURSE 2

Adobe Digital Design

This is a project–based course that develops ICT, career, and communication skills in web design using Adobe tools. This course is aligned to Adobe Dreamweaver certification. Strong communication skills are necessary, and English language arts standards are reinforced.

CTE COURSE 3

Adobe Video Design

This course is a project–based video course that develops career and communication skills in video production using Adobe tools. This course is aligned to Adobe Premiere certification. Strong communication skills are necessary, and English language arts standards are reinforced. Work–based learning strategies appropriate for this course may include job shadowing. Apprenticeships and cooperative education are possible for this course. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:

Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | ARTS, A/V TECHNOLOGY, & COMMUNICATIONS

<table>
<tr>
<td colspan="5" align="center">CTE CAREER PATHWAY
APPAREL AND TEXTILE PRODUCTION (ATPR)</td>
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<td>CTE CONCENTRATOR</td>
<td rowspan="2">MI21 Fashion Merchandising</td>
<td rowspan="2">FA31 Apparel and Textile Production I</td>
<td rowspan="2">FA32 Apparel and Textile Production II</td>
<td rowspan="2">Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship</td>
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<tr>
<td>CTE MAJOR</td>
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<td>SUPPLEMENTAL CTE COURSES</td>
<td colspan="4">BM10 Microsoft Word and PowerPoint
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<td>CAREER & COLLEGE PROMISE</td>
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<td colspan="5">**CTE Industry-Recognized Credentials:** WorkKeys National Career Readiness Certificate, Preprofessional Assessment and Certification in Fashion, Textiles, and Apparel</td>
</tr>
<tr>
<td colspan="5">**CTE Careers Existing Today and Tomorrow:** Textile CAD Designer, Apparel Colorist, 3D Fashion Designer, Digital Fabricator, eCommerce Strategist</td>
</tr>
</table>

CTE Course Descriptions:

CTE COURSE 1
Fashion Merchandising

This course introduces students to the world of buying and selling in the fashion industry. Students will explore the concepts of the business of fashion, fashion promotional events, the evolution and movement of fashion, and the merchandising and selling of fashion.

CTE COURSE 2
Apparel and Textile Production I

Learn the basics of clothing production, including preparation for clothing construction, basic clothing construction techniques, consumer decisions, textiles, historical perspectives and design, and career opportunities. Students will apply these construction and design skills to apparel and home fashion. Skills in art, communication, math, science, and technology are reinforced.

CTE COURSE 3
Apparel and Textile Production II

Explore the field of advanced clothing and housing apparel development. In this course, students will use fibers and fabrics, combined with design and construction techniques, to develop and produce a clothing or housing apparel product. A real or simulated business apparel enterprise and FCCLA activities will allow students to apply their knowledge to an authentic experience and to develop a portfolio. Skills in science, mathematics, management, communication, and teamwork are reinforced in this course.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

Entrepreneurship I

Students will have the opportunity to study entrepreneurial concepts at an accelerated pace with increased rigor. Students will evaluate the concepts of growing their own businesses or operating a small business and review feasible ideas of products/services, research procedures, business financing, marketing strategies, and resources for starting a small business. Students will develop the components of a business plan and evaluate start-up requirements.

CTE Career Cluster | ARTS, A/V TECHNOLOGY, & COMMUNICATIONS

CTE CAREER PATHWAY **MEDIA PRODUCTIONS (MPRS)**				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	II31 Adobe Visual Design	II33 Adobe Video Design	IL70 Media Production I	IL71 Media Production II
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate				
CTE Careers Existing Today and Tomorrow: Video Scheduling Specialist, Master Control Operator, TV Programming Director, Streaming Service Animation Expert, Global Broadcast Operations Manager				

CTE Course Descriptions:

CTE COURSE 1
ADOBE VISUAL DESIGN

This course is a project-based course that develops ICT, career, and communication skills in print and graphic design using Adobe tools. This course is aligned to Adobe Photoshop, InDesign, and Illustrator certification. Strong communication skills are necessary, and English language arts standards are reinforced. Work-based learning strategies appropriate for this course include job shadowing. Apprenticeships and cooperative education are possible for this course. SkillsUSA competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

CTE COURSE 2
ADOBE VIDEO DESIGN

This course is a project-based video course that develops career and communication skills in video production using Adobe tools. This course is aligned to Adobe Premiere certification. Strong communication skills are necessary, and English language arts standards are reinforced. Work-based learning strategies appropriate for this course may include job shadowing. Apprenticeships and cooperative education are possible for this course. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

CTE COURSE 3
MEDIA PRODUCTION I

Students will work in a fully equipped industry standard broadcast studio and film studio. This course is intended to prepare students for careers in film, television production, live broadcasting, scriptwriting, on-air graphics, audio engineering, preproduction and postproduction, and talent development. During the course, students will learn about the industry terminology, and history of mass media—radio, TV, film, and print and social media—as well as domestic and international rules and regulations. After completion of this course, students will have the required experience to obtain employment or enter into a postsecondary education program in the audio and video technology career field. Students work cooperatively and independently in all phases of production. SkillsUSA, FBLA, and TSA are examples of appropriate organizations for providing leadership training and/or reinforcing specific career and technical skills and may be considered an integral part of the instructional program.

CTE CAREER PATHWAY MAJOR:
MEDIA PRODUCTION II

Students will continue to enhance their knowledge and skills in the second level of this course. This course is intended to prepare students for careers in film, television production, live broadcasting, scriptwriting, on-air graphics, audio engineering, preproduction and postproduction, and talent development. During the course, students will learn about the industry terminology, history of mass media—radio, TV, film, and print and social media—as well as domestic and international rules and regulations. After completion of this course, students will have the required experience to obtain employment or enter into a postsecondary education program in the audio and video technology career field. Students work cooperatively and independently in all phases of production. SkillsUSA, FBLA, and TSA are examples of appropriate organizations for providing leadership training and/or reinforcing specific career and technical skills and may be considered an integral part of the instructional program.

CTE Career Cluster | ARTS, A/V TECHNOLOGY, & COMMUNICATIONS

CTE CAREER PATHWAY **DIGITAL DESIGN AND ANIMATION (DIDE)**				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	TS24 Digital Design and Animation I	TS25 Digital Design and Animation II	II33 Adobe Video Design	Work-Based Learning: CTE Apprenticeship, Cooperative Education (Co-op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint ME11 Entrepreneurship I			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Adobe Dreamweaver				
CTE Careers Existing Today and Tomorrow: Graphic Designer, Digital Art Director, Virtual Animation Architect, Futuristic Design Coordinator				

CTE Course Descriptions:

CTE COURSE 1

Digital Design and Animation I

This is a project–based course that develops ICT, career, and communication skills in web design using Adobe tools. This course is aligned to Adobe Dreamweaver certification. Strong communication skills are necessary, and English language arts standards are reinforced.

CTE COURSE 2

Digital Design and Animation II

In this state–of–the–art course, students will use digital design techniques and complex graphic tools to produce a variety of 2D and 3D graphics to better understand technical, mathematical, and/or scientific concepts. Visualization activities may include graphics of mathematical models, molecular structures, topographical maps, stratospheric and climate models, and statistical analysis. Digital effects in audio and video will be used to enhance the animation of graphics during digital modeling and production.

CTE COURSE 3

ADOBE VIDEO DESIGN

This is a project–based video course that develops career and communication skills in video production using Adobe tools. This course is aligned to Adobe Premiere certification. Strong communication skills are necessary and English language arts

standards are reinforced. Work–based learning strategies appropriate for this course may include job shadowing. Apprenticeships and cooperative education are possible for this course. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:

Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

ENTREPRENEURSHIP I

Students will have the opportunity to study entrepreneurial concepts at an accelerated pace with increased rigor. Students will evaluate the concepts of growing their own businesses or operating a small business and review feasible ideas of products/services, research procedures, business financing, marketing strategies, and resources for starting a small business. Students will develop the components of a business plan and evaluate start-up requirements.

CTE Career Cluster | ARTS, A/V TECHNOLOGY, & COMMUNICATIONS

CTE CAREER PATHWAY GAME ART DESIGN (GADE)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	TS24 Digital Design and Animation I	TS31 Game Art Design	TS32 Advanced Game Art Design	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate				
CTE Careers Existing Today and Tomorrow: Developer Relations Technical Creator, 3D Game Sculptor, Marketing and Production Game Artist, Data Analytics Specialist, Mixed Reality Game Inventor				

CTE Course Descriptions:

CTE COURSE 1
Digital Design and Animation I

In this state–of–the–art course, students will use digital design techniques and complex graphics tools to produce a variety of 2D and 3D graphics to better understand technical, mathematical, and/or scientific concepts. Visualization activities may include graphics of mathematical models, molecular structures, topographical maps, stratospheric and climate models, and statistical analysis. Digital effects in audio and video will be used to enhance the animation of graphics during digital modeling and production.

CTE COURSE 2
Game Art Design

Students will be introduced to techniques used in the game development industry. The focus will include correct principles used for developing games, including mathematical and physical concepts. Emphasis is placed on topics relating to history, ethics, plot development, 2D visual theory, art asset development, game probability, and interactive play technologies. Students will develop 2D physical and virtual games using hands–on experiences and a variety of software.

CTE COURSE 3
Advanced Game Art Design

This course is a continuation in the study of game design and interactivity. Emphasis is placed on creating a 3D game using visual design, evaluation, script modification, and 3D visual theory. Topics covered will include developing and modifying 3D game assets, audio and visual effects, storyboarding and plot development, market analysis, and 3D modeling and animation techniques. Students may work in collaborative teams using problem solving methodologies for the final 3D game project, which can be included in their final portfolio.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | BUSINESS MANAGEMENT AND ADMINISTRATION

CTE CAREER PATHWAY ENTREPRENEURSHIP (ENTRE)				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	MM51 Marketing or BF10 Principles of Business and Finance	ME11 Entrepreneurship I	ME12 Entrepreneurship II	Work-Based Learning: CTE Apprenticeship, Cooperative Education (Co-op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Concepts of Entrepreneurship & Management; Venture Entrepreneurship; Expedition Entrepreneurship and Small Business				
CTE Careers Existing Today and Tomorrow: Small Business Owner, Strategic Management Professional, Social Entrepreneur, Opportunity Spotter				

CTE Course Descriptions:

CTE COURSE 1
Marketing

This course is designed to introduce students to the dynamic processes and activities in marketing. The experience includes students developing an understanding and skills in the areas of distribution, marketing–information management, market planning, pricing, product/service management, promotion, and selling. Also, Students develop an understanding of marketing functions applications and impact on business operations. Strong communication skills are necessary, and English language arts, mathematics, and social studies standards are reinforced.

CTE COURSE 2
Entrepreneurship I or Principles of Business and Finance

This course introduces students to topics related to business, finance, management, and marketing to cover business in the global economy, functions of business organization and management, marketing basics, and significance of business financial and risk management. Strong communication skills are necessary, and English language arts, mathematics, and social studies standards are reinforced.

CTE COURSE 3
Entrepreneurship II

In this course, students develop an understanding of pertinent decisions to be made after obtaining financing to open a small business. Students acquire in–depth understanding of business regulations, risks, management, and marketing. Students develop a small–business management handbook. Strong communication skills are necessary, and English language arts, mathematics, and social studies standards are reinforced.

Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | BUSINESS MANAGEMENT AND ADMINISTRATION

CTE CAREER PATHWAY GENERAL MANAGEMENT (GMGT)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	BF10 Principles of Business and Finance	BB40 Business Management I	BB42 Business Management II	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Fundamentals Business Concepts (ASK–BF–CERT)				
CTE Careers Existing Today and Tomorrow: Account Manager, Business Consultant, Shareability Auditor, Global Business Navigator				

CTE Course Descriptions:

CTE COURSE 1
Principles of Business and Finance

This course introduces students to topics related to business, finance, management, and marketing to cover business in the global economy, functions of business organization and management, marketing basics, and significance of business financial and risk management. Strong communication skills are necessary, and English language arts, mathematics, and social studies standards are reinforced.

CTE COURSE 2
Business Management I

This course is designed to introduce students to core management concepts. The experience includes how managers plan, organize, staff, and direct the business's resources that enhance the effectiveness of the decision–making process. Also, the experience includes students working through ethical dilemmas and problem solving situations with customer service with academic and critical–thinking skills. Strong communication skills are necessary, and English language arts, mathematics, and social studies standards are reinforced.

CTE COURSE 3
Business Management II

This course is designed to enable students to acquire, understand, and appreciate the significance of management to business organizations. Understanding how managers control financial resources, and inventory, ensure employee safety, and protect customer data enhances the effectiveness of their decision-making. Students will work through ethical dilemmas, practice problem solving, and enhance their teamwork skills. Strong communication skills are necessary, and English language arts, mathematics, and social studies standards are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:

Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | BUSINESS MANAGEMENT AND ADMINISTRATION

CTE CAREER PATHWAY PROJECT MANAGEMENT (PMGT)				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	BF10 Principles of Business and Finance	CS11 Project Management I	CS12 Project Management II	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint BM20 Microsoft Excel			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, TBD by Industry Partners				
CTE Careers Existing Today and Tomorrow: Project Management Consultant, Project Director, Industry Process Advisor, Project Designer				

CTE Course Descriptions:

CTE COURSE 1

Principles of Business and Finance

This course introduces students to topics related to business, finance, management, and marketing to cover business in the global economy, functions of business organization and management, marketing basics, and significance of business financial and risk management. Strong communication skills are necessary and English language arts, mathematics, and social studies standards are reinforced.

CTE COURSE 2

Project Management I

This course will introduce students to the principles, concepts, and software applications used in the management of projects. Through project–based learning, students will understand how to use the framework of initiating, planning, executing, monitoring and controlling, and closing a project in authentic situations. The core concepts of scope, time, cost, and integration will be examined during this course.

CTE COURSE 3

Project Management II

This project–based course focuses on the use of information technology to increase the effectiveness and efficiency of project management and integrated enterprise. Students will learn operational strategies for managing advanced technology and innovation as well as how to map the high technology operations environment to business settings. Strong communication skills are necessary and English language arts, mathematics, and arts standards are reinforced.

Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | EDUCATION AND TRAINING

CTE CAREER PATHWAY TEACHING/TRAINING (TETR)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	FE60 Child Development	FE21 Teaching as a Profession I	FE22 Teaching as a Profession II	**FE22 is a two-credit course and includes a work-base learning experience. A concentrator is automatically a major.
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint BM20 Microsoft Excel			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, TBD by Post-Secondary Partners				
CTE Careers Existing Today and Tomorrow: Teacher, College Dean, Curriculum Developer, Superintendent, Virtual Learning Specialist, Avatar Instructor				

CTE Course Descriptions:

CTE COURSE 1
Child Development

This course introduces students to responsible nurturing and basic applications of child development theory with children from infancy through age 6. Areas of study include parenthood decisions; childcare issues; prenatal development and care; and development and care of infants, toddlers, and children three through six. Emphasis is on responsibilities of parents, readiness for parenting, and the influence parents have on children while providing care and guidance. Strong communication skills are necessary, and English language arts, mathematics, science, and arts standards are reinforced.

CTE COURSE 2
Teaching as a Profession I

This college-level course is designed to encourage students who possess a high level of academic achievement and those personality traits found in good teachers, to consider teaching as a career. Students are exposed to the many facets of education through class discussion, observation, and participation in public school classrooms. Students will examine their aptitudes for teaching, learner needs, and development, including students with exceptionalities, and the history, trends, and governance of education. English/language arts, social studies, mathematics, science, technology, and interpersonal relationships are reinforced.

CTE COURSE 3
Teaching as a Profession II

This college-level course is designed to encourage students who possess a high level of academic achievement and those personality traits found in good teachers, to consider teaching as a career. Students are exposed to the many facets of education through class discussion, observation and participation in public school classrooms. Students will apply concepts through an embedded internship experience with a cooperating teacher as they design, deliver, and reflect on their instruction. Students also investigate certification, employment, ethics, and professionalism in education.

English/language arts, social studies, mathematics, science, technology, and interpersonal relationships are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | FINANCE

CTE CAREER PATHWAY ACCOUNTING (ACCT)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	BM20 Microsoft Excel	BA10 Accounting I	BA20 Accounting II	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Microsoft Office 2016 Excel Expert 77–726, Intuit QuickBooks Certified User				
CTE Careers Existing Today and Tomorrow: Certified Public Accountant, Tax Supervisor, Financial Accounting Director, Currency Adoption Specialist, Anonymity Advocates				

CTE Course Descriptions:

CTE COURSE 1
MICROSOFT EXCEL

Students in Microsoft Imagine Academies benefit from world-class Microsoft curriculum and cutting–edge software tools to tackle real–world challenges in the classroom environment. This class is designed to help you use the newest version of Microsoft Excel interface, commands, and features to present, analyze, and manipulate various types of data. Students will learn to manage workbooks as well as how to manage, manipulate, and format data. Mathematical standards are reinforced.

CTE COURSE 2
ACCOUNTING I

This course is designed to help students understand the basic principles of the accounting cycle. Emphasis is placed on the analysis and recording of business transactions, preparation, and interpretation of financial statements, accounting systems, banking and payroll activities, basic types of business ownership, and an accounting career orientation. Mathematical standards are reinforced, and entrepreneurial experiences are encouraged.

CTE COURSE 3
ACCOUNTING II

This course is designed to provide students with an opportunity to develop in–depth knowledge of accounting procedures and techniques utilized in solving business problems and making financial decisions. Emphasis includes departmental accounting, corporate accounting, cost accounting, and inventory control systems; managerial accounting and budgeting; and further enhancement of accounting skills. Mathematics is reinforced, and entrepreneurial experiences are encouraged.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | FINANCE

CTE CAREER PATHWAY FINANCIAL SECURITIES AND INVESTMENTS (FSIN)				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	BF10 Principles of Business and Finance	BF21 Financial Planning I	BF22 Financial Planning II	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Fundamentals Business Concepts (ASK–BF–CERT)				
CTE Careers Existing Today and Tomorrow: Financial Planner, Stockbroker, Crypto Currency Banker, Currency Adoption Specialist				

CTE Course Descriptions:

CTE COURSE 1
Principles of Business and Finance

This course introduces students to topics related to business, finance, management, and marketing to cover business in the global economy, functions of business organization and management, marketing basics, and significance of business financial and risk management. Strong communication skills are necessary, and English language arts, mathematics, social studies, and arts standards are reinforced.

CTE COURSE 2
Financial Planning I

This course is designed to cover key strategies for wealth building as students learn to evaluate businesses for investment opportunities while incorporating current headlines and trends, financial resources, and stock market simulation. Also students will develop techniques to enhance personal wealth building for a secure financial future. Current technology will be used to acquire information and to complete activities. Throughout the course, students are presented ethical dilemmas and problem solving situations for which they must apply academic, team–building, and critical–thinking skills.

CTE COURSE 3
Financial Planning II

Students will further develop the fundamental knowledge and skills acquired in the prerequisite course to create a business financial plan, including loans, insurance, taxes, and corporate governance, and to explore the various risks and returns associated with business activities. Emphasis will be placed on analyzing ethical situations in various aspects of finance in local, national, and global business environments. Current technology will be used to acquire information and to complete activities. Throughout the course, students are presented ethical dilemmas and problem solving situations for which they must apply academic, team–building, and critical–thinking skills.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | HEALTH SCIENCE

CTE CAREER PATHWAY				
HEALTH CARE PROFESSIONAL (HPCP)				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	HU40 Health Science I	HU42 Health Science II	HN43 Nursing Fundamentals and Practicum	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Stop the Bleed, First Aid, OSHA 10–Hour General Industry (Health care) Certification, North Carolina Nurse Aide I				
CTE Careers Existing Today and Tomorrow: Registered Nurse Aid, Health care Implementation Consultant, Cradle to Grave Lifecycle Manager, Genetic Modification Designer, Organ Agent				

CTE Course Descriptions:

CTE COURSE 1
Health Science I

This course focuses on human anatomy, physiology, human body diseases and disorders, and biomedical therapies. Students will learn about health care careers within the context of human body systems. Projects, teamwork, and demonstrations serve as instructional strategies that reinforce the curriculum content. Strong communication skills are necessary, and English language arts and science standards are reinforced.

CTE COURSE 2
Health Science II

This course is designed to help students expand their understanding of financing and trends of health care agencies, fundamentals of wellness, legal and ethical issues, concepts of teamwork, and effective communication. Students will learn health care skills, including current CPR and first aid training for health care professionals. Strong communication skills are necessary, and English language arts and science standards are reinforced.

CTE COURSE 3
Nursing Fundamentals and Practicum

(2 credits)

Recommended Prerequisite: B or Better in Health Science II

Personal Requirements:
During required internships comprising 50 percent of the coursework, students may work independently at times and must exhibit maturity, empathy, honesty, dependability, patience, responsibility, confidentiality, and discretion. Students will be working with actual patients in medical offices, hospitals, and skilled care facilities. Students will be representing their high school as well as GCS not only to the patients but also to hospital employees and administrators.

Legal Requirements: Students are responsible for obtaining or providing proof of Hepatitis B inoculation series, a negative TB skin test since July 2016, a tetanus shot within the last 10 years, and the chicken pox vaccine or illness. Students must adhere to a strict dress code required by the medical facility and must also provide for criminal checks and drug testing as required by the medical facility.

CNA Requirements: To qualify for the Certified Nurse Aide I certification, students must have 1) a course grade of 85 or better, 2) passed all CNA skills with 100 percent mastery, 3) an original Social Security Card, and 4) a current government-issued picture ID.

This course is designed for students interested in medical careers where personal care and basic nursing skills are used. This course is an enhanced adaptation of the North Carolina Division of Health Service Regulation (DHSR) Nurse Aide I (NAI) curriculum and helps prepare students for the National Nurse Aide Assessment (NNAAP). Students who pass the NNAAP become listed on the NC NAI Registry. Strong communication skills are necessary, and English language arts, mathematics, and science standards are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | HOSPITALITY & TOURISM

CTE CAREER PATHWAY SPORTS & ENTERTAINMENT MARKETING (SEMK)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	BF10 Principles of Business and Finance	MH31 Sports & Entertainment Marketing I	MH32 Sports & Entertainment Marketing II	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Certified Guest Service Professionals (CGSP), Advanced Customer Service and Sales Certification, Fundamental Marketing Concepts				
CTE Careers Existing Today and Tomorrow: Registered Nurse Aid, Health care Implementation Consultant, Cradle to Grave Lifecycle Manager, Genetic Modification Designer, Organ Agent				

CTE Course Descriptions:

CTE COURSE 1
Principles of Business and Finance

Students will learn the basics of business, finance, management, and marketing. Students will study these topics as they relate to business in the global economy, functions of business organization and management, marketing basics, and the significance of business financial and risk management.

CTE COURSE 2
Sports & Entertainment Marketing I

Students will learn about the field of sports and entertainment marketing and explore the following principles as they apply to the industry: business management, career development options, client relations, ethics, events management, facilities management, legal issues and contracts, promotion, and sponsorships.

CTE COURSE 3
Sports & Entertainment Marketing II

This course continues the instruction begun in Early Childhood Education I and includes advanced studies of early childhood, birth through age 8. Students will receive instruction in childcare pertaining to teaching methods, career development, program planning and management, health and safety issues, entrepreneurship skills, and technology. Students will complete extensive, in–depth assignments, including research, reflective practice, analytical thinking, and technology skills, to enhance studies, extend research, and assist them in professionally displaying their work.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | HOSPITALITY & TOURISM

CTE CAREER PATHWAY TRAVEL & TOURISM (TRTO)				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	MM51 Marketing	MH31 Sports & Entertainment Marketing I	MH42 Hospitality & Tourism	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Customer Service and Sales Certification, Advanced Customer Service and Sales Certification, Fundamental Marketing Concepts				
CTE Careers Existing Today and Tomorrow: International Marketing Manager, Communications & Events Specialist, Super Athlete Designer, Global Entertainment Strategist				

CTE Course Descriptions:

CTE COURSE 1
Marketing

Learn the marketing process from product design to consumer sales. Basic knowledge, skills, and attitudes help prepare students, enter the field of marketing. The course emphasizes marketing and business foundations, economics, sales, advertising, promotion, and human resources. Communications, math, and psychology standards are reinforced in this course.

CTE COURSE 2
Sports & Entertainment Marketing I

Students will learn about the field of sports and entertainment marketing and explore the following principles as they apply to the industry: business management, career development options, client relations, ethics, events management, facilities management, legal issues and contracts, promotion, and sponsorships.

CTE COURSE 3
Hospitality and Tourism

Interested in a career in travel, tourism, and recreation marketing? Begin with an overview of the hospitality industry. Students will study the impact of tourism; gain customer relations skills; understand the economic impact of travel and tourism; learn about destinations in North Carolina, the United States, and the world; and learn to analyze and market various destinations. Further, students will plan travel itineraries and make travel and hotel bookings.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | HOSPITALITY & TOURISM

CTE CAREER PATHWAY CULINARY ARTS APPLICATIONS (CULA)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	FH10 Culinary Arts & Hospitality I	FH11 Culinary Arts & Hospitality II Applications	FH13 Culinary Arts & Hospitality III	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Certified Food Protection Manager (ANSI Accredited), Certified Fundamental Cook, American Culinary Federation Culinary Arts Pre–PAC, American Association of Family & Consumer Sciences, ProStart Certificate of Achievement, National Restaurant Association Education Foundation				
CTE Careers Existing Today and Tomorrow: Culinary Operations Director, Sous Chef, Catering Coordinator, 3D Food Printer Chef				

CTE Course Descriptions:

CTE COURSE 1
Culinary Arts & Hospitality I

This course is designed to introduce students to the hospitality and food service industry by learning about components of professional practice and building basic knowledge and skills in food preparation, garde manger, baking, and food service operations. The introduction includes students learning food safety, breakfast cookery, salads and sandwiches, quick breads and cookies, and dining room service.

CTE COURSE 2
Culinary Arts & Hospitality II Applications

This course is designed for students to demonstrate their knowledge and skills in basic food preparation, garde manger, and baking and food service operations by planning and executing the program's school-based enterprise. The experience includes students preparing and selling breakfast items, salads and sandwiches, and quick breads and cookies while applying safety, sanitation, and guest service skills. Arts, English and language arts, mathematics, science, and social studies are reinforced.

CTE COURSE 3
Culinary Arts & Hospitality III

Interested in a career in travel, tourism, and recreation marketing? Begin with an overview of the hospitality industry. Students will study the impact of tourism; gain customer relations skills; understand the economic impact of travel and tourism; learn about destinations in North Carolina, the United States, and the world; and learn to analyze and market various destinations. Further, students will plan travel itineraries and make travel and hotel bookings.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | HOSPITALITY & TOURISM

<table>
<tr><td colspan="6">CTE CAREER PATHWAY
CULINARY ARTS INTERNSHIP (CULI)</td></tr>
<tr><td>**PATHWAY COMPLETER**</td><td>**CTE COURSE 1**</td><td>**CTE COURSE 2**</td><td>**CTE COURSE 3**</td><td colspan="2">**CTE CAREER PATHWAY MAJOR**</td></tr>
<tr><td>**CTE CONCENTRATOR**</td><td rowspan="2">FH10 Culinary Arts & Hospitality</td><td rowspan="2">FH12 Culinary Arts & Hospitality II Internship</td><td rowspan="2">FH13 Culinary Arts & Hospitality III</td><td colspan="2" rowspan="2">Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship</td></tr>
<tr><td>**CTE MAJOR**</td></tr>
<tr><td>**SUPPLEMENTAL CTE COURSES**</td><td colspan="5">BM10 Microsoft Word and PowerPoint</td></tr>
<tr><td>**CAREER & COLLEGE PROMISE**</td><td colspan="5">Approved Career & College Promise Career Technical Education Pathway</td></tr>
<tr><td colspan="6">**CTE Industry-Recognized Credentials:**
WorkKeys National Career Readiness Certificate, Certified Food Protection Manager (ANSI Accredited), Certified Fundamental Cook, American Culinary Federation Culinary Arts Pre–PAC, American Association of Family & Consumer Sciences, ProStart Certificate of Achievement, National Restaurant Association Education Foundation</td></tr>
<tr><td colspan="6">**CTE Careers Existing Today and Tomorrow:**
Culinary Specialist, Executive Chef, Cuisine Supervisor, Automated Meal Delivery Planner, Drone Food Manager</td></tr>
</table>

CTE Course Descriptions:

CTE COURSE 1
Culinary Arts & Hospitality I

This course is designed to introduce students to the hospitality and food service industry by learning about components of professional practice and building basic knowledge and skills in food preparation, garde manger, baking, and food service operations. The introduction includes students learning food safety, breakfast cookery, salads and sandwiches, quick breads and cookies, and dining room service.

CTE COURSE 2
Culinary Arts & Hospitality II Internship

This course is designed for students to demonstrate their knowledge and skills in basic food preparation, garde manger, and baking and food service operations through mentored work experiences in the food service industry. The experience includes students preparing and selling breakfast items, salads and sandwiches, and quick breads and cookies while applying safety, sanitation, and guest service skills.

CTE COURSE 3
Culinary Arts & Hospitality III

Interested in a career in travel, tourism, and recreation marketing? Begin with an overview of the hospitality industry. Students will study the impact of tourism; gain customer relations skills; understand the economic impact of travel and tourism; learn about destinations in North Carolina, the United States, and the world; and learn to analyze and market various destinations. Further, students will plan travel itineraries and make travel and hotel bookings.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | HUMAN SERVICES

CTE CAREER PATHWAY EARLY CHILDHOOD DEVELOPMENT & SERVICES (EACH)				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	FE60 Child Development	FE11 Early Childhood Education I	FE12 Early Childhood Education II	Work-Based Learning: CTE Apprenticeship, Cooperative Education (Co-op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, CPR, First Aid, NC Early Childhood Credential Equivalency				
CTE Careers Existing Today and Tomorrow: Human Services Clinician, Child Psychiatrist, Nutrition Consultant, Health & Human Services Professional, Deficiency Analyzer, Data Contexualist, Precision Education Specialist				

CTE Course Descriptions:

CTE COURSE 1
Child Development

This course introduces students to responsible nurturing and basic applications of child development theory. The course emphasizes the parents' responsibilities and the influences they have on children while providing care and guidance. Students will gain an understanding of the physical, emotional, social, and intellectual changes in the family, beginning with pregnancy and continuing through the school-aged child.

EARLY CHILDHOOD EDUCATION

This program is for students who are interested in a career as an educator/teacher of young children, birth through age 8. Students enrolled in Early Childhood I & II work with children in childcare centers and elementary schools. These courses are two-credit courses with a required internship comprising more than 50 percent of the required coursework.

Students will be representing their high school, as well as GCS, not only to the children and their parents but also to the childcare facility's employees and administrators. Participants in this course must exhibit maturity, empathy, honesty, dependability, patience, responsibility, confidentiality, and discretion. Students are responsible for attaining or providing proof of a negative TB skin test, performed before July 2021, and must adhere to a strict dress code and provide for criminal checks and drug testing as required by the childcare facility. They must agree to abide by GCS' and the internship sites' policies and procedures. Since Early Childhood Education interns come in contact with children on a regular basis, all students are required to have a criminal background check before beginning their Early Childhood internships. (Statute 110-90.2)

Procedures for Enrolling in Early Childhood Education (ECE) I and II:

- Turn 16 years of age by the time school starts (Early Childhood Education & NC Child Care General Statute 110.91).
- Prior to registration, interested students will meet with the Early Childhood teacher and provide the teacher with
  1) a completed interest form and
  2) a criminal records report.
- The ECE teacher will meet with each student to review career interest and the criminal records report.
- Based on each student's career interest, school discipline record, and individual criminal record, the teacher will submit to Guidance a list of students to be enrolled in ECE I and II.
- Guidance will refer any interested students to the ECE teacher.

CTE COURSE 2
EARLY CHILDHOOD EDUCATION I
(2 Units)

Through hands–on experiences, students will learn about the process of teaching and learning. They will study the developmental stages of children, birth through age 8. Because they intern in early childhood centers that must meet the requirements of NC Child Care General Statute 110.91, Section 8, students must be 16 years of age prior to October 1 to enroll in this course. Students are required to develop age–appropriate lesson plans and present these lesson plans to their fellow students for evaluation and to the children enrolled in the childcare centers and elementary schools.

CTE COURSE 3
EARLY CHILDHOOD EDUCATION II
(2 Units)

This course continues the instruction begun in Early Childhood Education I and includes advanced studies of early childhood, birth through age 8. Students will receive instruction in childcare pertaining to teaching methods, career development, program planning and management, health and safety issues, entrepreneurship skills, and technology. Students will complete extensive, in–depth assignments, including research, reflective practice, analytical thinking, and technology skills, to enhance studies, extend research, and assist them in professionally displaying their work.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | INFORMATION TECHNOLOGY

CTE CAREER PATHWAY CISCO NETWORK ENGINEERING (CNEN)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	BI12 CompTIA IT Fundamentals	II11 Cisco Network Engineering Technology I	II12 Cisco Network Engineering Technology II	Work-Based Learning: CTE Apprenticeship, Cooperative Education (Co-op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, CompTIA IT Fundamentals (FCOU61), Cisco Certified Entry Networking Technician (CCENT), Microsoft MTA 98–366 (Networking Fundamentals)				
CTE Careers Existing Today and Tomorrow: Data Center Network Engineer, Network Security Engineer, Sensor Inventor, Sensor Designer, Sensor Engineer				

CTE Course Descriptions:

CTE COURSE 1
CompTIA IT Fundamentals
This course is designed for students to develop knowledge and skills required to identify and explain the basics of computing, IT infrastructure, application and software, software development, database fundamentals, and security. The course is also designed for students to develop the ability to demonstrate knowledge and skills to install software, establish basic network connectivity, identify or prevent basic security risks, explain troubleshooting theory, and provide preventive maintenance for devices.

CTE COURSE 2
Cisco Network Engineering Technology I
CCNA 5.0 Introduction to Networks introduces the architecture, structure, functions, components, and models of the internet and computer networks. The principles of IP addressing and fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. This course uses the Cisco Introduction to Networks curriculum and must be conducted using the Cisco Networking Academy connection.

CTE COURSE 3
Cisco Network Engineering Technology II
CCNA 5.0 Routing and Switching Essentials describes the architecture, components, and operations of routers and switches in a small network. Students will learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. This course, along with Network Engineering Technology I, will prepare students for the Cisco CCENT certification.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint
Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | INFORMATION TECHNOLOGY

COMPUTER ENGINEERING (COEN)

PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	BI12 CompTIA IT Fundamentals	II21 Computer Engineering Technology I	II22 Computer Engineering Technology II	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, CompTIA IT Fundamentals (FCO–U61) CompTIA A+ 1001, CompTIA IT Fundamentals, CompTIA A+ 1002 MTA 98–349 Operating System Fundamentals				
CTE Careers Existing Today and Tomorrow: Cybersecurity Sales Engineer, Embedded Software Application Engineer, Data Transmission Optimizer				

CTE Course Descriptions:

CTE COURSE 1
CompTIA IT Fundamentals
This course is designed for students to develop knowledge and skills required to identify and explain the basics of computing, IT infrastructure, application and software, software development, database fundamentals, and security. The course is also designed for students to develop the ability to demonstrate knowledge and skills to install software, establish basic network connectivity, identify or prevent basic security risks, explain troubleshooting theory, and provide preventative maintenance for devices.

CTE COURSE 2
Computer Engineering Technology I
Students will learn basic skills required for careers in information and computer technology. Emphasis will be placed on skills needed to safely configure, build, upgrade, diagnose, and maintain computers and peripherals, specifically PC hardware, networking, laptops, and operational procedures. Hands–on training experiences will be provided. This course will prepare students for the (901) portion of CompTIA A+ Certification. Developing technical writing skills will also be emphasized.

CTE COURSE 3
Computer Engineering Technology II
Learn the essential operating systems competencies for an entry–level PC service technician. These are also the skills needed for the (902) portion of CompTIA A+ Certification, a nationally recognized certification for computer service technicians. Students will demonstrate knowledge of building, installing, configuring, upgrading, troubleshooting, and repairing operating systems as well as the knowledge of PC security, mobile devices, and general troubleshooting. Hands–on experiences will provide opportunities to enhance classroom instruction and career development.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint
Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint.

The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | INFORMATION TECHNOLOGY

CTE CAREER PATHWAY COMPUTER SCIENCE PRINCIPLES (CSPR)				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	BP41 Computer Science Principles I	BP42 Computer Science Principles II **or** OA02 AP Computer Science Principles	2A02 AP Computer Science	Work-Based Learning: CTE Apprenticeship, Cooperative Education (Co-op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BI12 CompTIA IT Fundamentals BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, MTA 98-381 Introduction to Programming Using Python				
CTE Careers Existing Today and Tomorrow: Software Developer, Intellectual Property Associate, Data Stream Organizer				

CTE Course Descriptions:

CTE COURSE 1
Computer Science Principles I

Computer Science Principles I is an introductory course intended to familiarize students with the general concepts and thinking practices of computing, computer science, and information science. Students will learn computing concepts through authentic visual and interactive projects using visual programming languages. Students will focus on the "big CS ideas" in creative ways that emphasize conceptual knowledge and thinking practices, rather than on programming alone. The big ideas in CSP include computing as a creative activity, abstraction, facilitating knowledge creation through computing, algorithms, problem solving, the internet, and the global impact of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Strong communication skills are necessary, and English language arts, mathematics, science, and arts standards are reinforced.

CTE COURSE 2
Computer Science Principles II
This second-level introductory course in computer science (based on The Beauty and Joy of Computing) builds on the foundation of Computer Science Principles I. This course offers a more in-depth examination of the "big CS ideas," including a broad range of foundational topics, such as programming, algorithms, the internet, big data, digital privacy and security, and the societal impacts of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Students will extend their programming skills to include more complex constructs, including objects and data abstraction.

AP Computer Science Principles

This course introduces students to the range of the field of computer science. In this course, students will learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs. They will incorporate abstraction into programs and use data to discover new knowledge. Students will also explain how computing innovations and computing systems, including the internet, work, explore their potential impacts and contribute to a computing culture that is collaborative and ethical. It is important to note that the AP Computer Science Principles course does not have a designated programming language. Teachers have the flexibility to choose a

programming language(s) that is most appropriate for their students to use in the classroom.

CTE COURSE 3
AP Computer Science

AP Computer Science Principles is designed to introduce students to the creative aspects of programming, abstractions, algorithms, large data sets, the internet, cybersecurity concerns, and computing impacts. AP Computer Science Principles also gives students the opportunity to use current technologies to create computational artifacts for both self–expression and problem solving. This course is meant to be the equivalent of an introductory college course in Computer Science.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
CompTIA IT Fundamentals

This course is designed for students to develop knowledge and skills required to identify and explain the basics of computing, IT infrastructure, application and software, software development, database fundamentals, and security. The course is also designed for students to develop the ability to demonstrate knowledge and skills to install software, establish basic network connectivity, identify or prevent basic security risks, explain troubleshooting theory, and provide preventative maintenance for devices.

Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | INFORMATION TECHNOLOGY

CTE CAREER PATHWAY				
PYTHON PROGRAMMING (PYPR)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	BP14 Python Programming I	BP16 Python Programming II	2A02 AP Computer Science	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BI12 CompTIA IT Fundamentals BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, MTA 98–381 Introduction to Programming Using Python				
CTE Careers Existing Today and Tomorrow: Software Programmer, Virtual Property Associate, Automated Traffic Architect, Failure Point Assessor				

CTE Course Descriptions:

CTE COURSE 1
Python Programming I

This course is designed to introduce Python as a beginning course (not intended for experienced programmers). The course is designed for students to learn and practice coding in an online environment that requires only a modern web browser and internet connection. No special software is required to complete this course. The course includes video content, practice labs, and coding projects. Mathematical standards are reinforced, problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Strong communication skills are necessary, and English language arts, mathematics, science, and arts standards are reinforced.

CTE COURSE 2
BP16 Python Programming II

This course will prepare students for jobs and careers connected with widely understood software development, which includes not only creating the code itself as a junior developer, but also computer systems design and software testing. Students will be guided to a level of Python programming knowledge that will allow them to design, write, debug, and run programs encoded in the Python language, and to understand the basic concepts of software development technology. In addition, students will learn IoT (Internet of Things) skills, which can help transform any business in any industry, from manufacturing to saving endangered species. Students will apply basic programming (using Python) to support IoT devices. This course will prepare students for taking the PCAP: Certified Associate in Python Programming certification exam. Associate certification scaffolds to certification as a Certified Expert in Python Programming.

CTE COURSE 3
AP Computer Science

AP Computer Science Principles is designed to introduce students to the creative aspects of programming, abstractions, algorithms, large data sets, the internet, cybersecurity concerns, and computing impacts. AP Computer Science Principles also gives students the opportunity to use current technologies to create computational artifacts for both self-expression and problem solving. This course is meant to be the equivalent of an introductory college course in Computer Science.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
CompTIA IT Fundamentals

This course is designed for students to develop knowledge and skills required to identify and explain the basics of computing, IT infrastructure, application and software, software development, database fundamentals, and security. The course is also designed for students to develop the ability to demonstrate knowledge and skills to install software, establish basic network connectivity, identify or prevent basic security risks, explain troubleshooting theory, and provide preventative maintenance for devices.

Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | LAW, PUBLIC SAFETY, CORRECTIONS, & SECURITY

<table>
<tr><td colspan="6" align="center">CTE CAREER PATHWAY
EMERGENCY MANAGEMENT (EMMG)</td></tr>
<tr><td>PATHWAY COMPLETER</td><td>CTE COURSE 1</td><td>CTE COURSE 2</td><td>CTE COURSE 3</td><td>CTE CAREER PATHWAY MAJOR</td></tr>
<tr><td>CTE CONCENTRATOR</td><td rowspan="2">IP11 Public Safety I</td><td rowspan="2">IP51 Emergency Management I</td><td rowspan="2">IP52 Emergency Management II</td><td rowspan="2">Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship</td></tr>
<tr><td>CTE MAJOR</td></tr>
<tr><td>SUPPLEMENTAL CTE COURSES</td><td colspan="4">HU40 Health Science I</td></tr>
<tr><td>CAREER & COLLEGE PROMISE</td><td colspan="4">Approved Career & College Promise Career Technical Education Pathway</td></tr>
<tr><td colspan="5">CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, NC Emergency Management I Certification, National Incident Management System, Community Emergency Response Team (CERT) Certification</td></tr>
<tr><td colspan="5">CTE Careers Existing Today and Tomorrow: Public Safety Telecommunicator, Public Safety Risk Manager, Disaster Preparedness and Response Coordinator</td></tr>
</table>

CTE Course Descriptions:

CTE COURSE 1
Public Safety I

This course provides basic career information in public safety, including corrections, emergency, and fire management; security and protection; law enforcement; and legal services. Additionally, students will develop a personal plan for a career in public safety. The course includes skills in each area, using resources from the community to help deliver instruction to the students.

CTE COURSE 2
Emergency Management I

This course is aligned to the Emergency Management certifications from FEMA and are recommended by the North Carolina Emergency Management Office at the NC Department of Public Safety as appropriate for high school students. These certifications are required by professionals in this field. The course includes skills in each area of emergency management, using resources from the community to help deliver instruction to the students. Strong communication skills are necessary, and English language arts standards are reinforced. Work–based learning strategies appropriate for this course include job shadowing. Apprenticeships and cooperative education are not possible for this course. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

CTE COURSE 3
Emergency Management II

This course is the second in a series of courses aligned to the Emergency Management certifications from FEMA and are recommended by the North Carolina Emergency Management Office at the NC Department of Public Safety as appropriate for high school students. These certifications are those required by professionals in this field. The course includes skills in each area, using resources from the community to help deliver instruction to the students. Strong communication skills are necessary, and English language standards are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
CompTIA IT Fundamentals

This course is designed for students to develop knowledge and skills required to identify and explain the basics of computing, IT infrastructure, application and software, software development, database fundamentals, and security. The course is also designed for students to develop the ability to demonstrate knowledge and skills to install software, establish basic network connectivity, identify or prevent basic security risks, explain troubleshooting theory, and provide preventative maintenance for devices.

Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | LAW, PUBLIC SAFETY, CORRECTIONS, & SECURITY

CTE CAREER PATHWAY PUBLIC SAFETY (PUSA)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	IP11 Public Safety I	IP12 Public Safety II	IP52 Emergency Management I	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate				
CTE Careers Existing Today and Tomorrow: Central Intelligence Agency Supervisor, Planetary Protection Officer, Prison System Dismantlers, Driverless Operating System Traffic Controller				

CTE Course Descriptions:

CTE COURSE 1
Public Safety I

This course provides basic career information in public safety, including corrections, emergency and fire management, security and protection, law enforcement, and legal services. Additionally, students will develop a personal plan for a career in public safety. The course includes skills in each area, using resources from the community to help deliver instruction to the students.

CTE COURSE 2
Public Safety II

This course provides a deeper level of understanding of career information in public safety by focusing on the Community Emergency Response Team (CERT) Certification. CERT is a Federal Emergency Management Administration (FEMA) developed certification that incorporates all areas of public safety. Work–based learning strategies appropriate for this course include job shadowing. Apprenticeships and cooperative education are not available for this course. This

course prepares students for the FEMA CERT certification. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

CTE COURSE 3
Emergency Management I

This course is the first in a series of courses aligned to the Emergency Management certifications from FEMA and are recommended by the North Carolina Emergency Management Office at the NC Department of Public Safety as appropriate for high school students. These certifications are those required by professionals in this field. The course includes skills in

each area, using resources from the community to help deliver instruction to the students. English language arts are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | MANUFACTURING

CTE CAREER PATHWAY ELECTRONICS (ELEC)				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	IM31 Electronics I	IM32 Electronics II	IM33 Electronics III	Work-Based Learning: CTE Apprenticeship, Cooperative Education (Co-op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Electronics Technicians Association Certification: EM1, EM4, & EM2				
CTE Careers Existing Today and Tomorrow: Electronics Engineering Technician, Electronics Repair Specialist, Fusion System Integrator, Sensor Signal Engineer				

CTE Course Descriptions:

CTE COURSE 1
Electronics I

Learn electronic practices and fundamentals as you prepare for careers in electronics, communications, and IT. Hands-on activities and topics include safety, tools, test equipment, and soldering, focusing on the Electronic Career and Technical Education Technicians Association EM1 Module direct current

(DC). Students will learn Ohm's law, Kirchoff's law, electronic components, schematic diagrams, and electronic circuitry. Hands-on kit building projects will be used to reinforce classroom concepts. Students will have the opportunity to develop skills and earn national certification through the Electronics Technician Association (ETA). See www.eta-i.org for additional information on ETA.

CTE COURSE 2
Electronics II

This course covers advanced practices, principles, and special equipment and materials based upon the Electronic Technicians Association (ETA) areas of ETA (EM4) Digital Electronics. The course also includes introduction to microprocessors, microcontrollers, and computer architecture. Topics include safety, semiconductor devices, binary octal and hexadecimal systems, common electronic symbols, electrical drawings, registers, ascii code and computer electronics. Hands–on kit building projects will be used to reinforce classroom concepts. This course helps prepare students for ETA certification in Digital Electronics.

CTE COURSE 3
Electronics III

This course is based on the Electronic Technicians Association International (ETA–i) area of AC (EM2). Topics include AC components and terms; principles of inductance and capacitance; AC generator and motor theory; RC, RL, and RCL principles; general mathematics and formulas used in AC; and test equipment, cabling, and basic safety precautions.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | MANUFACTURING

CTE CAREER PATHWAY METALS MANUFACTURING (MEMA)				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	IM41 Metals Manufacturing Technology I	IM42 Metals Manufacturing Technology II	CS11 Project Management I	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, NIMS Certification				
CTE Careers Existing Today and Tomorrow: Welder, Automation Auditor, Manufacturing Technology Engineer, Futuristic Metals Designer, Aquatic Welder				

CTE Course Descriptions:

CTE COURSE 1

Metals Manufacturing Technology I

This course introduces various manufacturing processes and career opportunities in manufacturing with emphasis on machining metals parts. Topics include mathematics, layout, specifications, blueprints, hand tools, precision measuring instruments, lathes, drill presses, saws, and grinders. Students will have the opportunity to earn national certification through the National Institute of Metalworking Skills (NIMS). See www.nims-skills.org/web/nims/home for additional information on NIMS.

CTE COURSE 2

Metals Manufacturing Technology II

(2 Units)

This course provides advanced instruction in manufacturing processes and introduces CAD/CAM (Computer Assisted Drafting/Computer Aided Manufacturing) and CNC (Computer Numerical Control) processes. Topics include turning, milling, sawing, grinding, metallurgy, assembly techniques, machine tool maintenance, and welding/cutting operations. Students will have the opportunity to earn national certification through NIMS. See www.nims-skills.org/web/nims/home for additional information on NIMS.

CTE COURSE 3

CS11 Project Management I

Students will be introduced to the principles, concepts, and software applications used in the management of projects. Through project-based learning, students will understand how to use the framework of initiating, planning, executing, monitoring, controlling, and closing a project in authentic situations.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:

Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | MARKETING

CTE CAREER PATHWAY MARKETING MANAGEMENT (MMGT)				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	MM51 Marketing	MI42 Multichannel Merchandising	MA52 Marketing Applications	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, Customer Service and Sales Certification, Advanced Customer Service and Sales Certification, Fundamental Marketing Concepts				
CTE Careers Existing Today and Tomorrow: Inbound Marketing Specialist, Email Marketing Manager, Branding Specialist, Social Media Advertising				

CTE Course Descriptions:

CTE COURSE 1
Marketing

This course is designed to introduce students to the dynamic processes and activities in marketing. The experience includes students developing an understanding and skills in the areas of distribution, marketing–information management, market planning, pricing, product/service management, promotion, and selling. Also, students develop an understanding of marketing functions applications and impact on business operations. Strong communication skills are necessary, and English language arts, social studies and mathematics standards are reinforced.

CTE COURSE 2
Multichannel Merchandising

This course integrates the application of technical, management, and entrepreneurial skills pertinent for the merchandising industry. The merchandising industry topics of study include operation and management techniques, mathematics, market buying and allocation, entrepreneurship, ethics, forecasting, mobile consumer, and selling. Upon completion of the course, students should be ready for the merchandising industry at the entry level of work or post–secondary education. English, mathematics, social studies, and technology standards are reinforced. DECA (an association for Marketing Education students) competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

CTE COURSE 3
Marketing Applications

In this course, students will apply an understanding of marketing functions and impact of the functions on business decisions. Through problem solving and critical thinking, students will apply knowledge and skills in the areas of customer relations, economics, financial analysis, channel management, marketing–information management, marketing planning, products and services management, and selling. Relative opportunities are available for students to use technology to acquire and use marketing information. Strong communication skills are necessary, and English language arts, arts, and social studies standards are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | MARKETING

CTE CAREER PATHWAY				
SALES CAREER PATHWAY (PRSM)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	MM51 Marketing	MI31 Sales I	MI32 Sales II	Work-Based Learning: CTE Apprenticeship, Cooperative Education (Co-op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate				
CTE Careers Existing Today and Tomorrow: Remote Sales Manager, Technical Sales Coordinator, Virtual Product Sales Advisor				

CTE Course Descriptions:

CTE COURSE 1
Marketing

This course is designed to introduce students to the dynamic processes and activities in marketing. The experience includes students developing an understanding and skills in the areas of distribution, marketing-information management, market planning, pricing, product/service management, promotion, and selling. Also, students develop an understanding of marketing functions applications and impact on business operations. Strong communication skills are necessary, and English language arts, mathematics, and social studies standards are reinforced.

CTE COURSE 2
Sales I

This course will teach students the basic knowledge around the sales profession. Students will explore careers in selling, personal branding, communication skills, customer service, buying behavior, technology, types of selling, product knowledge, and the selling process. Project-based learning, English language arts, mathematics, and social studies standards are reinforced.

CTE COURSE 3
Sales II

This course will teach students the basic knowledge around the sales profession. Students will explore careers in selling, personal branding, communication skills, customer service, buying behavior, technology, types of selling, product knowledge, and the selling process. Project–based learning, English language arts, mathematics, and social studies standards are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | SCIENCE, TECHNOLOGY, ENGINEERING, & MATHEMATICS

CTE CAREER PATHWAY **TECHNOLOGY ENGINEERING & DESIGN (TEND)**				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	IC61 Drafting I	IV22 Drafting II – Engineering	IV23 Drafting III – Engineering	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate				
CTE Careers Existing Today and Tomorrow: Computer Aided Designer, Hospital and Health care Dismantler, Geoengineer Mass Energy Storage Developers				

CTE Course Descriptions:

CTE COURSE 1
Drafting I

In this entry–level course, students are introduced to tools used to effectively communicate ideas and concepts found in architecture, manufacturing, engineering, science, and mathematics. Topics include the fundamentals of manual drawing–board drafting techniques, sketching, geometry, and geometric construction drawings. Students will learn the basics of simple and complex techniques used in 2D and 3D computer–aided drafting (CAD), while developing basic leadership skills and goal-setting strategies. This course incorporates the Autodesk digital science, technology, engineering, art, math (STEAM) curriculum and will help prepare students for the Autodesk Certified User certification in AutoCAD.

CTE COURSE 2
Drafting II – Engineering

This course introduces students to the use of graphic tools necessary to communicate, analyze, and understand the ideas and concepts found in areas of engineering, science, and mathematics. Topics include teaming and communication skills, 3D modeling, manufacturing processes, dimensioning

and conventional tolerancing, sectional views, auxiliary views, and pattern development using CAD software. Students will demonstrate learning through performances, presentations, demonstrations, applications, processes, and products. This course will help prepare students for the Autodesk Certified User certification in Inventor.

CTE COURSE 3
Drafting III – Engineering

This course introduces students to the use of graphics tools necessary to communicate, analyze, and understand the ideas and concepts found in the areas of engineering, science, and mathematics. Topics include the engineering design process, constraint–based/parametric modeling, threads and fasteners, working drawings, basic geometric dimensioning

and tolerancing, and portfolio development. Students will be required to demonstrate learning through performances, presentations, demonstrations, applications, processes, and products. This course will help prepare students for the Autodesk Certified User certification in Inventor.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | SCIENCE, TECHNOLOGY, ENGINEERING, & MATHEMATICS

CTE CAREER PATHWAY **DRAFTING ENGINEERING (DREN)**				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	TL04 Engineering Technology I	TL05 Engineering Technology II	TL06 Engineering Technology III	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate				
CTE Careers Existing Today and Tomorrow: Mechanical Engineer, Industrial Engineer, Avionics Engineer				

CTE Course Descriptions:

CTE COURSE 1
Engineering Technology I

This course prepares students to understand and apply technological concepts and processes that are the cornerstone of today's designed world. Students will study the nature of technology, the impacts of technology, and the multiple techno-logical systems that affect daily living. Students will engage

in small group and individual activities where they develop innovations, and design, fabricate, and engineer practical solutions to a variety of problems. Technology content, resources, and lab activities will enable students to apply science, mathematics, and other subject areas in authentic situations while reinforcing problem-solving and critical-thinking skills.

CTE COURSE 2
Engineering Technology II

This second-level course explores important fundamentals in the field of engineering. Students will learn the technology and engineering concepts that are necessary to turn their ideas into solutions that will improve everyday life. Exciting hands–on learning activities involving electricity, electromagnetism, design and modeling, and fluid power are just a few of the ways to make learning science and math engaging and fun! Problem-solving and critical-thinking skills will be a focus and reinforced with project–based learning.

CTE COURSE 3
Engineering Technology III

This advanced course provides more opportunities for students to connect technology and engineering content together and apply it to solve real–world problems. More and more jobs demand advanced skills, including the ability to reason, think creatively, make decisions, and work in a team environment. A good understanding of science, technology, engineering, and math and their methods contribute in an essential way. Topics in this course will include electricity, mechanisms, system optimization, technical communication, and project management.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | TRANSPORTATION, DISTRIBUTION, & LOGISTICS

CTE CAREER PATHWAY AVIATION (AVIA)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	IL77 Aviation I	IL78 Aviation II	IK30 Aviation Manufacturing	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	IC61 DRAFTING I (This supplemental course is essential for and should be taken prior to starting the Aviation Pathway.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate				
CTE Careers Existing Today and Tomorrow: Aviation Technician, Experimental Test Pilot, Aviation Safety Inspector, Avionics Engineer, Drone Repair Expert				

CTE Course Descriptions:

CTE COURSE 1
Aviation I

This course introduces students to the general aspects of aviation fundamentals, including aviation mathematics, drawings, and blueprints; basic electricity; weight; and balance as well as ground operation on a simulator. Upon successful completion of this course, students will understand and demonstrate aviation concepts and flight principles through real–world scenarios and project–based activities.

CTE COURSE 2
Aviation II

This course introduces students to many of the general aspects within the aviation industry, such as regulations, fluid lines and fittings, tool usage, riveting sheet metal, flight instruments, and meteorology. Upon successful completion of this course, students will be able to apply and demonstrate aviation concepts and navigational flight through real-world scenarios and project-based activities.

CTE COURSE 3
Aviation Manufacturing

This course will examine concepts and materials used in design, manufacturing, and repair of aircraft metallic structures. Topics include aircraft design, tool usage, metallic structures, riveting, bending, corrosion repair, corrosion prevention, and aircraft repair. Upon successful completion of this course, students will have many of the necessary skills to be employable in an aircraft repair facility with minimal additional training.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Drafting I

In this entry-level course, students are introduced to tools used to effectively communicate ideas and concepts found in architecture, manufacturing, engineering, science, and mathematics. Topics include the fundamentals of manual drawing-board drafting techniques, sketching, geometry, and geometric construction drawings. Students will learn the basics of simple and complex techniques used in 2D and 3D computer-aided drafting (CAD), while developing basic leadership skills and goal-setting strategies. This course incorporates the Autodesk digital science, technology, engineering, art, math (STEAM) curriculum and will help prepare students for the Autodesk Certified User certification in AutoCAD.

CTE Career Cluster | TRANSPORTATION, DISTRIBUTION, & LOGISTICS

CTE CAREER PATHWAY AUTOMOTIVE SERVICES (AUTO)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	IT11 Automotive Service Fundamentals	IT16 Automotive Service I	IT17 Automotive Service II	IT18 Automotive Service III Work-Based Learning: CTE Apprenticeship, Cooperative Education (Co-op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, ASE Entry-Level Certification Maintenance and Light Repair, ASE Entry-Level Certification-Brakes, ASE Auto Maintenance and Light Repair Certification (G1), ASE Entry-Level Certification-Electrical/Electronic Systems				
CTE Careers Existing Today and Tomorrow: Auto Mechanic, Traffic Transitionist, Drone Repair Technician, Process Automation Auditor				

CTE Course Descriptions:

CTE COURSE 1
Automotive Service Fundamentals

This course introduces basic automotive skills and job opportunities in the auto repair industry. As part of the NATEF accreditation, topics are aligned to the Maintenance and Light Repair (MLR) requirements, which include automotive service and safety, tools and equipment, general engine components and repair, combustion and ignition systems, cylinder head and valve trains, and lubrication and cooling systems as well as manual and automatic transmission components, diagnosis, and repair.

CTE COURSE 2
Automotive Service I

This course develops automotive knowledge and skills in performing scheduled automotive maintenance, servicing and basic testing of brakes, electrical systems, drivetrain, engine, HVAC, and steering and suspension systems while emphasizing hands–on experience. As part of the NATEF accreditation, topics are aligned to MLR requirements. Strong communication skills are necessary, and English language arts standards are reinforced. Work–based learning strategies appropriate for this course include job shadowing. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

CTE COURSE 3
Automotive Service II

Develop advanced knowledge and skills in vehicle system repair and/or replacement of components in the brakes, electrical systems, drivetrain, engine, HVAC, and steering and suspension systems while emphasizing hands–on experience. As part of the NATEF accreditation, topics are aligned to the MLR requirements. Strong communication skills are necessary, and English language arts standards are reinforced. This course helps prepare students for the Automotive Service Excellence (ASE) certification in Maintenance and Light Repair (MLR–G1). SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

CTE CAREER PATHWAY MAJOR:
Automotive Service III

In this course, students will continue to increase skills and knowledge in vehicle servicing, testing, repair, and diagnosis of brakes, electrical systems, drivetrain, engine, HVAC, and steering and suspension systems while emphasizing hands–on experience. As part of the NATEF accreditation, topics are aligned to the MLR requirements. Strong communication skills are necessary, and English language arts and mathematics standards are reinforced. This course helps prepare students for the ASE certification in MLR–G1. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | TRANSPORTATION, DISTRIBUTION, & LOGISTICS

CTE CAREER PATHWAY				
COLLISION REPAIR (COLL)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	IT30 Collision Repair Fundamentals	IT31 Collision Repair I	IT32 Collision Repair II Nonstructural or IT33 Collision Repair II Refinishing	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, I–CAR Platinum–Nonstructural Technician				
CTE Careers Existing Today and Tomorrow: Body Shop Repair Technician, Digital Refinishing Processor, eVTOL Designer				

CTE Course Descriptions:

CTE COURSE 1
Collision Repair Fundamentals

This course introduces safety, basic collision repair termi- nology, system and component identification, knowledge about and introductory skills in hand tools and shop equipment, basic servicing, and use of service information. Careers and various job opportunities in the collision repair industry will also be discussed. Strong communication skills are necessary, and English language arts standards are reinforced. Work– based learning strategies appropriate for this course include job shadowing. Apprenticeships and cooperative education are not available for this course. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace- readiness skills through authentic experiences.

CTE COURSE 2
Collision Repair I

This course focuses on nonstructural repairs to automobiles. Using curriculum materials from the industry–recognized ICAR organization, students will learn about trim and hardware, material identification, steel cosmetic straight- ening and plastic repair, moveable glass replacement, and bolted–on parts replacement. Work–based learning strategies

appropriate for this course include apprenticeship, cooperative education, entrepreneurship, internship, and job shadowing. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

CTE COURSE 3
Collision Repair II Nonstructural

This course continues the focus on nonstructural repairs to automobiles. Using curriculum materials from the industry– recognized ICAR organization, students will learn additional information about trim and hardware, material identification, steel cosmetic straightening and plastic repair, moveable glass replacement, and bolted–on parts replacement. Work–based learning strategies appropriate for this course include appren- ticeship, cooperative education, entrepreneurship, internship, and job shadowing. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

Collision Repair II Refinishing

This course focuses on refinishing automobiles. Using

curriculum from the industry-recognized ICAR organization, students will learn about repairing and priming vehicles and vehicle parts; using and maintaining a spray gun; mixing, storing, and disposing of hazardous materials; understanding the corrosion protection process; and buffing, and detailing a refinished vehicle. Work–based learning strategies appropriate for this course include apprenticeship, cooperative education, entrepreneurship, internship, and job shadowing. SkillsUSA competitive events, community service, and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | TRANSPORTATION, DISTRIBUTION, & LOGISTICS

CTE CAREER PATHWAY DIESEL TECHNOLOGY (DISL)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	IL50 Diesel Technology I	IL51 Diesel Technology II	IL52 Diesel Technology III	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: WorkKeys National Career Readiness Certificate, ASE Technician Certification in Truck Equipment (E1–E3) and Medium and Heavy Truck (T1–T8)				
CTE Careers Existing Today and Tomorrow: Diesel Technician, Heavy Equipment Operator, Paving/Surface Equipment Operators, Self–Driving Truck Mechanic				

CTE Course Descriptions:

CTE COURSE 1
Diesel Technology I

High–tech diesel engines are found in trucks, heavy equipment, RVs, buses, and automobiles. Through proper safety applications, tools, and leadership development, students will apply the knowledge and skills needed to repair electrical, brakes, and suspension systems. Hands–on activities will include working on actual vehicles, engines, and simulated trainers to enhance the classroom experience. Students will develop a basic understanding of engine

operation and electronic–controlled engines using computer diagnostic software.

CTE COURSE 2
Diesel Technology II

This course emphasizes the necessary advanced skills to troubleshoot and repair complex electronic-controlled engines using computer diagnostic software. Through proper safety and tool use, specific instruction is provided to troubleshoot and repair diesel engines. Topics include disassembly and

assembly of engines, electrically controlled systems, and power trains used in heavy–duty trucks, buses, and heavy equipment. Students will prepare for ASE technician certification in Truck Equipment (E1–E3) as well as the Medium and Heavy Truck (T1–T8) certification. See **www.ase.com** for additional information on ASE.

CTE COURSE 3
Diesel Technology III

Students in this course will examine advanced diesel engine concepts that involve engine block rebuild techniques, cylinder heads, and valve trains as well as engine block inspections and service. Students will practice proper welding and fabrication procedures and understand how hydraulic systems are an integral part of today's heavy-duty and off–road vehicles. Students will prepare for ASE technician certification in Truck Equipment (E1–E3) as well as the Medium and Heavy Truck (T1–T8) certification. See **www.ase.com** for additional information on ASE.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

Signature Career Academy: Academy of Biomedical Technology and Specialized Health Sciences

Location: The Academy at Smith

Students attending the **Academy of Biomedical Technology and Specialized Health Sciences** at the Academy at Smith will use the equipment and tools of medical researchers to explore and find solutions to some of today's most pressing medical challenges. Mentorship from industry professionals is an expected element of each student's program of study. Students are expected to graduate with industry credentials and professional, technical, and research skills, as well as college credits, making this an appealing school for students wishing to continue education in the medical field. Majors in this academy include PLTW Biotechnology Research and Development, Pharmacy Technician, and Counseling and Mental Health. Students in the Signature Career Academies matriculate with their cohort through grades 9–12.

CTE Career Cluster | HEALTH SCIENCE

CTE CAREER PATHWAY PLTW BIOTECHNOLOGY RESEARCH AND DEVELOPMENT (PLWB)				
PATHWAY COMPLETER	CTE COURSE 1	CTE COURSE 2	CTE COURSE 3	CTE CAREER PATHWAY MAJOR
CTE CONCENTRATOR	HU10 Foundations of Health Sciences and HP70 PLTW Principles of Biomedical Sciences	HP71 PLTW Human Body Systems	HP72 PLTW Medical Interventions	HP73 PLTW Biomedical Innovations Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	HU40 Health Science IHU42 Health Science II (The above supplemental courses are essential for Block Schedules and should be taken in sequential order.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: CPR/AED, First Aid				
CTE Careers Existing Today and Tomorrow: Genetics Expert, Super Baby Designer, Body Modification Ethicist				

CTE Course Descriptions:

CTE COURSE 1
Foundations of Health Science

This course is designed to assist potential health care workers in their role and function as health team members. Topics include medical terminology, the history of health care, health care agencies, ethics, legal responsibilities, health careers, holistic health, health care trends, cultural awareness, communication, medical math, leadership, and career decision-making. Strong communication skills are necessary, and English language arts and science standards are reinforced. Community service and leadership activities will provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

PLTW Principles of Biomedical Sciences

This course allows students to apply their knowledge and skills to answer questions or solve problems related to biomedical sciences. Students design innovative solutions to the health care challenges of the 21st century. Students work on independent projects and may work with a mentor in the health care industry. Strong communication skills are necessary, and English language arts and science standards are reinforced.

CTE COURSE 2
PLTW Human Body Systems

In this course students examine the human body systems, design experiments, and use data acquisition software to monitor body functions and often play the role of the biomedical professional. Strong communication skills are necessary, and English language arts and science standards are reinforced.

CTE COURSE 3
PLTW Medical Interventions

This course allows students to investigate the interventions involved in the prevention, diagnosis, and treatment of disease. It is a how–to manual for maintaining overall health. Strong communication skills are necessary, and English language arts and science standards are reinforced.

CTE CAREER PATHWAY MAJOR
PLTW Principles of Biomedical Sciences

This course allows students to apply their knowledge and skills to answer questions or solve problems related to biomedical sciences. Students will design innovative solutions to the health care challenges of the 21st century. Students will work on independent projects and may work with a mentor in the health care industry.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Health Science I

This course focuses on human anatomy, physiology, human body diseases and disorders, and biomedical therapies. Students will learn about health care careers within the context of human body systems. Projects, teamwork, and demonstrations serve as instructional strategies that reinforce the curriculum content. Strong communication skills are necessary, and English language arts, and science standards are reinforced.

Health Science II

This course is designed to help students expand their understanding of financing and trends of health care agencies, fundamentals of wellness, legal and ethical issues, concepts of teamwork, and effective communication. Students will learn health care skills, including current CPR and first aid training for health care professionals. Strong communication skills are necessary, and English language arts, and science standards are reinforced.

CTE Career Cluster | HEALTH SCIENCE

CTE CAREER PATHWAY PHARMACY TECHNICIAN (PHTC)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	HU10 Foundations of Health Science	HU40 Health Science I	HU42 Health Science II	HH32 Pharmacy Technician Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	HP70 PLTW Principles of Biomedical Sciences HP71 PLTW Human Body Systems HP72 PLTW Medical Interventions (The above supplemental courses are essential for Block Schedules and should be taken in sequential order.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: CPR/AED, First Aid				
CTE Careers Existing Today and Tomorrow: Genetics Expert, Super Baby Designer, Body Modification Ethicist				

CTE Course Descriptions:

CTE COURSE 9TH GRADE
Foundations of Health Science

This course is designed to assist potential health care workers in their role and function as health team members. Topics include medical terminology, the history of health care, health care agencies, ethics, legal responsibilities, health careers, holistic health, health care trends, cultural awareness, communication, medical math, leadership, and career decision-making. Strong communication skills are necessary, and English language arts, and science standards are reinforced.

CTE COURSE 10TH GRADE
Health Science I

This course focuses on human anatomy, physiology, human body diseases and disorders, and biomedical therapies. Students will learn about health care careers within the context of human body systems. Projects, teamwork, and demonstrations serve as instructional strategies that reinforce the curriculum content. Strong communication skills are necessary, and English language arts, and science standards are reinforced.

CTE COURSE 11TH GRADE
Health Science II

This course is designed to help students expand their understanding of financing and trends of health care agencies, fundamentals of wellness, legal and ethical issues, concepts of teamwork, and effective communication. Students will learn health care skills, including current CPR and first aid training for health care professionals. Strong communication skills are necessary, and English language arts, and science standards are reinforced.

CTE CAREER PATHWAY 12TH GRADE:
Pharmacy Technician
Recommended Prerequisite: B or better in Math II

This course has self–paced, online instruction designed to prepare high school seniors for a pharmacy technician career. Topics included in this course are federal law, medication used in major body systems, calculations, and pharmacy operations. Mathematics is reinforced in this course.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:

PLTW Principles of Biomedical Sciences

This course allows students to apply their knowledge and skills to answer questions or solve problems related to biomedical sciences. Students design innovative solutions to the health care challenges of the 21st century. Students work on independent projects and may work with a mentor in the health care industry. Strong communication skills are necessary, and English language arts, and science standards are reinforced.

PLTW Human Body Systems

In this course, students examine the human body systems, design experiments, and use data acquisition software to monitor body functions and often play the role of the biomedical professional. Strong communication skills are necessary, and English language arts, and science standards are reinforced.

PLTW Medical Interventions

This course allows students to investigate the interventions involved in the prevention, diagnosis, and treatment of disease. It is a how–to manual for maintaining overall health. Strong communication skills are necessary, and English language arts, and science standards are reinforced.

CTE Career Cluster | HUMAN SERVICES

CTE CAREER PATHWAY COUNSELING AND MENTAL HEALTH (CMHC)				
PATHWAY COMPLETER	**CTE COURSE 1**	**CTE COURSE 2**	**CTE COURSE 3**	**CTE CAREER PATHWAY MAJOR**
CTE CONCENTRATOR	HU10 Foundations of Health Science	FC13 Counseling and Mental Health I	FC14 Counseling and Mental Health II	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	Health Science I Health Science II (The above supplemental courses are essential for Block Schedules and should be taken in sequential order.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: Mental Health Technician				
CTE Careers Existing Today and Tomorrow: Behavioral Health Specialist, Outpatient Therapist, Psychologist, Sociologist, Quantified Self–Assessment Auditor				

CTE Course Descriptions:

CTE COURSE 9TH GRADE

Foundations of Health Science

This course is designed to assist potential health care workers in their role and function as health team members. Topics include medical terminology, the history of health care, health care agencies, ethics, legal responsibilities, health careers, holistic health, health care trends, cultural awareness, communication, medical math, leadership, and career decision-making. Strong communication skills are necessary, and English language arts, and science standards are reinforced.

CTE COURSE 10TH GRADE

Counseling and Mental Health I

This course is designed to introduce students to the counseling and mental health field through understanding how to create healthy, respectful, and caring relationships across the lifespan. Emphasis is placed on understanding mental health, family and friend dynamics, effective communication, and healthy intrapersonal and interpersonal relationships. English/language arts, social studies, and technology standards are reinforced. Family, Career and Community Leaders of America (FCCLA) competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

CTE COURSE 11TH GRADE

Counseling and Mental Health II

Students in this course will gain a deeper understanding for the counseling and mental health field and factors that affect mental health. Emphasis is placed on understanding the human brain and psyche, theories of development, mental disorders, treatment options, and teen violence issues. Activities engage students in exploring various counseling and mental health careers, while building essential life literacy skills they can apply in their own lives to achieve optimal well-being. English/language arts, social studies, science, technology, and interpersonal relationships are reinforced. Work–based learning strategies appropriate for this course include service-learning and job shadowing. Family, Career and Community Leaders of America (FCCLA) competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace-readiness skills through authentic experiences.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:

Health Science I

This course focuses on human anatomy, physiology, human body diseases and disorders, and biomedical therapies. Students will learn about health care careers within the context of human body systems. Projects, teamwork, and demonstrations serve as instructional strategies that reinforce the curriculum content. Strong communication skills are necessary, and English language arts, and science standards are reinforced.

Health Science II

This course is designed to help students expand their understanding of financing and trends of health care agencies, fundamentals of wellness, legal and ethical issues, concepts of teamwork, and effective communication. Students will learn health care skills, including current CPR and first aid training for health care professionals. Strong communication skills are necessary, and English language arts, and science standards are reinforced.

Location: Kearns Academy

Students attending the **Academy of Computer and Information Science** at Dorothy Kearns Academy will explore emerging areas of technology, such as ethical hacking and data analytics. Students are expected to graduate with a series of industry certifications, professional and technical skills, and college credits, making them ready to enter one of the fastest-growing, highest-paid professions available. Experiences provided through our industry partners will help students connect learning to the real challenges faced by computer scientists. Majors in this academy include Cyber-security and Artificial Intelligence. This academy has an assigned attendance zone. Students in the Signature Career Academies matriculate with their cohort through grades 9–12.

CTE Career Cluster | INFORMATION TECHNOLOGY

CTE CAREER PATHWAY				
CYBERSECURITY (CBSY)				
PATHWAY COMPLETER	CTE COURSE 9TH GRADE	CTE COURSE 10TH GRADE	CTE COURSE 11TH GRADE	CTE CAREER COURSE 12TH GRADE
CTE CONCENTRATOR	BP41 Computer Science Principles I	BC10 Cybersecurity Essentials	BN31 Network Security I	BN32 Network Security II Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BP42 Computer Science Principles II or 0A02 AP Computer Science Principles BI12 CompTIA IT Fundamentals I (The above supplemental courses are essential for Block Schedules and should be taken in sequential order.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: CompTIA IT Fundamentals, Palo Alto Networks Certified Cybersecurity Associate (PCCSA), CompTIA Security+				
CTE Careers Existing Today and Tomorrow: Behavioral Health Specialist, Outpatient Therapist, Psychologist, Sociologist, Quantified Self–Assessment Auditor				

CTE Course Descriptions:

CTE COURSE 9TH GRADE
Computer Science Principles I

Computer Science Principles I is an introductory course intended to familiarize students with the general concepts and thinking practices of computing, computer science, and information science. Students will learn computing concepts through authentic visual and interactive projects using visual programming languages. Students will focus on the "big CS ideas" in creative ways that emphasize conceptual knowledge and thinking practices, rather than on programming alone. The big ideas in CSP include computing as a creative activity, abstraction, facilitating knowledge creation through computing, algorithms, problem solving, the internet, and the global impact of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Strong communication skills are necessary, and English language arts, mathematics, and science standards are reinforced.

CTE COURSE 10TH GRADE
Cybersecurity Essentials

This course is designed for students who are considering IT as a career with specialization in cybersecurity. This foundational course provides an overview of the fundamentals of networking and general concepts involved in maintaining a secure network computing environment. This course also provides students with and overview of the fundamentals of cybersecurity, the nature and scope of today's cybersecurity challenges, strategies for network defense, as well as detailed information about next-generation cybersecurity solutions. Strong communication skills are necessary and English language arts, mathematics, science, and social studies standards are reinforced.

CTE COURSE 11TH GRADE
Network Security I

This course is designed to provide students with a solid foundation in Network Security. The experience includes students focusing on threats, attacks and vulnerabilities, technologies and tools, and architecture and design. Strong communication skills are necessary and English language arts, mathematics, science, and social studies standards are reinforced.

CTE CAREER PATHWAY 12TH GRADE
Network Security II

This course is designed to prepare students are prepared with the skills and knowledge to install, configure, and troubleshoot computer networks. The experience includes students focusing on the identifying and accessing management, risk management, and cryptography and PKI. Strong communication skills are necessary and English language arts, mathematics, science, and social studies standards are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Computer Science Principles II

This second-level introductory course in computer science (based on The Beauty and Joy of Computing) builds on the foundation of Computer Science Principles I. This course offers a more in-depth examination of the "big CS ideas" including a broad range of foundational topics such as programming, algorithms, the internet, big data, digital privacy and security, and the societal impacts of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Students will extend their programming skills to include more complex constructs including objects and data abstraction. As an option, performance tasks may be included to obtain AP credit.

AP Computer Science Principles

This ßsecond-level introductory course in computer science (based on The Beauty and Joy of Computing) builds on the foundation of Computer Science Principles I. This course offers a more in-depth examination of the "big CS ideas" including a broad range of foundational topics such as programming, algorithms, the internet, big data, digital privacy and security, and the societal impacts of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Students will extend their programming skills to include more complex constructs including objects and data abstraction. As an option, performance tasks may be included to obtain AP credit.

CTE Career Cluster | INFORMATION TECHNOLOGY

CTE CAREER PATHWAY				
ARTIFICIAL INTELLIGENCE (AI)				
PATHWAY COMPLETER	**CTE COURSE 9TH GRADE**	**CTE COURSE 10TH GRADE**	**CTE COURSE 11TH GRADE**	**CTE CAREER COURSE 12TH GRADE**
CTE CONCENTRATOR	BP41 Computer Science Principles I	Artificial Intelligence I	Artificial Intelligence II	Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BP42 Computer Science Principles II or 0A02 AP Computer Science Principles BI12 CompTIA IT Fundamentals BP14 Python Programming (The above supplemental courses are essential for Block Schedules and should be taken in sequential order.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: MTA 98–381 Introduction to Programming Using Python; Artificial Intelligence Engineering (AIE)				
CTE Careers Existing Today and Tomorrow: Software Developer, Intellectual Property Associate, Application Development Leader, Machine Learning Engineer				

CTE Course Descriptions:

CTE COURSE 9TH GRADE
Computer Science Principles I

Computer Science Principles I is an introductory course intended to familiarize students with the general concepts and thinking practices of computing, computer science, and information science. Students will learn computing concepts through authentic visual and interactive projects using visual programming languages. Students will focus on the "big CS ideas" in creative ways that emphasize conceptual knowledge and thinking practices, rather than on programming alone. The big ideas in CSP include computing as a creative activity, abstraction, facilitating knowledge creation through computing, algorithms, problem solving, the internet, and the global impact of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Strong communication skills are necessary, and English language arts, science standards, and mathematical standards are reinforced.

CTE COURSE 10TH GRADE
Artificial Intelligence I

Artificial intelligence, or AI, enables computer systems to perform tasks that normally require human intelligence, such as visual perception, speech recognition, and decision–making. In this class, students will explore how and what types of data can be collected for AI systems how computers can "learn" from these data and use what is learned to help interpret the world and make decisions. Students will identify and explore the implications of AI systems currently in everyday use in areas such as social media, mapping software, and financial institutions and consider the emerging areas where AI will be applied. Topics also include how AI has been portrayed in popular culture, how AI systems interact with humans, and the ethical considerations surrounding potential societal harm from inappropriately designed, trained, and/or applied AI systems. Students have opportunities to experiment and compute as they explore and solve problems associated with AI.

CTE COURSE 11TH GRADE
Artificial Intelligence II

Artificial intelligence, or AI, enables computer systems to perform tasks that normally require human intelligence, such as visual perception, speech recognition, and decision–making. In this class, students will explore how and what types of data can be collected for AI systems, and how computers can "learn" from these data and use what is learned to help interpret the world and make decisions. Students will identify and explore the implications of AI systems currently in everyday use in areas such as social media, mapping software, and financial institutions and consider the emerging areas where AI will be applied. Topics also include how AI has been portrayed in popular culture, how AI systems interact with humans, and the ethical considerations surrounding potential societal harm from inappropriately designed, trained, and/or applied AI systems. Students have opportunities to experiment and compute as they explore and solve problems associated with AI.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Computer Science Principles II

This second-level introductory course in computer science (based on The Beauty and Joy of Computing) builds on the foundation of Computer Science Principles I. This course offers a more in–depth examination of the "big CS ideas" including a broad range of foundational topics such as programming, algorithms, the internet, big data, digital privacy and security, and the societal impacts of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Students will extend their programming skills to include more complex constructs including objects and data abstraction. As an option, performance tasks may be included to obtain AP credit.

AP Computer Science Principles

This second-level introductory course in computer science (based on The Beauty and Joy of Computing) builds on the foundation of Computer Science Principles I. This course offers a more in–depth examination of the "big CS ideas," including a broad range of foundational topics such as programming, algorithms, the internet, big data, digital privacy and security, and the societal impacts of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Students will extend their programming skills to include more complex constructs, including objects and data abstraction. As an option, performance tasks may be included to obtain AP credit.

Location: Northeast High School

Students attending the **Academy of Computer and Information Science** at Northeast Guilford High School will learn to interact with computers and computer systems through coding, networking, and data analytics. Students are expected to graduate with a series of industry certifications, professional and technical skills, and college credits, making them ready to enter one of the fastest-growing, highest-paid professions in the world. Experiences provided through our industry partners will help students connect learning to the real challenges faced by computer scientists. Majors in this academy include Cybersecurity and Artificial Intelligence. This academy has an assigned attendance zone. Students in the Signature Career Academies matriculate with their cohort through grades 9–12.

CTE Career Cluster | INFORMATION TECHNOLOGY

CTE CAREER PATHWAY CYBERSECURITY (CBSY)				
PATHWAY COMPLETER	**CTE COURSE 9TH GRADE**	**CTE COURSE 10TH GRADE**	**CTE COURSE 11TH GRADE**	**CTE CAREER COURSE 12TH GRADE**
CTE CONCENTRATOR	BP41 Computer Science Principles I	BC10 Cybersecurity Essentials	BN31 Network Security I	BN32 Network Security II Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BP42 Computer Science Principles II or 0A02 AP Computer Science Principles BI12 CompTIA IT Fundamentals (The above supplemental courses are essential for Block Schedules and should be taken in sequential order.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: CompTIA IT Fundamentals, Palo Alto Networks Certified Cybersecurity Associate (PCCSA), CompTIA Security+				
CTE Careers Existing Today and Tomorrow: Sales Engineer, Embedded Software Application Engineer, Intellectual Property Associate, Data Stream Organizer				

CTE Course Descriptions:

CTE COURSE 9TH GRADE
Computer Science Principles I

An introductory course intended to familiarize students with the general concepts and thinking practices of computing, computer science, and information science. Students will learn computing concepts through authentic visual and interactive projects using visual programming languages. Students will focus on the "big CS ideas" in creative ways that emphasize conceptual knowledge and thinking practices, rather than on programming alone. The big ideas in CSP include computing as a creative activity, abstraction, facilitating knowledge creation through computing, algorithms, problem solving, the internet, and the global impact of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Art, English language arts, and mathematical standards are reinforced.

CTE COURSE 10TH GRADE
Artificial Intelligence I

Artificial intelligence, or AI, enables computer systems to perform tasks that normally require human intelligence, such as visual perception, speech recognition, and decision–making. In this class, students will explore how and what types of data can be collected for AI systems, and how computers can "learn" from these data and use what is learned to help interpret the world and make decisions. Students will identify and explore the implications of AI systems currently in everyday use in areas such as social media, mapping software, and financial institutions and consider the emerging areas where AI will be applied. Topics also include how AI has been portrayed in popular culture, how AI systems interact with humans, and the ethical considerations surrounding potential societal harm from inappropriately designed, trained, and/or applied AI systems. Students have opportunities to experiment and compute as they explore and solve problems associated with AI.

CTE COURSE 11TH GRADE
Artificial Intelligence II

Artificial intelligence, or AI, enables computer systems to perform tasks that normally require human intelligence, such as visual perception, speech recognition, and decision–making. In this class, students will explore how and what types of data can be collected for AI systems, and how computers can "learn" from these data and use what is learned to help interpret the world and make decisions. Students will identify and explore the implications of AI systems currently in everyday use in areas such as social media, mapping software, and financial institutions and consider the emerging areas where AI will be applied. Topics also include how AI has been portrayed in popular culture, how AI systems interact with humans, and the ethical considerations surrounding potential societal harm from inappropriately designed, trained, and/or applied AI systems. Students have opportunities to experiment and compute as they explore and solve problems associated with AI.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Computer Science Principles II

This second-level introductory course in computer science (based on The Beauty and Joy of Computing) builds on the foundation of Computer Science Principles I. This course offers a more in–depth examination of the "big CS ideas," including a broad range of foundational topics such as programming, algorithms, the internet, big data, digital privacy and security, and the societal impacts of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Students will extend their programming skills to include more complex constructs, including objects and data abstraction. As an option, performance tasks may be included to obtain AP credit.

AP Computer Science Principles

This second-level introductory course in computer science (based on The Beauty and Joy of Computing) builds on the foundation of Computer Science Principles I. This course offers a more in–depth examination of the "big CS ideas," including a broad range of foundational topics such as programming, algorithms, the internet, big data, digital privacy and security, and the societal impacts of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Students will extend their programming skills to include more complex constructs, including objects and data abstraction. As an option, performance tasks may be included to obtain AP credit.

CompTIA IT Fundamentals

This course is designed for students to develop knowledge and skills required to identify and explain the basics of computing, IT infrastructure, application and software, software development, database fundamentals, and security. The course is also designed for students to develop the ability to demonstrate knowledge and skills to install software, establish basic network connectivity, identify or prevent basic security risks, explain troubleshooting theory, and provide preventative maintenance for devices.

Python Programming I

This course is designed to introduce Python as a beginning course (not intended for experienced programmers). The course is designed for students to learn and practice coding in an online environment that requires only a modern web browser and internet connection. No special software is required to complete this course. The course includes video content, practice labs, and coding projects. Strong mathematical skills are necessary, and mathematics standards are reinforced.

CTE Career Cluster | INFORMATION TECHNOLOGY

CTE CAREER PATHWAY ARTIFICIAL INTELLIGENCE (AI)				
PATHWAY COMPLETER	**CTE COURSE 9TH GRADE**	**CTE COURSE 10TH GRADE**	**CTE COURSE 11TH GRADE**	**CTE CAREER COURSE 12TH GRADE**
CTE CONCENTRATOR	BP41 Computer Science Principles I	Artificial Intelligence I	Artificial Intelligence II	BN32 Network Security II Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BP42 Computer Science Principles II or 0A02 AP Computer Science Principles BI12 CompTIA IT Fundamentals BP14 Python Programming (The above supplemental courses are essential for Block Schedules and should be taken in sequential order.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: MTA 98–381 Introduction to Programming Using Python, Artificial Intelligence Engineering (AIE)				
CTE Careers Existing Today and Tomorrow: Software Developer, Intellectual Property Associate, Analytics Expert, Sustainability Integration Expert				

CTE Course Descriptions:

CTE COURSE 9TH GRADE
Computer Science Principles I

An introductory course intended to familiarize students with the general concepts and thinking practices of computing, computer science, and information science. Students will learn computing concepts through authentic visual and interactive projects using visual programming languages. Students will focus on the "big CS ideas" in creative ways that emphasize conceptual knowledge and thinking practices, rather than on programming alone. The big ideas in CSP include computing as a creative activity, abstraction, facilitating knowledge creation through computing, algorithms, problem solving, the internet, and the global impact of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Art, English language arts, and mathematical standards are reinforced.

CTE COURSE 10TH GRADE
Artificial Intelligence II

Artificial intelligence, or AI, enables computer systems to perform tasks that normally require human intelligence, such as visual perception, speech recognition, and decision–making. In this class, students will explore how and what types of data can be collected for AI systems, and how computers can "learn" from these data and use what is learned to help interpret the world and make decisions. Students will identify and explore the implications of AI systems currently in everyday use in areas such as social media, mapping software, and financial institutions and consider the emerging areas where AI will be applied. Topics also include how AI has been portrayed in popular culture, how AI systems interact with humans, and the ethical considerations surrounding potential societal harm from inappropriately designed, trained, and/or applied AI systems. Students have opportunities to experiment and compute as they explore and solve problems associated with AI.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Computer Science Principles II

This second-level introductory course in computer science (based on The Beauty and Joy of Computing) builds on the foundation of Computer Science Principles I. This course offers a more in–depth examination of the "big CS ideas," including a broad range of foundational topics such as programming, algorithms, the internet, big data, digital privacy and security, and the societal impacts of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Students will extend their programming skills to include more complex constructs, including objects and data abstraction. As an option, performance tasks may be included to obtain AP credit.

AP Computer Science Principles

This second-level introductory course in computer science (based on The Beauty and Joy of Computing) builds on the foundation of Computer Science Principles I. This course offers a more in–depth examination of the "big CS ideas," including a broad range of foundational topics such as programming, algorithms, the internet, big data, digital privacy and security, and the societal impacts of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Students will extend their programming skills to include more complex constructs, including objects and data abstraction. As an option, performance tasks may be included to obtain AP credit.

CompTIA IT Fundamentals

This course is designed for students to develop knowledge and skills required to identify and explain the basics of computing, IT infrastructure, application and software, software development, database fundamentals, and security. The course is also designed for students to develop the ability to demonstrate knowledge and skills to install software, establish basic network connectivity, identify or prevent basic security risks, explain troubleshooting theory, and provide preventative maintenance for devices.

Python Programming I

This course is designed to introduce Python as a beginning course (not intended for experienced programmers). The course is designed for students to learn and practice coding in an online environment that requires only a modern web browser and internet connection. No special software is required to complete this course. The course includes video content, practice labs, and coding projects. Mathematical standards are reinforced.

Signature Career Academy: Academy of Advanced Manufacturing and Engineering

Location: Ben L. Smith High School

Students attending the Academy of Advanced Manufacturing and Engineering at Ben L. Smith High School will study technologies of designing, improving, and producing products. Students complete their junior and senior year CTE courses on the site of an industry partner or at Guilford Technical Community College, depending on each student's customized program of study. Students are expected to graduate with industry credentials, professional and technical skills, and college credits, making them more marketable to colleges and employers than many non-academy peers. Majors in this academy include Integrated Production Technology and PLTW Engineering. This academy has an assigned attendance zone. Students in the Signature Career Academies matriculate with their cohort through grades 9–12.

CTE Career Cluster | SCIENCE, TECHNOLOGY, ENGINEERING, & MATHEMATICS

CTE CAREER PATHWAY PLTW ENGINEERING (PLWE)				
PATHWAY COMPLETER	CTE COURSE 9TH GRADE	CTE COURSE 10TH GRADE	CTE COURSE 11TH GRADE	CTE CAREER COURSE 12TH GRADE
CTE CONCENTRATOR	TP11 PLTW Introduction to Engineering Design	TP12 PLTW Principles of Engineering	TP27 PLTW Environmental Sustainability	TP31 PLTW Engineering Design & Development Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint (The above supplemental courses are essential for Block Schedules and should be taken in sequential order.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: OSHA 10–Hour Industry Certification				
CTE Careers Existing Today and Tomorrow: Mechanical Engineer, CAD Designer, Product Developer, Systems Transitionist, Efficiency Optimizer, Mass Energy Storage Developer				

CTE Course Descriptions:

CTE COURSE 9TH GRADE
PLTW Introduction to Engineering Design

Students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3D modeling software and use an engineering notebook to document their work.

CTE COURSE 10TH GRADE
PLTW Environmental Sustainability

Students investigate and design solutions in response to real-world challenges related to clean and abundant drinking water, food supply issues, and renewable energy. Applying their knowledge through hands-on activities and simulations, students research and design potential solutions to these true-to-life challenges.

CTE COURSE 11TH GRADE
PLTW PRINCIPLES OF ENGINEERING

Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation.

CTE COURSE 12TH GRADE

PLTW ENGINEERING DESIGN & DEVELOPMENT

The knowledge and skills students acquire throughout PLTW Engineering come together in EDD as they identify an issue and then research, design, and test a solution, ultimately presenting their solution to a panel of engineers. Students apply the professional skills they have developed to document a design process to standards, completing EDD ready to take on any postsecondary program or career.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard Certifications in Word and/or PowerPoint.

CTE Career Cluster | MANUFACTURING

CTE CAREER PATHWAY SREB INTEGRATED PRODUCTIONS (INPT)				
PATHWAY COMPLETER	**CTE COURSE 9TH GRADE**	**CTE COURSE 10TH GRADE**	**CTE COURSE 11TH GRADE**	**CTE CAREER COURSE 12TH GRADE**
CTE CONCENTRATOR	TR11 SREB AC Advanced Technology for Design and Production	TR12 SREB AC Systems of Advanced Technology	TR13 SREB AC Mechatronic Systems for Advanced Production	TP31 PLTW Engineering Design & Development Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint (The above supplemental courses are essential for Block Schedules and should be taken in sequential order.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: TP31 PLTW Engineering Design & Development				
CTE Careers Existing Today and Tomorrow: Electrical Engineer, Automation Engineer, Ceramics and Optical Expert, Mechatronics Hardware Engineer				

CTE Course Descriptions:

CTE COURSE 9TH GRADE
SREC AC Advanced Technology for Design and Production

This course will engage students in the use of modern technologies in the design and improvement of products. Students will use 3D 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.

CTE COURSE 10TH GRADE
SREB AC Systems of Advanced Technology

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, and 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.

CTE COURSE 11TH GRADE

SREB AC Mechatronic Systems for Advanced Production

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, and 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.

CTE COURSE 12TH GRADE

SREB AC Design for the Production of Advanced Products

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.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:

Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

Signature Career Academy: Academy of Transportation, Distribution, and Logistics

Location: Western Guilford High School

Students attending the Academy of Transportation, Distribution, and Logistics at Western Guilford High School will study innovations in planning; management; and movement of people, materials, and goods by road, pipeline, air, rail, and water. Students learn in a simulated work environment. Students are expected to graduate with industry credentials, professional and technical skills, and college credits, making them more marketable to colleges and employers than many non-academy peers. Majors in this academy include: Global Logistics and Supply Chain Management and Drone Technology. Students in the Signature Career Academies matriculate with their cohort through grades 9–12.

CTE Career Cluster | TRANSPORTATION, DISTRIBUTION & LOGISTICS

CTE CAREER PATHWAY DRONE TECHNOLOGY (DRON)				
PATHWAY COMPLETER	**CTE COURSE 9TH GRADE**	**CTE COURSE 10TH GRADE**	**CTE COURSE 11TH GRADE**	**CTE CAREER COURSE 12TH GRADE**
CTE CONCENTRATOR	BP41 Computer Science Principles	ID11 Drone Technology I	ID12 Drone Technology II	Work-Based Learning: CTE Apprenticeship, Cooperative Education (Co-op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM10 Microsoft Word and PowerPoint (The above supplemental courses are essential for Block Schedules and should be taken in sequential order.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: FAA 14 CFR Part 107				
CTE Careers Existing Today and Tomorrow: Drone Engineer, Drone Docking Designer, Operator Certification Specialist, Drone Traffic Optimizer				

CTE Course Descriptions:

CTE COURSE 9TH GRADE
Computer Science Principles I

An introductory course intended to familiarize students with the general concepts and thinking practices of computing, computer science, and information science. Students will learn computing concepts through authentic visual and interactive projects using visual programming languages. Students will focus on the "big CS ideas" in creative ways that emphasize conceptual knowledge and thinking practices, rather than on programming alone. The big ideas in CSP include computing as a creative activity, abstraction, facilitating knowledge creation through computing, algorithms, problem solving, the internet, and the global impact of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Art, English language arts, and mathematical standards are reinforced.

CTE COURSE 10TH GRADE
BP41 Computer Science I

Computer Science I is an introductory course intended to familiarize students with the general concepts and thinking practices of computing, computer science, and information science. Students will learn computing concepts through authentic visual and interactive projects using visual programming languages. Students will focus on the "big CS ideas" in creative ways that emphasize conceptual knowledge and thinking practices, rather than on programming alone. The big ideas in CSP include computing as a creative activity, abstraction, facilitating knowledge creation through computing, algorithms, problem solving, the internet, and the global impact of computing. Emphasis is placed on problem solving, communication, creativity, and exploring the impacts of computing on how we think, communicate, work, and play. Art, English language arts, and mathematical concepts are reinforced.

CTE COURSE 11TH GRADE
Drone Technology II

This course is the second-level course building on the skill students learned in the first course regarding FAA 14 CFR part 107 (The Small UAS Rule), officially known as "Part 107 Remote Pilot Certificate" is covered. The Small UAS rule adds a new part 107 to Title 14 Code of Federal Regulations (14 CFR) to allow for routine civil operation of small Unmanned Aircraft Systems (UAS) in the National Airspace System (NAS) and provide safety rules for those operations. This course is also designed for an introduction to basic flight of drones to include manual flight and flight and mapping software. Strong communication skills are necessary and English language arts standards are reinforced.

CTE COURSE 12TH GRADE
Drone Technology III

This course is currently in development but will be the third level course building on the skills students learn in levels one and two utilizing the flight of drones to include manual flight and flight and mapping software. Strong communication skills are necessary and English language arts standards are reinforced.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Word and PowerPoint

Learn advanced skills in word processing and presentation software using Microsoft Office Word and PowerPoint. The emphasis is on skill development in these software applications. Real-world application of these programs allows students to gain valuable experience and knowledge. Students will have the opportunity to earn Microsoft industry standard certifications in Word and/or PowerPoint.

CTE Career Cluster | TRANSPORTATION, DISTRIBUTION, & LOGISTICS

CTE CAREER PATHWAY				
GLOBAL LOGISTICS & SUPPLY CHAIN MANAGEMENT (GLSC)				
PATHWAY COMPLETER	CTE COURSE 9TH GRADE	CTE COURSE 10TH GRADE	CTE COURSE 11TH GRADE	CTE CAREER COURSE 12TH GRADE
CTE CONCENTRATOR	IK41 SREB AC Introduction to Logistics	IK42 SREB AC Functional Areas in Logistics	IK43 SREB AC Global Logistics Management	IK44 SREB AC Logistics and Supply Chain Management Work–Based Learning: CTE Apprenticeship, Cooperative Education (Co–op), Clinical or CTE Internship
CTE MAJOR				
SUPPLEMENTAL CTE COURSES	BM20 Microsoft Excel (The above supplemental courses are essential for Block Schedules and should be taken in sequential order.)			
CAREER & COLLEGE PROMISE	Approved Career & College Promise Career Technical Education Pathway			
CTE Industry-Recognized Credentials: OSHA Forklift Certification (optional credential offered anytime/age requirement)				
CTE Careers Existing Today and Tomorrow: Trade Compliance Supervisor, Logistics Engineer, Supply Chain Manager, Transportation Manager, Automated Traffic Architect, Driverless Operating System Engineer				

CTE Course Descriptions:

CTE COURSE 9TH GRADE
SREB AC Introduction to Logistics

This course engages students in solving contextual problems related to the concepts of supply chains, warehouse location, contingency planning, insourcing and outsourcing, and expanding existing supply chains. These concepts form the basis of global logistics and supply chain management and help students understand how professionals examine options to maximize the use of resources across distribution networks.

CTE COURSE 10TH GRADE
SREB AC Functional Areas in Logistics

This course compels students to explore deeper understandings of the concepts they discovered in the previous course as they navigate projects on warehouse design, inventory management, transportation optimization, information technology, emergency responsiveness, and the supply chain for manufacturing. Students use their experiences in this course to discover ways that professionals minimize the outlay of resources while improving efficiency and ability in the global market.

CTE COURSE 11TH GRADE
SREB AC Logistics and Supply Chain Management

This advanced course offers challenging projects that require students to look at the global implications of the industry more earnestly as they experiment with decisions over intermodal transportation, route selection, international shipping regulations, emergency preparedness, cultural awareness, business ethics, and international trade restrictions related to a distribution strategy. Students develop their understanding of the industry in this course and truly build their awareness of the challenges of doing business in a world with multiple borders that must be traversed.

SUPPLEMENTAL CTE COURSE DESCRIPTIONS:
Microsoft Excel

Students in Microsoft Imagine Academy benefit from world-class Microsoft curriculum and cutting-edge software tools to tackle real-world challenges in the classroom environment. This class is designed to prepare students for successful completion of the Microsoft Office Specialist Excel Core and Excel Expert exams. They will know and demonstrate the correct application of the principal spreadsheet features of Excel. Candidates will create and edit a workbook with multiple sheets and use a graphic element to represent data visually. Workbook examples include professional-looking budgets, financial statements, team performance charts, sales invoices, and data entry logs. Career possibilities may include accountants, financial analysts, data analysts, commercial bankers, and others.

Definitions

Work-Based Learning Experiences

Work-based learning strategies allow schools to go beyond the classroom and into the community to utilize the expertise of business and industry in helping students develop technical competencies. The essential component of work-based learning is connecting classroom instruction to practical application as students prepare for continuing education in technical fields. Cooperative education, apprenticeships, and internships are methods of work-based learning that provide students enrolled in CTE courses an opportunity to extend their education beyond the walls of a classroom.

Cooperative Education

Cooperative education is a method of instruction where technical classroom instruction is combined with paid employment directly related to the classroom instruction. Both experiences must be planned and supervised by the school and the employer so that each contributes to the student's career objective/major and employability. Written cooperative agreements showing the instruction to be provided are developed by the school and employer providing the training. School credit is received for both the on-the-job training and classroom components.

Criteria for Participation in Cooperative Education

- Students must submit an application to the cooperative education (co-op) teacher prior to spring registration for determination of appropriate co-op placement. Without the teacher's prior approval, students cannot be enrolled in cooperative education. The teacher-coordinator will assist the student in determining appropriate paid employment related to the course of study, locating appropriate job prospects, and setting up interviews, but it is the student's responsibility find and accept appropriate employment and maintain employment throughout the course of study.
- Students must be juniors and at least 16 years of age to participate in a cooperative work experience and will be most successful in this opportunity if they have completed at least one course in a CTE Career Cluster prior to seeking enrollment in a cooperative education class. Students must provide their own transportation to the on-the-job training site.
- An individual training plan based on the student's career goal and a training agreement outlining all responsibilities and signed by the student, parent, employer, teacher-coordinator, and principal must be on file for each cooperative education student.
- Students earn credit upon meeting the combined classroom and employment requirements. Students enrolled in a course with the co-op method earn two credits: a combination of the coursework and the approved supervised work experience. Students must pass both phases of the course (class and the co-op work experience) to receive a passing grade and two units of credit. They may not receive just one unit of credit for the work experience.
- Based on employers' requests, students should have a 2.0 GPA and no more than 10 absences for the previous school year.

Procedures for Enrolling in a Cooperative Education Course

- Prior to registration, interested students will complete an interest form and submit it to the teacher-coordinator.
- The guidance department will refer interested students to the teacher-coordinator.
- The teacher-coordinator will meet with each interested student to determine career and job information.
- The teacher-coordinator will develop a list of students approved to enroll in the cooperative method of instruction and submit the list of students to guidance.

Apprenticeship

Apprenticeship is an industry-driven training program, based on nationally recognized standards, that typically takes from two to five years to complete. Apprenticeships are registered with the North Carolina Department of Labor (NCDOL) and represent a partnership among business, industry, education, parents, youth apprentices, and the NCDOL. Students enrolled in selected CTE courses have the option of beginning an apprenticeship while in high school and continuing the training and postsecondary education after graduation until mastery of the competencies have been achieved. Upon mastery of

competencies, the NCDOL will provide the apprentice with a nationally recognized journeyman certificate. Opportunities are based on availability and willingness of local business to provide this training.

Criteria for Participation in the CTE Apprenticeship Program

· Students must be high school seniors, at least 16 years of age, and able to provide their own transportation to the work site. (Some employers and occupations require that students be 17–18 years of age.)

· Students must be completing a CTE course of study in a Career Cluster directly related to the apprenticeable occupation and planning to continue the apprenticeship and the required related postsecondary instruction after graduation.

· Students must have a minimum of a 2.0 grade point average with a C or better in Math I and the CTE courses directly related to the apprenticeship; however, each CTE Business Advisory Council may require additional academic and attendance standards for apprentices to be employed within their industry. Many businesses require a criminal background check, drug testing, fingerprinting, and/or a physical examination in addition to academic and attendance requirements.

· Students receiving high school credit for an apprenticeship must work a minimum of 135 hours each semester and continue to make progress toward mastery of the competencies outlined in the apprenticeship standards.

· Students enrolling in an apprenticeship during the first semester are expected to maintain the apprenticeship for the entire school year.

· Students must obtain a work permit and abide by the workplace policies of the employer as well as the policies of GCS.

· Students interested in an apprenticeship opportunity should apply during the spring of their junior year and must interview and be hired by a CTE Business Partner prior to registering for an apprenticeship.

· Applications for apprenticeship can be obtained from the Career and College Manager (CCM) at your school.

Internship

Internships are work-based experiences that provide paid or unpaid work site training to students enrolled in a Career and Technical Education program of study. Internships provide hands-on training in a specific career area, enhance classroom learning, and help create a connection between school and careers. Student interns can earn high school credit for the experience. Interns must document 135 hours (150 hours on a traditional schedule) of work site training to receive one school credit for the internship experience.

Internships always have a predetermined finish date. During the school year, internships typically last one semester (18 weeks) and can be scheduled in either the fall or spring semester. Summer internships generally last only six weeks because school is not in session and students can work more hours during the day.