

# NORTH CAROLINA CTE Course Inventory

CAREER AND TECHNICAL EDUCATION

2025-2026



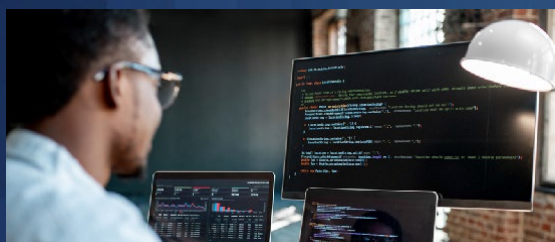
Agricultural Education



Business, Finance, and Marketing Education



Career Development Education



Computer Science, IT, and  
Technology Education



Family and Consumer Sciences Education



Health Science Education



Trade and Industrial Education



North Carolina Department of  
**PUBLIC INSTRUCTION**



Learning that works for North Carolina

**CTE**

**North Carolina**  
**CAREER AND TECHNICAL EDUCATION**  
**COURSE INVENTORY**

**PUBLIC SCHOOLS OF NORTH CAROLINA**  
**State Board of Education • Department of Public Instruction**

**For information, contact [ctecurriculum@dpi.nc.gov](mailto:ctecurriculum@dpi.nc.gov)**

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## INTRODUCTION

### CAREER AND COLLEGE READY

The mission of Career and Technical Education (CTE) is to empower students to be successful citizens, workers, and leaders in a global economy. CTE programs are designed to contribute to the broad educational achievement of students, including basic skills, as well as their ability to work independently and as part of a team, think creatively and solve problems, and utilize technology in the thinking and problem-solving process.

Career and Technical Education fulfills an increasingly significant role in school reform efforts. Students who concentrate in a CTE area, earning at least two related technical credits and meeting other criteria, are better prepared for the further education and advanced training required to be successful in 21<sup>st</sup> century careers. Career and Technical Educators at the state and local levels partner with business and industry and with community colleges and other postsecondary institutions to ensure Career and Technical Education serves the needs of individual students and of the state.

The Strengthening Career and Technical Education for the 21<sup>st</sup> Century Act (Perkins V) provides the framework for Career and Technical Education. North Carolina's Five-Year Plan for Career and Technical Education specifies how Career and Technical Education programs will be carried out in the state. Additional information about planning for Career and Technical Education is found in the CTE Planning Guide.

### COURSE INVENTORY

The 2025 CTE Course Inventory document was approved by the North Carolina State Board of Education in June 2024 and goes into effect for the 2025-2026 academic year. The document contains program areas, course descriptions, and links to essential standards by course. This information was previously part of the Career and Technical Education Standard Course of Study Guide but has been revised as part of the North Carolina Department of Public Instruction Accountability and Curriculum Reform Effort with emphasis on Essential Standards. Public School Unit (PSU) CTE administrators work with individual schools to select appropriate courses from among those in this document.

Each year the NC Department of Public Instruction publishes the Status of Curriculum, which lists the latest version date of each course and each supporting blueprint and curriculum, and the assessment source used with courses in the Course Inventory.

For specific information about pathways, courses, and standards, please refer to our Course Management System website: <https://center.ncsu.edu/nccte-cms/>

Career and Technical Education in the North Carolina Department of Public Instruction is responsible for managing courses in the Course Inventory. Four types of courses are available:

#### 1. Courses Developed by the Department of Public Instruction

Courses developed by the state are designed to meet the needs/standards of business and industry. They include a blueprint of essential standards, supporting objectives, and relative objective weights. These courses provide a curriculum product and aligned Proof of Learning (POL). All products developed since 2006 are aligned using the Revised Bloom's Taxonomy.

#### 2. Courses Adapted by the Department of Public Instruction

In some cases, curriculum is available from multiple vendors and a blueprint is needed to direct the learning of students. An Adapted Course Blueprint is developed with essential standards, indicators, and relative essential standard weights. This type of blueprint is often used when an industry credential is available for the course.

### **3. Courses Using Adopted Curriculum**

In some cases, a sole source is recognized as a provider of curriculum in a specialty area, and the course is adopted fully from a third-party vendor. Materials for these courses are usually purchased by the PSU and typically include assessments.

### **4. Courses Approved as Local Course Options**

If a PSU recognizes needs that are not addressed by courses in the Course Inventory, that PSU can request authorization to offer a Local Course Option. A Local Course Option requires considerable planning and preparation. Each local course must be approved before it is advertised and offered to students. More information about Local Course Options appears in Appendix A.

## **CAREER CLUSTERS™ AND PROGRAMS OF STUDY**

Career Clusters™ are broad groupings of occupations/career specialties, organized by common knowledge and skills required for career success. There are 16 Career Clusters™ and 79 related pathways (subgroupings of occupations/career specialties). Supported by the original 2006 Perkins legislation, Career Clusters™ are an organizing tool for curriculum design, school guidance, and a framework for seamless transition to career and college.

All NC CTE courses align to the Career Clusters™. Each course is placed in a Career Cluster based on a set of knowledge and skills common to all careers in the entire Career Cluster. Industry-validated knowledge and skills statements of student expectations identify what the student should know and be able to do. They prepare students for success in a broad range of occupations/career specialties. Some CTE courses cross over all 16 Career Clusters™.

### **Sixteen Career Clusters™**

- Agriculture, Food, and Natural Resources
- Architecture and Construction
- Arts, A/V Technology, and Communications
- Business Management and Administration
- Education and Training
- Finance
- Government and Public Administration
- Health Science
- Hospitality and Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections, and Security
- Manufacturing
- Marketing
- Science, Technology, Engineering, and Mathematics
- Transportation, Distribution, and Logistics

Federal law requires each school receiving Perkins funds to offer at least one Program of Study (POS). A Program of Study provides a clear pathway for students to reach their career goals through secondary CTE courses, opportunities for postsecondary credit while in high school, and academic coursework, combined with a smooth transition to postsecondary education and advanced training. *Students are to have a career development plan outlining courses to be taken that will move them toward their tentative career objective, meet high school graduation requirements, and provide a foundation for further education and advanced training.*

## WORK-BASED LEARNING THAT WORKS FOR NORTH CAROLINA

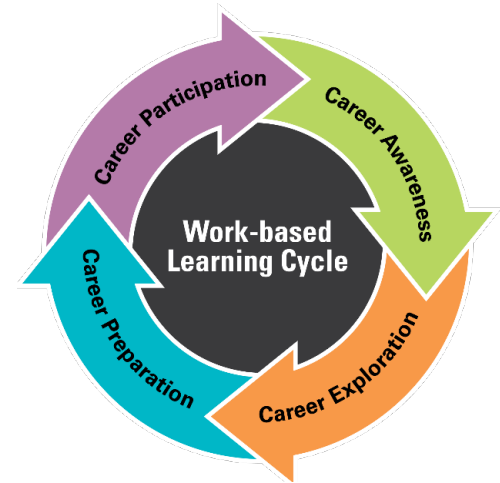
**Work-based Learning (WBL)** is an integral educational strategy within the Career and Technical Education (CTE) system, dating back centuries. It provides students with real-life work experiences, allowing them to apply academic and technical skills while developing crucial durable employability skills. These experiences occur at employer worksites, coordinated with school-based activities to illustrate the practical relevance of academic learning. (<https://go.ncdpi.gov/58cew>)

Work-based learning strategies, aligned to all CTE clusters in North Carolina, encompass the four phases of the

**Career Development Continuum** (<https://go.ncdpi.gov/37fgx>)

— awareness, exploration, preparation, and participation.

These strategies facilitate career understanding and the development of durable employability skills and positive work attitudes. The program provides meaningful experiences aligned with the personalized career interests of individual students, emphasizing hands-on learning in real or simulated work settings. Successful implementation relies on robust partnerships between schools, colleges, and local employers.



## WORK-BASED LEARNING IMPLEMENTATION

Building the bridge for work-based learning and the various pathways for career success involves a variety of stakeholders dependent on many local factors. As we build a useable, interactive roadmap and guide for our youth, it is the primary goal of the Work-based Learning Resource Manual to help stakeholders, educators, parents, students, business, and industry utilize resources that support the implementation of work-based learning experiences. This manual can be found in the Work-based Learning Moodle platform.

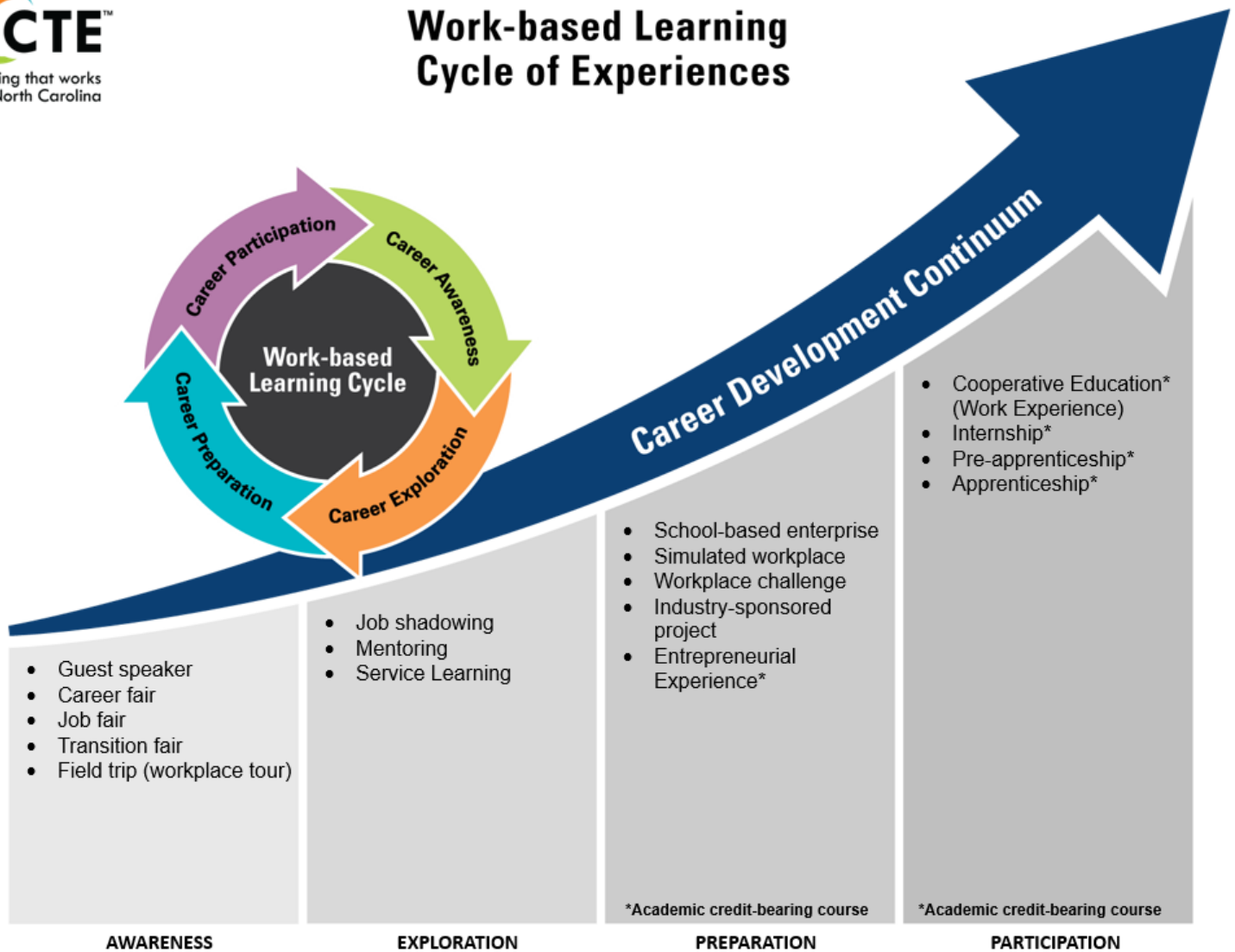
Work-based Learning is an integral part of all Career and Technical Education courses in North Carolina to show curricular relevance to industry skills. The Work-based Learning Cycle of Experiences depicts the opportunities students have beginning in elementary through middle school, high school, and beyond.

**Special Note:** Public School Units (PSUs) are encouraged to strategically choose work-based learning strategies in alignment with unique needs, considering factors such as local employment demands, available program offerings, resources, and other pertinent considerations. This tailored approach ensures the effective integration of work-based learning into middle school and high school curricula, fostering meaningful experiences for students and promoting alignment with local workforce needs.

The Work-based Learning Cycle of Experiences, integrated into the Career Development Continuum, offers diverse, planned, and meaningful activities, providing students with varied opportunities to actively engage with the world of work.



## Work-based Learning Cycle of Experiences





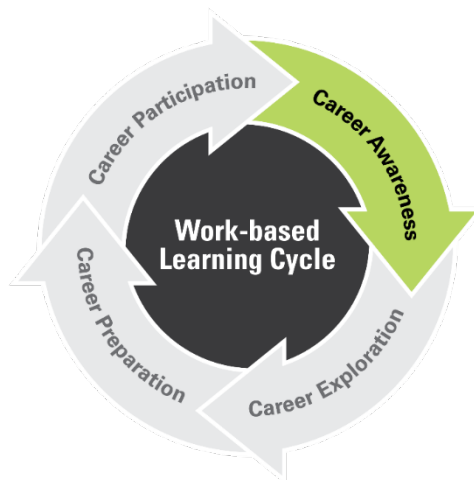
## CAREER AWARENESS

### WBL Cycle of Experiences - AWARENESS

|                             |   |
|-----------------------------|---|
| <b>Summary</b>              | Students will discover a variety of careers and industries, exploring different workplaces to identify personal interests and skills. |
| <b>Anticipated Outcomes</b> | Students will develop a foundational understanding of various career options.   |
| <b>Advantages</b>           | Students will enhance self-awareness and informed decision-making about future career paths.  |

**Learning ABOUT work** - Career awareness equips students by fostering an understanding of the diverse array of career paths within their reach and emphasizing the significance of postsecondary education. This process expands the range of options available to students as they navigate their future paths.

Work-based learning experiences for developing career **AWARENESS** include:



**Guest speaker:** Industry professionals who are invited to provide insight into their job experiences. Guest speakers contribute a firsthand account of workplace engagement and connection to classroom curriculum. Guest speakers can serve as advocates for underrepresented students to see themselves reflected in various industries.

**Career fair:** An event that can occur at any educational level and typically provides hands-on demonstrations, activities, and interaction with employers who are providing information about their company or jobs in their industry sector.

**Job fair:** An event attended by job seekers at the secondary or post-secondary level. Employers and recruiters provide information about their company or organization to potential employees along with current job openings and required credentials for their positions. Attendees may come with resumes and typically seek employment.

**Transition fair:** An event designed for students with disabilities who are exiting high school. Community support organizations, post-secondary institutions, and employers provide information about opportunities and support for education, employment, and independent living.

**Field trip (workplace tour):** An offsite learning opportunity/experience for a class or small group of students to experience course-related experiences. This is a short-term work-based learning experience aimed at expanding the learning context for participating students. The field trip allows students to observe and investigate activities related to a specific subject and career development objective.

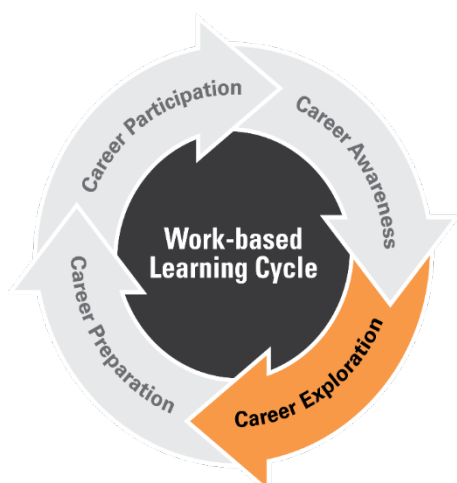
## CAREER EXPLORATION

### WBL Cycle of Experiences - EXPLORATION

|                             |  |
|-----------------------------|--|
| <b>Summary</b>              | Students will dive deeper into specific careers through job shadowing, mentorship, and service learning, finding potential career pathways |
| <b>Anticipated Outcomes</b> | Students will gain insights into specific industries and professions.  |
| <b>Advantages</b>           | Students will enhance informed decision-making, narrowing personalized areas of interest.  |

**Learning ABOUT work** - Career exploration helps students explore the working world, emphasizing the importance of discovering potential careers. Through coursework and hands-on projects, they learn about different occupations, the necessary education, and prerequisites for success in specific career paths. This exploration aims to motivate students and guide their decision-making in high school and postsecondary education.

Work-based learning experiences for developing career **EXPLORATION** include:



**Job shadowing:** A short-term educational experience that ranges in length from a half day to multiple days. It introduces a student or group of students to a specific job or career by pairing the student with an employee of a business, industry, or agency. By following or "shadowing" the employee, the student becomes familiar with the duties associated with that occupation, the physical setting of the occupation, and the compatibility of the occupation with his or her own career goals. There are formal programs for job shadowing offered nationally, state-wide, and locally.

**Mentorship:** A program involves pairing a student (mentee or protégé) with a community professional (mentor) in a one-to-one relationship with the intent of providing first-hand experience in a career field/cluster of the student's choice. Mentors are encouraged to provide as much hands-on experience as possible and to give learners a view of all aspects of the Career including routine tasks, as well as creative and challenging opportunities.

**Service learning:** A work-based learning strategy that combines community service with career and technical education learning goals. Students provide volunteer service to public and non-profit agencies, civic, charitable, and governmental organizations in the local community. Students benefit by acquiring career-related skills and knowledge while learning civic responsibility and gaining personal satisfaction. Service learning can be short-term projects and can be individual, team, career technical student organization (CTSO), or classroom oriented.

## CAREER PREPARATION

| WBL Cycle of Experiences - PREPARATION |  |
|--|--|
| <b>Summary</b>                         | Students will develop essential skills, craft resumes, and participate in formal training to grasp workplace expectations and norms. |
| <b>Anticipated Outcomes</b>            | Students will acquire practical skills and knowledge for a personalized career field.  |
| <b>Advantages</b>                      | Students will develop improved readiness for the workforce with enhanced durable employability skills.                               |

**Learning THROUGH work** - Career preparation programs are tailored to equip students with fundamental skills essential for both college and career readiness. These initiatives involve hands-on experiences and interactions with industry professionals and the community. Through practical learning, students acquire higher-order thinking, technical, academic, and applied workplace skills crucial for success in future careers.

Work-based learning experiences for developing career **PREPARATION** include:



**School-based enterprise:** This enterprise mode of learning is integrated into a CTE course or CTSO, involves students in the creation and operation of a simulated or bona fide business on the school premises. This venture mirrors a particular business or industry, generating revenue for the CTSO or school. Through these enterprises, students produce goods, provide services for sale, or use by external individuals, establishing a direct connection between classroom learning and real-world work experiences. It replicates a specific business and is a learning experience that provides direct links between classroom learning and the world of work.

**Simulated workplace:** Classrooms are organized as a virtual or mock business operated by learners. Industry professionals serve as mentors/inspectors for each simulated workplace.

**Workplace challenge/industry-sponsored project:** Students develop a project or service for an employer partner.

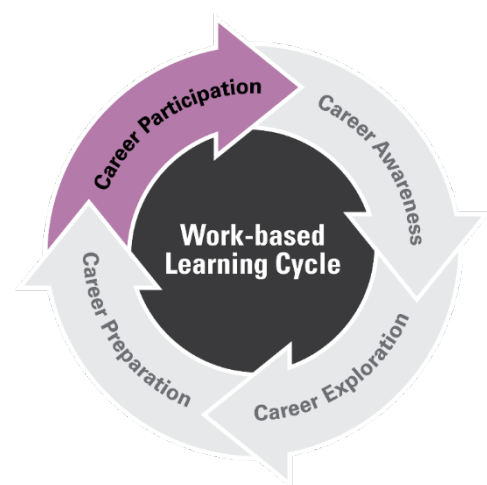
**Entrepreneurial Experience:** High school students can gain hands-on experience in the business world through Entrepreneurial Experience—a **credit-bearing** opportunity where they apply classroom learning to run their own small business. The students take on all the risks with the goal of making a profit and expanding their knowledge. Under the guidance of the teacher, students start a business from scratch. This involves crafting a business idea, developing a plan, launching, and managing the business independently. The income generated from selling a product or providing a service makes it a paid experience, and students face the challenges with the expectation of gaining both profit and valuable entrepreneurial skills.

## CAREER PARTICIPATION

| WBL Cycle of Experiences - PARTICIPATION |   |
|--|---|
| <b>Summary</b>                           | Students will engage in hands-on experiences, cooperative work experiences, internships, pre-apprenticeships, and apprenticeships, applying learned skills in real-world settings for active workplace involvement. |
| <b>Anticipated Outcomes</b>              | Students will apply classroom knowledge in practical scenarios.   |
| <b>Advantages</b>                        | Students will gain real-world experience, networking opportunities, and increased confidence in a personalized career field.  |

**Learning FOR work** - Career participation, students utilize their knowledge and undergo training for jobs and further education in a specific set of occupations.

Work-based learning experiences for developing career **PARTICIPATION** include:



**Cooperative Education (Cooperative Work Experience):** A **credit-bearing** component within the CTE curriculum, this structured program seamlessly blends classroom instruction with hands-on, paid work experiences aligned with students' career goals. The content and objectives are collaboratively outlined in a written agreement between the school and employer. Enrollees in cooperative education programs must concurrently (or within the same academic year) participate in the associated CTE course. Both experiences, meticulously planned and overseen by the school and employer, synergistically contribute to the student's career objectives and enhance employability. Comprehensive written cooperative agreements, detailing the instructional components, are jointly developed by the school and the training-providing employer.

**Internship:** A highly structured, time limited **credit-bearing** work-based learning experience where a student participates in the daily operations of a work site under the direct supervision of a business mentor. The

internship provides a realistic environment within which a student intern learns about a particular industry or occupation and applies knowledge and skills learned in the classroom. Internships often allow students to rotate through many departments and/or job functions. The work experience should contribute to the student's career pathway helping the student to narrow their career choices. Internships can be paid or unpaid and can be compensated in various manners.

**Pre-apprenticeship:** A **credit-bearing** recruiting and screening tool designed to prepare the student to succeed in a registered apprenticeship. It gives the employer and student the opportunity to determine if the apprenticeship is the right fit for the future apprentice. Pre-apprenticeships have the same components as an apprenticeship, but all three components are not required. It could consist of on-the-job learning, related instruction, or a combination of both, and may be paid or unpaid. Students performing work independently and positively impacting a company's return on investment (ROI) must be paid. Students participating in pre-apprenticeship earn a state certificate. Pre-apprentices are not guaranteed to move into an apprenticeship, but a pre-apprenticeship program cannot be registered without the registration of an associated apprenticeship program.

**Apprenticeship:** An innovative **credit-bearing** system of skilled occupational training that combines practical work experience, on-the-job learning, with related academic and technical instruction, and wages earned for skills gain, called a progressive wage scale. All three components are required. Through this earn and learn model, students also earn a state and national credential, or Journey Worker Credential, upon completion of an apprenticeship.

Pre-apprentices and Apprentices are registered through ApprenticeshipNC at the North Carolina Community College System. These programs require the involvement of many partners, most importantly, industry partners willing to participate in a registered apprenticeship agreement with the state. There are three specific components of apprenticeship programs: **on-the-job learning, related academic or technical instruction, and a progressive wage scale.** A youth apprenticeship and adult apprenticeship have the same requirements and are registered as the same program. Youth Apprentice or high school apprentice refers to a student who begins their apprenticeship in high school. “High School” or “Youth” apprentice are also interchangeable terms. To participate in a pre-apprenticeship or apprenticeship, a student must be at least 16 years of age and eligible to work in the United States. The Workforce Innovation and Opportunity Act (WIOA) defines youth as a person 16-24 years old and often provides funding and support for apprentices. Students who are not in high school but are in this age span are referred to as youth **in** an apprenticeship.

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## PROGRAM SPECIFIC WORK-BASED LEARNING EXPERIENCES

Certain CTE program areas have built-in work-based learning components specific to an industry.

**Supervised Agricultural Experience:** A student-led, instructor-supervised work-based learning experience that results in measurable outcomes within a pre-defined, agreed-upon set of Agricultural, Food, and Natural Resources (AFNR) Technical Standards and Career ready Practices aligned with a student's career plan in an AFNR pathway. For more information, please refer to the agricultural education program outlined in the North Carolina Career and Technical Education Course of Study.

**Health Science Clinical Experience:** Students deliver supervised patient care within healthcare environments, including hospitals, long-term care facilities, or other approved settings. This experience is a structured element of the Health Science curriculum, offering supervised practical training in approved settings. For more information, please refer to the health science education program outlined in the North Carolina Career and Technical Education Course of Study.

**Early Childhood Education Experience:** A redesign of a teacher's aid program for students interested in pursuing careers in the education/training field. The experience must be conducted in partnership with course work in the Early Childhood Education curriculum and supervised by the education and training instructor. For more information, please refer to the family and consumer sciences education program outlined in the North Carolina Career and Technical Education Course of Study.

### Work-based Learning Contact Connection

For specific inquiries related to work-based learning: [CTEWBL@dpi.nc.gov](mailto:CTEWBL@dpi.nc.gov)

## **AGRICULTURAL EDUCATION PROGRAM DESCRIPTION**

Agricultural Education offers systematic instruction to students encompassing agriculture, food, and natural resources. Through these subjects, agricultural educators impart a diverse range of skills, spanning science, math, communications, leadership, management, and technology. This education equips students for successful careers and empowers them to make informed decisions throughout their lives within the global agriculture, food, fiber, and natural resources sectors.

Through agricultural education, students are provided opportunities for leadership development, personal growth, and career success. Agricultural education instruction is delivered through three major components:

- Classroom/Laboratory instruction (contextual learning)
- Supervised Agricultural Experience programs (work-based learning)
- Leadership Development (North Carolina FFA Association and National FFA Organization)

Career pathways that students may pursue include:

- Animal Science
- Equine Science
- Natural Resources
- Plant Systems
- Power, Structural, and Technical Systems
- Sustainable Agriculture

National FFA Organization is a dynamic youth organization that changes lives and prepares members for more than 255 careers in agriculture. FFA develops members' potential and helps them discover their talent through hands-on experiences, giving them the tools to achieve real-world success. Members are future chemists, veterinarians, government officials, entrepreneurs, bankers, international business leaders, teachers, and premier professionals in many career fields. FFA is an intracurricular student organization for those interested in agriculture and leadership.

For specific information about AG pathways, courses, credentials, and standards, please refer to the NC CTE CourseManagement System website: <https://center.ncsu.edu/nccte-cms/>

## **Agricultural Education Course Descriptions**

### **Agricultural Mechanics I**

**Course Number:** AS31

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop knowledge and technical skills in the broad field of agricultural machinery, equipment, and structures. Identify day-to-day maintenance and repair needs of agricultural mechanics equipment. Generate knowledge of agricultural mechanics safety and hand/power tool use and selection. Develop an understanding of electrical wiring and basic agricultural metal and wood fabrication. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Power, Structural and Technical Systems pathway.

### **Agricultural Mechanics II**

**Course Number:** AS32

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** AS31 Agricultural Mechanics I

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Understand metal fabrication technology to implement hot/cold metal working skills and technology, advanced welding and metal cutting skills. Build non-metallic agricultural fabrication techniques. Utilize tools and equipment safely to work with plastics, plumbing, concrete, and masonry. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in Power, Structural and Technical Systems pathway.

### **Agricultural Mechanics II - Small Engines**

**Course Number:** AS33

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** AS31 Agricultural Mechanics I

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.



**Description:** Implement knowledge of four-cycle small engines to obtain an industry recognized credential. Execute skills in compression and ignition system repair and maintenance. Facilitate regulation of fuel and governor small engine function. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Power, Structural and Technical Systems pathway.

## **Agricultural and Environmental Biotechnology**

**Course Number:** AY12

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Understand the science of plants, food, and animals in agricultural biotechnology through hands-on activities. Build knowledge of environmental biotechnology applications and understand their global impact. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Agriculture, Food, and Natural Resources career cluster.

## **Agriculture and Our Social and Economic Well-Being**

**Course Number:** AY25

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization (FFA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Analyze the importance of agriculture to social and economic well-being through hands-on activities. Explore how advances in agriculture support life and help society. Establish a connection to agriculture through career exploration. Build knowledge of industrial and environmental biotechnology applications and their global impact. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Agriculture, Food and Natural Resources career cluster.

## **Foundations of Agriculture**

**Course Number:** AU10

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the sectors of the agriculture industry through hands-on activities. Develop a foundation of agricultural literacy to become an advocate in the community. Establish an understanding of the process to produce agricultural commodities in the areas of plant science, agriculture mechanics, animal science, and natural resources. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Agriculture, Food and Natural Resources pathway.

## **Animal Science I**

**Course Number:** AA21

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the impact animal physiology has on animal nutrition and health. Identify animals using physical traits and characteristics. Implement best management practices to select healthy animals. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Animal Science pathway.

## **Animal Science II – Companion Animal**

**Course Number:** AA23

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** AA21 Animal Science I

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Integrate safe handling practices to groom and care for companion animals and identify companion animals using physical traits and characteristics. Illustrate knowledge of nutritional and digestive needs through experiential activities. Establish a foundation of veterinary medical terminology and procedures. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Animal Science pathway.

## **Animal Science II – Food Animal**

**Course Number:** AA22

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** AA21 Animal Science I

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Expand knowledge of animal anatomy and physiology and utilize genetics to improve animal performance. Formulate nutrition plans to produce food animals and design facilities to manage animal production systems. Develop an understanding of veterinary terminology and practices. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Animal Science pathway.

## **Drone Technology Fundamentals**

**Course Number:** ID10

Please refer to the Trade and Industrial Education Program Area for the full course description.

## **Drone Technology I**

**Course Number:** ID11

Please refer to the Trade and Industrial Education Program Area for the full course description.

## **Drone Technology II**

**Course Number:** ID12

Please refer to the Trade and Industrial Education Program Area for the full course description.

## **Equine Science I**

**Course Number:** AA31

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Connect environmental factors to equine behavior. Conceptualize how anatomy influences equine movement and internal organs. Build knowledge of nutritional physiology and feeding management of horses. Explore the tools and equipment used to support equine sports and recreation through hands on activities. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Equine Science pathway.

## **Equine Science II**

**Course Number:** AA32

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** AA31 Equine Science I

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop advanced applications in feeding and management of horses. Participate in the selection of horses for multiple equine disciplines based on the structure and functionality of the animal. Develop facility and management plans for horses. Monitor equine health through diagnostic procedures. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Equine Science pathway.

### **Exploring Agricultural Issues**

**Course Number:** AY23

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the production process for agriculture products and the connection between science and research. Analyze current issues affecting the agriculture industry and economy through exploratory activities. Build agricultural advocacy through leadership development and authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Agriculture, Food and Natural Resources career cluster.

### **Exploring Animal and Plant Science**

**Course Number:** AY21

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the fundamentals of the animal and plant industry through classroom and exploratory settings. Foster an understanding of the importance of plant and animal products through hands-on activities. Generate knowledge of plant physiology in laboratory settings. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Agriculture, Food and Natural Resources career cluster.

### **Exploring Environmental and Natural Resources**

**Course Number:** AY20

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Foster knowledge of the relationship between natural resources and how it supports the environment. Conceptualize the role of alternative energy. Develop environmental stewardship practices through hands-on activities. Connect animal and plant production to best management practices. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Agriculture, Food and Natural Resources career cluster.

## **Exploring Food and Agricultural Products**

**Course Number:** AY22

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Become an informed consumer of agricultural products by experiencing the process to produce safe agricultural products for consumption. Participate in the process to convert agricultural products into food and fiber through hands-on activities. Discover the purpose of marketing and labeling agriculture products to enhance consumption. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Agriculture, Food and Natural Resources career cluster.

## **Fundamentals of the Agricultural Science Program**

**Course Number:** AY24

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the importance of stewardship through hands-on experiences. Discover appropriate safety procedures for various agricultural education learning environments. Implement foundational work-based learning experiences and develop leadership skills through agriculture and community settings. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Agriculture, Food and Natural Resources career cluster.

## **Fundamentals of Biotechnology**

**Course Number:** AY10

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Discover terminology and mathematical concepts used in the biotechnology industry through hands-on activities. Build laboratory safety skills through classroom activities. Investigate cellular design and DNA through exploratory activities. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Agriculture, Food and Natural Resources career cluster.

## **Horticulture I – Introduction to Plants**

**Course Number:** AP41

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Grow your knowledge of plant biology and environmental conditions plants need to thrive. Cultivate plant identification skills and experiment with propagation and production practices. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in Plant Systems pathway.

## **Horticulture II – Plant Production**

**Course Number:** AP42

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** AP41 Horticulture I – Introduction to Plants

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Cultivate skills related to greenhouse, nursery, floral, and edible plant production, and maintenance practices. Experience the requirements to grow and maintain healthy plants and floral products through work-based learning opportunities. Build leadership development and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Plant Systems pathway.

## **Horticulture II - Landscape Construction**

**Course Number:** AP44

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** AP41 Horticulture I - Introduction to Plants

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Design landscapes that meet client demands. Implement landscape installation and maintenance skills through work-based learning opportunities. Gain the knowledge and skills for landscape careers. Build leadership development and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Plant Systems pathway.

## **Introduction to Biotechnology**

**Course Number:** AY11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop an understanding of historical developments through exploratory activities. Investigate theories of biotechnology progress to improve agriculture. Create a career development plan to demonstrate leadership skills in a program of activities. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Agriculture, Food and Natural Resources career cluster.

## **Natural Resources I**

**Course Number:** AN51

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop knowledge of renewable and non-renewable natural resources in an agricultural education setting. Explore forestry and wildlife habitat management procedures through hands-on activities. Practice skills and methods used to evaluate and classify soils. Examine land use regulations to support environmental quality. Build leadership development and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Natural Resources pathway.

## **Natural Resources II**

**Course Number:** AN52

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** AN51 Natural Resources I

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Examine best management practices and sampling techniques to support natural resource conservation. Develop forestry identification and management skills. Discover prescribed conservation techniques to enhance forestry and wildlife habitats and explore a variety of natural resources recreational opportunities. Build leadership development and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Natural Resources pathway.

## **Natural Resources II - Forestry**

**Course Number:** AN53

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** AN51 Natural Resources I

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore forest cultivation, conservation and management, and timber harvesting and processing to prepare students for a career in the forestry industry. Implement skills in tree identification and timber measurement. Develop forestry knowledge and skills to attain an industry recognized credential. Build leadership development and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Natural Resources pathway.

## **Project Management I**

**Course Number:** GS11

Please refer to the Business, Finance, and Marketing Education Program Area for the full coursedescription.

## **Project Management II**

**Course Number:** GS12

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Sustainable Agriculture Production I**

**Course Number:** AU21

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None



**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Investigate the increasingly complex world of producing enough food and fiber to meet the growing world demand through exploration activities. Examine the ecological balance to conserve natural resources in a local and global setting. Implement environmentally sound practices for various facets of agricultural production such as agroforestry, foods safety, and the farm-to-fork continuum. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Sustainable Agriculture pathway.

## **Sustainable Agriculture Production II**

**Course Number:** AU22

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** AU21 Sustainable Agriculture Production I

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Enhance knowledge of 21<sup>st</sup> century agriculture through the continued exploration of renewable energy, precision agriculture biotechnology and sustainable agriculture breeding programs in an experiential setting. Implement production methods to sustain a growing population in the areas of bees, aquaponics, mushrooms, and vermicomposting. Facilitate the business and marketing aspects of agriculture production systems. Convey food safety practices in each facet of agriculture production. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Sustainable Agriculture pathway.

## **Veterinary Assisting**

**Course Number:** AA41\*

**Recommended Maximum Enrollment:** 15

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** AA22 Animal Science II – Food Animal or AA23 Animal Science II - Companion Animal or AA32 Equine Science II

**Aligned Career Technical Student Organization(s):** North Carolina FFA Association and National FFA Organization

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop the skills, techniques, and knowledge to earn a veterinary assistant credential. Perform proper veterinary practice management and client relations through hands-on skills. Formulate veterinary medical dosages using appropriate medical terminology. Establish animal handling skills in practicum settings and establish surgical and radiological procedures through skill-based scenarios. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation. Gain the knowledge and skills for careers in the Animal Science pathway.

\*This course is designed for 11<sup>th</sup> or 12<sup>th</sup> grade students with an interest in animal medicine.

## **CTE Advanced Studies**

**Course Number:** WS02 (AGNR)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** Two CTE courses: one must be a concentrator course.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through analysis and research of selected career pathway. Experience real-world application of course/pathway content through a work-based learning lens acquired by utilizing employability skills in an authentic workforce activity. Evaluate and plan for a postsecondary career while educating others. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Apprenticeship**

**Course Number:** WA02 (AGNR)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Perform the job duties and related education required as an employed apprentice in a career field registered by ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce environment. Evaluate and plan for a postsecondary career in the career cluster/pathway culminating in a State Certificate and a National Journeyworker Certificate issued by the USDOL. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Career and College Promise**

**Course Number:** Various

**Recommended Maximum Enrollment:** Varies

**Hours of Instruction:** Does not apply

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Career and College Promise provides a way for any North Carolina 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 North Carolina 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.

### **CTE Cooperative Education**

**Course Number:** WO02 (AGNR)

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** To get academic credit, the aligned coursework and related paid employment must be completed in the same academic year, which may be concurrent or consecutive semesters.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Experience paid employment aligned with classroom instruction, creating a structured work-based learning experience. Devise a jointly agreed training plan involving the student, teacher, employer, and parent, which outlines specific learning outcomes aligned with the student's career objective. Synthesize classroom content, career goals, roles, and responsibilities through a written agreement between the school and employer. Experience real-world application of technical skills, durable employability skills, and related education in an authentic workforce environment. Gain the knowledge and skills for careers in the pathway of choice.

### **CTE Entrepreneurial Experience**

**Course Number:** WE02 (AGNR)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** Two CTE course credits: one must be a concentrator course.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for the management, responsibilities, and risks of operating a business in a career pathway. Experience real-world application of workplace and employability skills in business management and operations. Learn skills and approaches to successfully evaluate and create new business opportunities. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Internship**

**Course Number:** WI02 (AGNR)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through observation and participation in the daily operations of a career in a general career field. Experience real-world application of job tasks acquired by utilizing durable employability skills in an authentic workforce activity. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Pre-apprenticeship**

**Course Number:** WP02 (AGNR)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for opportunities for postsecondary education and employment in an apprenticeship in a career field registered with ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce activity. Evaluate and plan for a postsecondary career in the career cluster/pathway. Gain the knowledge and skills for careers in the pathway of choice.

## **BUSINESS, FINANCE, AND MARKETING EDUCATION PROGRAM DESCRIPTION**

Business, Finance, and Marketing (BFM) provides students with meaningful instruction for and about business. Instruction in Business, Finance, and Marketing Education encompasses business skills and techniques, an understanding of basic economics, an understanding of making socioeconomic decisions and producing goods and services for consumption, and business attitudes essential to become a globally engaged and productive citizen. BFM plays a key role in preparing a competent, business-literate, and skilled workforce. The associated curricula have real-life relevance that empowers and helps young adults to compete in a global marketplace while managing their own financial affairs and making intelligent consumer and business-related choices.

Career pathways that students may pursue include:

- Accounting
- Business Ethics and Law
- Economics
- Entrepreneurship
- Financial Planning
- General Management
- Marketing Management
- Office Administration
- Project Management
- Sales
- Sport and Event Marketing

Future Business Leaders of America (FBLA) inspires and prepares students to become community-minded business leaders in a global society through relevant career preparation and leadership experiences. FBLA programs focus on leadership development, which includes essential soft skills; academic competitions; educational programs in which members create career portfolios, enhancing their knowledge with world-recognized skills certifications; and access to select college scholarships. FBLA programs also place a strong emphasis on community service through support of the March of Dimes to help end premature births. Finally, FBLA members can build a portfolio of accomplishments with a wide range of awards programs with regional, state, and national recognition.

DECA, an Association for Marketing Education Students, serves as the Career and Technical Student Organization for marketing students, enhancing their class and work experiences. It enables students to cultivate practical presentation, decision-making, and leadership skills. DECA strongly encourages work-based learning experiences, such as Cooperative Education, to augment classroom instruction with real-world relevance. For specific information about BFM pathways, courses, credentials, and standards, please refer to the NC CTE Course Management System website: <https://center.ncsu.edu/nccte-cms/>

## **Business, Finance, and Marketing Education**

### **Course Descriptions**

#### **Accounting I**

**Course Number:** BA10

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Investigate the fundamental accounting principles and the ethical responsibilities of the profession. Analyze the accounting cycle, managing assets and sales, inventory valuation methods, and preparing and posting journal entries for various business structures. Implement payroll accounting, financial statement preparation, and specialized accounting activities. Gain the knowledge and skills for careers in accounting.

#### **Accounting II**

**Course Number:** BA20

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** BA10 Accounting I

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop in-depth knowledge of accounting procedures and techniques utilized in solving business problems and making managerial decisions. Explore departmental accounting, corporate accounting, cost accounting, and inventory control systems. Amplify accounting skills to accurately complete specialized accounting procedures. Gain the knowledge and skills for careers in accounting.

#### **AP Macroeconomics**

**Course Number:** 4A03

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** AP Macroeconomics is a college-level course that introduces students to the principles that apply to an economic system as a whole. The course places particular emphasis on the study of national income and price-level determination. It also develops students' familiarity with economic performance measures, the financial sector, stabilization policies, economic growth, and international economics. Students learn to use graphs, charts, and data to analyze, describe, and explain economic concepts.

## **AP Microeconomics**

**Course Number:** 4A04

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** AP Microeconomics is a college-level course that introduces students to the principles of economics that apply to the functions of individual economic decision-makers. The course also develops students' familiarity with the operation of product and factor markets, distributions of income, market failure, and the role of government in promoting greater efficiency and equity in the economy. Students learn to use graphs, charts, and data to analyze, describe, and explain economic concepts.

## **Business Essentials**

**Course Number:** BF10

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore realistic business principles by examining the business environment and primary business activities. Conceptualize ethics, customer relations, and human resource management through workplace scenarios. Investigate the usage of financial analysis, economics, information management, marketing, operations, and technology in the business world of the 21<sup>st</sup> century. Gain the knowledge and skills for careers in multiple business pathways.

## **Business Ethics and Law I**

**Course Number:** BB30

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the intricate landscape of ethical and legal issues that influence the world of business and its consumers. Gain a deep understanding of the ethical reasoning and consequences that underlie decision-making in the business world. Delve into the various facets of business ethics and law, such as, types of business laws, types of business ownership, workplace legal and ethical practices, finances in business, environmental and energy law, and digital citizenship. Gain the knowledge and skills for careers in the Business Ethics and Law pathway.

## **Business Ethics and Law II**

**Course Number:** BB32

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** BB30 Business Ethics and Law I

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Analyze complex legal and ethical issues that impact today's modern business models. Explore spirit and intent of the law, agency law, property law, intellectual property law, and business tax law. Investigate the protection provided by business contracts and their importance. Gain the knowledge and skills for careers in the Business Ethics and Law pathway.

## **Business Management I**

**Course Number:** BB40

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** BF10 Business Essentials

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Cultivate core management concepts. Investigate how managers plan, organize, staff, and direct the business's resources that enhance the effectiveness of the decision-making process. Explore ethical dilemmas and real-world situations utilizing customer service, academic, and critical-thinking skills. Gain the knowledge and skills for careers in general management.

## **Business Management II**

**Course Number:** BB42

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** BB40 Business Management I

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA) Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Nurture the appreciation and significance of management to business organizations. Investigate how managers control financial resources, inventory, ensure employee safety, and protect customer data to enhance the effectiveness of their decision making. Investigate ethical dilemmas, practice problem solving, and build teamwork skills. Gain the knowledge and skills for careers in business management.



## **Digital Literacy**

**Course Number:** CY04

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore critical digital literacy skills and evaluate content for accuracy and motive.

Research the benefits of online communities and how to effectively navigate potential pitfalls in their digital lives. Formulate practical steps to protect privacy and safety online. Explore the knowledge and skills for the careers in the Computer Science, IT, and Technology pathways.

## **Drone Technology Fundamentals**

**Course Number:** ID10

Please refer to the Trade and Industrial Education Program Area for the full course description.

## **Drone Technology I**

**Course Number:** ID11

Please refer to the Trade and Industrial Education Program Area for the full course description.

## **Drone Technology II**

**Course Number:** ID12

Please refer to the Trade and Industrial Education Program Area for the full course description.

## **Entrepreneurship I**

**Course Number:** ME11

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Conceptualize starting, opening, working for, and operating a small business. Explore feasibility, design thinking, entrepreneurial mindset, and the Lean Canvas Business Model.

Investigate channel management, pricing, product/service management, and promotion. Gain the knowledge and skills for careers in entrepreneurship.

## **Entrepreneurship II**

**Course Number:** ME12

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** ME11 Entrepreneurship I

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Utilize business planning strategies to accelerate the implementation of a business idea. Construct plans for risk management, staffing, and promotions. Develop a business plan complete with a SWOT analysis and action plan. Gain the knowledge and skills for careers in entrepreneurship.

## **Exploring Business Activities**

**Course Number:** BY12

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Analyze the basics of business activities and various careers. Investigate careers related to finance, management, information technology, marketing, and entrepreneurship. Gain the knowledge and skills for careers in business, finance, and marketing.

## **Exploring Business and Entrepreneurship**

**Course Number:** BY10

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the purpose and functions of business and the concepts of entrepreneurship. Focus on the characteristics of an entrepreneur and the entrepreneurial process. Gain the knowledge and skills for careers in business, finance, and marketing.

## **Exploring Business Procedures and Leadership**

**Course Number:** BY13

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore business procedures and basics of leadership. Establish durable skills including business etiquette, ethical decision-making, and how to seek, gain, and maintain employment. Gain the knowledge and skills for careers in business, finance, and marketing.

## **Exploring Economic Systems**

**Course Number:** BY11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Discover the basics of economics. Research the types of economic systems and explore the United States economic system. Investigate concepts including supply and demand, the stock market, e-commerce, and the Federal Reserve. Gain the knowledge and skills for careers in business, finance, and marketing.

## **Fashion Merchandising**

**Course Number:** MI21

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Experience a comprehensive approach to the business of fashion. Engage in the economics, distribution, promotion, and retail of fashion. Prepare for entry-level fashion employment or post-secondary education. Gain knowledge and skills for careers in the fashion industry.

## **Financial Planning I**

**Course Number:** BF21

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** BF10 Business Essentials

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop techniques to enhance personal wealth building for a secure financial future.

Establish key strategies for wealth building through evaluating businesses for investment opportunities while incorporating current headlines and trends, financial resources, and stock market simulation. Gain the knowledge and skills for careers in financial planning.

## **Financial Planning II**

**Course Number:** BF22

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** BF21 Financial Planning I

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop the knowledge and skills to create a business financial plan; including loans, insurance, taxes, and corporate governance. Explore the various risks and returns associated with business activities and the impact of the global economy. Analyze ethical situations in various aspects of financial leadership in local, national, and global business environments. Gain the knowledge and skills for careers in financial planning.

## **IB Business Management**

**Course Number:** BI50

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 150

**Prerequisite:** BF10 Business Essentials

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students learn to analyze, discuss, and evaluate business activities at local, national, and international levels. The course covers a range of organizations from all sectors, as well as the socio-cultural and economic contexts in which those organizations operate.

## **IB Economics HL**

**Course Number:** 4I02

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 150

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students will study topics such as economic theories, microeconomics, macroeconomics, and the global economy in significant breadth and depth.

## **IB Economics SL**

**Course Number:** 4I01

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 150

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This course uses economic theories, models, and key concepts to examine the ways in which these choices are made: at the level of producers and consumers in individual markets (microeconomics); at the level of the government and the national economy (macroeconomics); and at an international level, where countries are becoming increasingly interdependent (the global economy).

## **Introduction to Office Productivity**

**Course Number:** CY02

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Research word processing features and their uses. Explore the purpose and procedures for effectively delivering a multimedia presentation. Investigate the components and operations of spreadsheet software. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Keyboarding and Basic Word Processing**

**Course Number:** CY01

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Improve in the application of the touch method of keyboarding. Draft basic documents using proper formatting techniques. Establish a foundation for effective technology use by learning to type. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Marketing I**

**Course Number:** MM51

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Implement dynamic marketing processes and activities. Develop an understanding of marketing functions and their impact on business operations. Conceptualize a comprehensive marketing plan. Gain the knowledge and skills for careers in marketing.

## **Marketing II**

**Course Number:** MM52

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** MM51 Marketing I

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Understand marketing mix strategies and the marketing model. Explore the role of marketing research, marketing data, and marketing communications. Apply knowledge to prepare a strategic marketing plan. Gain knowledge and skills for careers in marketing.

## **Microsoft Excel**

**Course Number:** CC11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop spreadsheets in Microsoft Excel using fundamentals, formulas, and functions. Illustrate data with tables and graphs. Manage workbooks, manipulate data, and use simple macros. Gain the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Microsoft Word and PowerPoint**

**Course Number:** CC10

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Craft, enhance, customize, and create various documents using Microsoft Word. Design, customize, and present presentations using Microsoft PowerPoint. Utilize the various features of both programs to produce relevant 21st Century documents. Gain the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Office Productivity Applications**

**Course Number:** CY03

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Utilize advanced functions, graphs, and charts in spreadsheet software. Explore the purpose and basic components of database software. Investigate the purpose and basic principles of business publications. Explore the skills and knowledge for careers in the Computer Science, IT, and Technology pathways.

## **Project Management I**

**Course Number:** GS11

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the principles, concepts, and software applications used in the management of projects from conception to completion. Utilize project-based learning to exemplify the framework of initiating, planning, executing, monitoring and controlling, and closing a project in authentic situations. Analyze the core concepts of scope, time, cost, and integration. Gain the knowledge and skills for careers across multiple pathways.

## **Project Management II**

**Course Number:** GS12

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** GS11 Project Management I

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop advanced project management skills. Utilize project-based learning to understand how to use the framework of initiating, planning, executing, monitoring and controlling, and closing a project in authentic situations. Explore concepts of quality management, human resources, communication management, risk management, procurement management, and stakeholder management. Gain the knowledge and skills for careers across multiple pathways.

## **Sales I**

**Course Number:** MI31

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore careers in selling and customer service. Recommend specific products to meet customer needs. Develop communication skills through public speaking opportunities. Gain the knowledge and skills for careers in sales.

## **Sales II**

**Course Number:** MI32

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** MI31 Sales I

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Realize the art of selling and build upon the content from the MI31 Sales I course. Develop a personal brand while enhancing communication and customer service skills. Utilize role plays to engage in the selling process; learn to improvise and think critically. Gain the knowledge and skills for careers in sales.

## **Sport and Event Marketing I**

**Course Number:** MH31

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)



**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore sport and event industries, associated marketing strategies, and branding concepts. Develop an understanding of promotion and marketing data related to sports and events. Weave together the concepts to create a proposal for a unique event. Gain the knowledge and skills for careers in sport and event marketing.

## **Sport and Event Marketing II**

**Course Number:** MH32

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** MH31 Sport and Event Marketing I

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Utilize knowledge of promotion and marketing to create a plan for a unique event. Extrapolate marketing data to make informed communication decisions. Analyze the financial and economic impacts of sports and events. Gain the knowledge and skills for careers in sport and event marketing.

## **CTE Advanced Studies**

**Course Number:** WS04 (BMA), WS06 (FINA), WS07 (GOVT), WS14 (MRKT)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** Two CTE courses: one must be a concentrator course.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through analysis and research of selected career pathway. Experience real-world application of course/pathway content through a work-based learning lens acquired by utilizing employability skills in an authentic workforce activity. Evaluate and plan for a postsecondary career while educating others. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Apprenticeship**

**Course Number:** WA04 (BMA), WA06 (FINA), WA07 (GOVT), WA14 (MRKT)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Perform the job duties and related education required as an employed apprentice in a career field registered by ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce environment. Evaluate and plan for a postsecondary career in the career cluster/pathway culminating in a State Certificate and a National Journeyworker Certificate issued by the USDOL. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Career and College Promise**

**Course Number:** Various

**Recommended Maximum Enrollment:** Varies

**Hours of Instruction:** Does not apply

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Career and College Promise provides a way for any North Carolina 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 North Carolina 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.

## **CTE Cooperative Education**

**Course Number:** WO04 (BMA), WO06 (FINA), WO07 (GOVT), WO14 (MRKT)

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** To get academic credit, the aligned coursework and related paid employment must be completed in the same academic year, which may be concurrent or consecutive semesters.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Experience paid employment aligned with classroom instruction, creating a structured work-based learning experience. Devise a jointly agreed training plan involving the student, teacher, employer, and parent, which outlines specific learning outcomes aligned with the student's career objective. Synthesize classroom content, career goals, roles, and responsibilities through a written agreement between the school and employer. Experience real-world application of technical skills, durable employability skills, and related education in an authentic workforce environment. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Entrepreneurial Experience**

**Course Number:** WE04 (BMA), WE06 (FINA), WE07 (GOVT), WE14 (MRKT)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** Two CTE course credits: one must be a concentrator course.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for the management, responsibilities, and risks of operating a business in a career pathway. Experience real-world application of workplace and employability skills in business management and operations. Learn skills and approaches to successfully evaluate and create new business opportunities. Gain the knowledge and skills for careers in the pathway of choice.

### **CTE Internship**

**Course Number:** WI04 (BMA), WI06 (FINA), WI07 (GOVT), WI14 (MRKT)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through observation and participation in the daily operations of a career in a general career field. Experience real-world application of job tasks acquired by utilizing durable employability skills in an authentic workforce activity. Gain the knowledge and skills for careers in the pathway of choice.

### **CTE Pre-apprenticeship**

**Course Number:** WP04 (BMA), WP06 (FINA), WP07 (GOVT), WP14 (MRKT)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for opportunities for postsecondary education and employment in an apprenticeship in a career field registered with ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce activity. Evaluate and plan for a postsecondary career in the career cluster/pathway. Gain the knowledge and skills for careers in the pathway of choice.

## **CAREER DEVELOPMENT EDUCATION PROGRAM DESCRIPTION**

Career Development curriculum provides the foundation to prepare students for careers and education in the 21<sup>st</sup> century; it is designed to introduce students to the opportunity to understand and make connections between their interests, attitudes, values, personality, learning styles, skills, and career choices. Students understand the lifelong, sequential process of determining self and career identity.

Middle school and high school career development curriculum includes competencies in self-assessment, matching interests to career choices, exploring the world of work, career research, education and career awareness, career exploration, evaluation of career information, and creation of a career plan. NC Career Development curriculum is the foundation for NC Career and Technical Education and Pathways.

Student participation in Career and Technical Student Organization (CTSO) competitive events, community service, and leadership activities additionally provide the opportunity to apply essential standards and workplace readiness skills through authentic experiences.

Opportunities for leadership development, critical and creative thinking, decision-making, problem-solving, teamwork, technology, and work-based learning are provided. The NC Career Development curriculum is based on the National Career Development Guidelines and National Standards for School Counseling Programs, endorsed by the North Carolina State Board of Education.

For specific information about CD pathways, courses, credentials, and standards, please refer to the NC CTE Course Management System (CMS) website: <https://center.ncsu.edu/nccte-cms/>

### **Career Development Contact Connection**

For specific inquiries related to Career Development:

CTECareerDevelopment@dpi.nc.gov

## **Career Development Education Course Descriptions**

### **Career Exploration**

**Course Number:** EY30\*

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 30 - 90 hours

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Engage in activities that illuminate the vital knowledge, skills, and purpose of careers in these areas: Agriculture; Business, Finance, and Marketing; Computer Science, IT and Technology; Health Science; Family and Consumer Sciences; Trade and Industrial - Construction and Manufacturing; and Trade and Industrial - Transportation and Public Safety. Become empowered to self-assess personal aptitudes, skills, values, personality, and career interests. Evaluate aligned pathways to identify career education, training, and certifications. Gain information on the most cost-efficient path to entry and discover opportunities within the school setting to explore and prepare for the chosen career.

\* Course code EY30 should be used for all Career Exploration units based on local needs.

### **Career Management**

**Course Number:** ED45

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Focus on leadership, career development and management, essential employability skills, and career exploration through hands-on experiences. Develop an understanding of personal learning styles, speaking skills development, and team management skills. Build understanding of the National Career Development Guidelines, including communications skills, personal management, and teamwork. Gain the knowledge and skills for careers in all CTE pathways.

## **Exploring Careers and Employment**

**Course Number:** EY11

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop an orientation to career planning and future employment success. Explore the world of work, skills needed for employment success, and the career planning and preparation process. Build understanding of the National Career Development Guidelines, including communications skills, personal management, and teamwork. Gain the knowledge and skills for careers in all CTE pathways.

## **Exploring Financial Literacy**

**Course Number:** EY12

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the basics of financial literacy to build confidence in making financial decisions. Understand decision-making principles related to banking, budgeting, and credit. Discover careers in the financial industry while exhibiting mindful money management behaviors needed for adult life. Gain the knowledge and skills for careers in all Career and Technical Education pathways.

## **Exploring Personal Characteristics and Careers**

**Course Number:** EY10

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop an orientation to self-awareness and the world of work. Explore how interests, attitudes, values, learning styles, skills, and personality influence career choices. Build an understanding of the National Career Development Guidelines, including communications skills, personal management, and teamwork. Gain the knowledge and skills for careers in all CTE pathways.

**IB Personal and Professional Skills**

**Course Number:** 0100

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 150

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA); Technology Student Association (TSA); North Carolina FFA Association; National FFA Organization; An Association for Marketing Education Students (DECA); Family, Career and Community Leaders of America (FCCLA); SkillsUSA; HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students develop attitudes, skills, and strategies to be applied to personal and professional situations and contexts now and in the future.



## COMPUTER SCIENCE, IT, AND TECHNOLOGY EDUCATION PROGRAM DESCRIPTION

Computer Science, IT, and Technology (CSITT) is a discipline focusing on the understanding and creation of information and technological systems to be a digital age learner. As part of the CSITT career pathways, students can experience computing systems and applications, networks and the internet, data analytics, programming and algorithms, impacts of technology, STEM, information processing, design thinking, engineering and advanced manufacturing, artificial intelligence and robotics, and cybersecurity and privacy. CSITT career pathways align to the NC CS K-12 Standards and Course of Study.

Career pathways that students may pursue include:

- Adobe Academy
- Adobe Video Design
- AP Computer Science
- Cisco Network Engineering
- Computer Engineering
- Computer Science Principles
- Data Science
- 3D Modeling and Animation
- Game Art Design
- Network Administration
- Network Security
- PLTW Engineering
- Python Programming
- SREB AC Career Pathway – Aerospace Engineering
- SREB AC Career Pathway – Innovations in Science and Technology
- Technology Engineering and Design

For specific information about CSITT pathways, courses, credentials, and standards, please refer to the NC CTE Course Management System website: <https://center.ncsu.edu/nccte-cms/>.

Students may pursue more than one intracurricular CTSO.

Future Business Leaders of America (FBLA) inspires and prepares students to become community-minded business leaders in a global society through relevant career preparation and leadership experiences. FBLA programs focus on leadership development, which includes essential soft skills; academic competitions; educational programs in which members create career portfolios, enhancing their knowledge with world-recognized skills certifications; and access to select college scholarships. FBLA programs also place a strong emphasis on community service through support of the March of Dimes to help end premature births. Finally, FBLA members can build a portfolio of accomplishments with a wide range of awards programs with regional, state, and national recognition.

SkillsUSA is a partnership of education and industry designed to strengthen our nation's skilled workforce. Our mission is to empower our members to become world-class workers and leaders. SkillsUSA improves the quality of our nation's future skilled workforce through the development of personal, workplace, and technical skills grounded in academics. SkillsUSA empowers students to become skilled professionals and career-ready leaders, providing every member the opportunity for career success. SkillsUSA changes lives by providing opportunities for leadership, developing their future careers, having dedicated and passionate trade instructors, and connecting with industry leaders in their communities and nationwide. SkillsUSA student members have the opportunity to develop and participate in a variety of activities and competitive events that showcase their personal, workplace, and technical skills at the local, regional, state, and national levels.

Technology Student Association (TSA) is an essential element of the state's CSITT Education Program. This student organization provides the opportunity for students to engage in activities directly reflecting the curriculum. Along with learning collaboration and leadership skills, students can engage in student-centered, complex tasks that are authentic and developed over an extended period. Beyond the powerful influence of the activities, participation in the TSA helps transform programs by affording both the teacher and students the opportunity to learn from others by attending regional, state, and national conferences.

## Computer Science, IT, and Technology Education Course Descriptions

### Adobe Digital Design I

**Course Number:** CD12

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Build creative websites using techniques in Adobe Dreamweaver. Explore principles for web authoring and maintaining website content. Train to earn the industry-recognized Adobe Certified Professional Dreamweaver credential. Gain the knowledge and skills for careers in the Adobe Academy pathway.

### Adobe Video Design I

**Course Number:** CD14

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Discover the legal, technical, and editorial principles employed in the video industry necessary to understand ethical implications before engaging in a film project. Work collaboratively to conceive, plan, and execute production plans to create audio and video assets. Use Adobe Premiere Pro features to edit audio and video clips to create and publish a range of video products. Gain the knowledge, skills, and credentials necessary for career possibilities in the Adobe Video Design pathway.

### Adobe Video Design II

**Course Number:** CD15

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CD14 Adobe Video Design I

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Engage in the preproduction, production, and postproduction processes of video creation. Develop digital media products in the fields of audio, news-style video, and interview-style video. Design social media products to be used on multiple platforms using cinematic storytelling elements. Gain knowledge and skills for careers in the Adobe Video Design pathway.

## **Adobe Visual Design I**

**Course Number:** CD10

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Build logos and vector images using features in Adobe Illustrator. Enhance photographs using features in Adobe Photoshop. Produce images to be used in business publications and communications. Gain knowledge and skills for careers in the Adobe Academy pathway.

## **Adobe Visual Design II**

**Course Number:** CD11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CD10 Adobe Visual Design I

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore elements that make an exceptional digital and print publications. Create print and digital publications in Adobe InDesign. Train to earn the industry-recognized Adobe Certified Professional InDesign credential. Gain knowledge and skills for careers in the Adobe Academy pathway.

## **Advanced Game Art and Design**

**Course Number:** CD31

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CD30 Game Art and Design

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore advanced game theory to continue the journey of the gaming industry. Level up production management skills on a real-world inspired game development team. Create 3D game levels and more using industry standard software. Gain the knowledge and skills for careers in the Game Art and Design pathway.

## **AP Computer Science A**

**Course Number:** 2A02

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** AP Computer Science A is an introductory college-level computer science course. Students cultivate their understanding of coding through analyzing, writing, and testing code as they explore concepts like modularity, variables, and control structures.

## **AP Computer Science Principles**

**Course Number:** 0A02

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** AP Computer Science Principles introduces students to the foundational concepts of the field and challenges them to explore how computing and technology can impact the world.

## **AP Statistics**

**Course Number:** 2A03

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Learn about the major concepts and tools used for collecting, analyzing, and drawing conclusions from data. Explore statistics through discussion and activities, and design surveys and experiments.

## **Apple: Everyone Can Code I - Puzzles**

**Course Number:** CY13

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore Swift Playgrounds to begin to learn the basics of coding. Devise programs that use basic computing concepts like variables, loops, conditionals, and functions. Explore the power of commands in digital technologies and how coding impacts everyday life. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Apple: Everyone Can Code II - Adventures**

**Course Number:** CY14

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** CY13 Apple: Everyone Can Code I - Puzzles

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Experiment with Swift Playgrounds to learn more advanced coding concepts. Code programs that use event-driven programming to express creative ideas. Build computing programs that make effective use of multiple hardware components. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Artificial Intelligence I**

**Course Number:** CA10

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore artificial intelligence and its impact on society. Utilize artificial intelligence with coding in multiple programming languages. Develop artificial intelligence programs that make use of sensory data, numerical data, and data sets. Gain the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Business Essentials**

**Course Number:** BF10

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Cisco Network Engineering Technology I**

**Course Number:** CI10

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the devices, concepts, and tools that allow the internet to flow to various devices. Build simple local area networks. Configure routers, switches, and implement IP addressing schemes. Gain the knowledge, skills, and industry credential for careers in the Cisco Network Engineering pathway.

## **Cisco Network Engineering Technology II**

**Course Number:** CI11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CI10 Cisco Network Engineering Technology I

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Configure and troubleshoot routers and switches in a network. Use monitoring tools and network management protocols to troubleshoot data networks. Implement access control lists to filter traffic. Gain the knowledge, skills, and industry credential for careers in the Cisco Network Engineering pathway.

## **Coding in Minecraft - Introductory**

**Course Number:** CY30

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Design algorithms using the Minecraft platform. Investigate how to determine the outcome of running a series of programming statement. Perform the process of debugging and resolving problems in algorithms. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

### **Coding in Minecraft - Intermediate**

**Course Number:** CY31

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** CY30 Coding in Minecraft - Introductory

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop programs in the Minecraft platform with block-based coding and using MakeCode. Build programs that utilize variables, logic statements, and loops. Produce a program that effectively solves a problem. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

### **Coding in Minecraft - Advanced**

**Course Number:** CY32

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** CY31 Coding in Minecraft - Intermediate

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop programs in the Minecraft platform with text-based coding and using JavaScript. Establish where code can be reused, follow JavaScript code, and predict the outcome. Code programs in JavaScript that make use of logic statements, comparison operators, and iteration. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

### **Coding in Minecraft – Expert Coding**

**Course Number:** CP05

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Gain knowledge and skills of JavaScript or Python Programming utilizing the Minecraft platform. Code complex programs in JavaScript or Python that make use of variables and data types, selection and branching, iteration loops, error handling, and modularity. Explore the knowledge and skills for careers in the Computer Science Principles pathways.



## **CompTIA IT Fundamentals**

**Course Number:** CI00

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Set up and install common peripheral devices to a laptop or PC and secure a basic wireless network. Manage applications software while understanding the various components of an operating system. Interpret programming language categories and interpret the logic and purpose of programming. Gain the knowledge, skills, and industry credential for careers in the Computer Engineering pathway.

## **Computer Engineering Technology I**

**Course Number:** CI01

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CI00 CompTIA IT Fundamentals

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Install, configure, and maintain computer equipment, mobile devices, and software for end users. Service components based on customer requirements. Support and troubleshoot Windows OS, Mac OS, and Linux OS environments. Troubleshoot real-world device and network issues. Gain the knowledge, skills, and industry credential for careers in the Computer Engineering pathway.

## **Computer Engineering Technology II**

**Course Number:** CI02

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CI01 Computer Engineering Technology I

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Troubleshoot PC and mobile device issues including common OS, malware, and security issues. Identify and protect against security vulnerabilities for devices and their network connections. Perform critical IT support tasks. Gain the knowledge, skills, and industry credential for careers in the Computer Engineering pathway.

## **Computer Science I**

**Course Number:** CS20

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore how data is stored, transmitted, and used by computers. Investigate the benefits and harms of quickly advancing technology on society. Produce unique and interactive computer programs. Gain the knowledge and skills for careers in the Computer Science Principles pathway.

## **Computer Science II**

**Course Number:** CS21

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CS20 Computer Science I

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description** Code programs that use advanced creativity and large data sets. Create computer programs that make use of advanced algorithms and procedures. Explore the impacts of computers on a global scale. Gain the knowledge and skills for careers in the Computer Science Principles pathway.

## **Computer Science Discoveries I**

**Course Number:** CY20

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Solve a series of puzzles, challenges, and real-world scenarios using problem-solving processes. Explore how computers take input, output, store, and process information to help humans resolve problems. Design original content and share it on a webpage using HTML and CSS. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Computer Science Discoveries II**

**Course Number:** CY21

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** CY20 Computer Science Discoveries I

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Code program animations, interactive art, and games in the Game Lab. Program various apps, from simple shapes up to sophisticated sprite-base game, using multiple programming concepts. Enhance problem-solving abilities by analyzing the needs of others and develop programs to meet them. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Computer Science Discoveries III**

**Course Number:** CY22

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** CY21 Computer Science Discoveries II

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Utilize the App Lab and Adafruit's Circuit Playground to develop programs that take advantage of hardware inputs and outputs. Participate in the design process from simple prototype to finished product. Explore the role of hardware platforms in computing and how different sensors can provide more effective input and output than the traditional keyboard, mouse, and monitor. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **3D Modeling and Animation I**

**Course Number:** CD20

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Create 3D artwork using various industry level applications. Construct scenes with physical materials, lights and virtual cameras. Build and animate original scenes with 3D models. Gain the knowledge and skills for careers in the 3D Modeling pathway.

### **3D Modeling and Animation II**

**Course Number:** CD21

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CD20 3D Modeling and Animation I

**Aligned Career Technical Student Organization(s):** SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Amplify 3D models into reality by applying real-world materials and shaders. Deliver 3D character model to life with rigging and animation techniques. Forge creative potential with lights and cameras on a digital stage. Gain the knowledge, skills, and industry credential for careers in the 3D Modeling and Animation pathway.

### **Drone Technology I**

**Course Number:** ID11

Please refer to the Trade and Industrial Education Program Area for the full course description.

### **Drone Technology II**

**Course Number:** ID12

Please refer to the Trade and Industrial Education Program Area for the full course description.

### **Drone Technology Fundamentals**

**Course Number:** ID10

Please refer to the Trade and Industrial Education Program Area for the full course description.

### **Engineering Design**

**Course Number:** CT12

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CT10 Technology Engineering and Design

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the elements of design as a team to analyze factors that lead to data-driven design improvements. Establish constraints from outside factors within designs. Engineer a solution for a problem within one of the grand challenges of engineering. Gain the knowledge and skills for careers in the Technology, Engineering, and Design pathway.

### **Engineering: Exploring Technology I**

**Course Number:** CY40

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Discover and use technology, engineering, and design journals and the Engineering Design Process. Construct and test prototypes to various design challenges. Experiment with different types of energy sources. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Engineering: Exploring Technology II**

**Course Number:** CY41

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** CY40 Engineering: Exploring Technology I

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop an invention timeline that includes the major innovations to the product. Design and build prototypes, solve design problems, and write interactive stories using the design process. Discover and use the upcycling process. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Engineering: Invention and Innovation I**

**Course Number:** CY42

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Design and engineer systems to accomplish specific goals or processes. Dissect objects to locate and troubleshoot potential sources of failure. Design, build, and document prototypes for various engineering design challenges. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Engineering: Invention and Innovation II**

**Course Number:** CY43

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** CY42 Engineering: Invention and Innovation I

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Discover and use the upcycling process. Design and build prototypes, solve design problems, and write interactive stories using the design process. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Engineering: Technological Systems I**

**Course Number:** CY44

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Design and engineer systems to accomplish specific goals or processes. Design, build, and document prototypes for various engineering design challenges. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Engineering: Technological Systems II**

**Course Number:** CY45

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 45

**Prerequisite:** CY44 Engineering: Technological Systems I

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Dissect objects to locate and troubleshoot potential sources of failure. Design, build, and document prototypes for various engineering design challenges. Explore the knowledge and skills for careers in the Computer Science, IT, and Technology pathways.

## **Entrepreneurship I**

**Course Number:** ME11

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Entrepreneurship II**

**Course Number:** ME12

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Game Art and Design**

**Course Number:** CD30

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CD20 3D Modeling and Animation I

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the basics of game theory and begin a journey into the gaming industry. Develop real-world soft skills by participating in a game development team. Design a prototype game to play with friends and family. Gain the knowledge and skills for careers in the Game Art Design pathway.

## **IB Computer Science HL**

**Course Number:** 2I01

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 240

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students investigate in greater depth current issues in computer science that are not included in the syllabus.

## **IB Computer Science SL**

**Course Number:** 2I00

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 150

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students learn programming skills as a critical element of developing higher-level skills applicable to virtually all fields of study.

## **IB Design Technology HL**

**Course Number:** 3I07

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 240

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students examine user-centered design (UCD), sustainability, innovation and markets, and commercial production further to extend and deepen their understanding of the subject.

## **IB Design Technology SL**

**Course Number:** 3I06

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 150

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students use design cycle as a tool, which provides the methodology used to structure the inquiry and analysis of problems, the development of feasible solutions, and the testing and evaluation of the solution.

## **IB Information Technology in a Global Society**

**Course Number:** BI05

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 150

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students examine individuals and societies. The course uses an integrated approach, encouraging students to make informed judgments and decisions about the role of information and communication technologies in contemporary society.

## **Introduction to Computer Science**

**Course Number:** CS10

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore computing systems, networks, and how the entire computer science ecosystem is part of society. Utilize basic processes to manipulate data and create meaningful visualizations. Understand the basics of programming and what artificial intelligence is. Gain the skills and knowledge for careers in the Computer Science, IT, and Technology pathways.

## **Introduction to Data Science**

**Course Number:** CS30

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None



**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore introductory concepts to data science, such as data organization and data visualization. Build data analysis and data visualizations using a variety of technology tools. Compose data structures and apply database relationships to help solve deep-level data questions. Gain the skills and knowledge for careers in the Data Science pathway.

## **Network Administration I**

**Course Number:** CI20

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Deploy ethernet solutions and configure wireless technologies. Explore basic networking concepts including networking services, physical connections, and cloud connectivity. Monitor networks to ensure business continuity. Gain the knowledge, skills, and industry credential for careers in the Network Administration pathway.

## **Network Administration II**

**Course Number:** CI21

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CI20 Network Administration I

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA); SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore security concepts and network attacks to harden networks against threats. Troubleshoot common cable, connectivity, and software issues. Optimize networks to ensure business continuity. Gain the knowledge, skills, and industry credential for careers in the Network Administration pathway.

## **Cybersecurity I**

**Course Number:** CI30

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Establish the core knowledge for jobs in cybersecurity. Secure and monitor enterprise networked environments. Detect potential threats and risks found when devices are connected online. Gain the knowledge, skills, and industry credential for careers in the Network Security pathway.

## **Cybersecurity II**

**Course Number:** CI31

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CI30 Cybersecurity I

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Identify, analyze, and respond to security events and threats. Enhance security settings on devices to meet U.S. Department of Defense Standards. Monitor and secure hybrid environments, including cloud, mobile, and IoT. Gain the knowledge, skills, and industry credential for careers in the Network Security pathway.

## **PLTW Aerospace Engineering**

**Course Number:** CE15

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CE10 PLTW Introduction to Engineering Design or CE11 PLTW Principles of Engineering

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** In this specialization Project Lead the Way (PLTW) Pathway to Engineering (PTE) course, students design problems related to aerospace information systems, astronautics, rocketry, propulsion, the physics of space science, space life sciences, the biology of space science, principles of aeronautics, structures and materials, and systems engineering. Using 3-D design software, students work in teams utilizing hands-on activities, projects, and problems and are exposed to various situations encountered by aerospace engineers. Art, English, language arts, mathematics, and science are reinforced.

## **PLTW Civil Engineering and Architecture**

**Course Number:** CE14

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CE10 PLTW Introduction to Engineering Design or CE11 PLTW Principles of Engineering

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** In this specialization Project Lead the Way (PLTW) Pathway to Engineering (PTE) course, students learn important aspects of building and site design and development. They apply math, science, and standard engineering practices to design both residential and commercial projects and document their work using 3-D architectural design software. Art and English language arts are also reinforced.

### **PLTW Cybersecurity**

**Course Number:** CI35

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** PLTW Cybersecurity introduces the tools and concepts of cybersecurity and encourages students to create solutions that allow people to share computing resources while protecting privacy. Nationally, computational resources are vulnerable and frequently attacked; in PLTW Cybersecurity, students solve problems by understanding and closing these vulnerabilities. This course raises students' knowledge of and commitment to ethical computing behavior. It also aims to develop students' skills as consumers, friends, citizens, and employees who can effectively contribute to communities with a dependable cyber-infrastructure that moves and processes information safely. Strong communication skills are necessary and English language arts, mathematics, and science standards are reinforced.

### **PLTW Digital Electronics**

**Course Number:** CE13

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CE10 PLTW Introduction to Engineering Design or CE11 PLTW Principles of Engineering

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** In this foundation Project Lead the Way (PLTW) Pathway to Engineering (PTE) course, students explore the foundations of computing by engaging in circuit design processes to create combinational logic and sequential logic (memory) as electrical engineers do in industry. Art, English language arts, mathematics and science are reinforced.

## **PLTW Capstone**

**Course Number:** CE16

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CE13 PLTW Digital Electronics or CE17 PLTW Computer Integrated Manufacturing or CE14 PLTW Civil Engineering and Architecture or CE15 PLTW Aerospace Engineering or PLTW Environmental Sustainability

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** In this capstone Project Lead the Way (PLTW) Pathway to Engineering (PTE) course, students identify a real-world challenge and then research, design, and test a solution, ultimately presenting their unique solutions to a panel of engineers.

## **PLTW Engineering Essentials**

**Course Number:** CE12

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students explore the breadth of engineering career opportunities and experiences as they solve engaging and challenging real-world problems like creating a natural relief center system or creating a solution to improve the safety and well-being of local citizens.

## **PLTW Gateway: App Creators**

**Course Number:** CY62

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students are exposed to computer science as a means of computationally analyzing and developing solutions to authentic problems through mobile app development and will convey the positive impact of the application of computer science to other disciplines and to society.

## **PLTW Gateway: Automation and Robotics**

**Course Number:** CY61

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students learn about the history and impact of automation and robotics as they explore mechanical systems, energy transfer, machine automation, and computer control systems. Using the VEX Robotics® platform, students apply what they know to design and program traffic lights, robotic arms, and more.

### **PLTW Gateway: Computer Science for Innovators and Makers**

**Course Number:** CY63

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students will learn about programming for the physical world by blending hardware design and software development, allowing students to discover computer science concepts and skills by creating personally relevant, tangible, and shareable projects.

### **PLTW Gateway: Design and Modeling**

**Course Number:** CY60

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students discover the design process and develop an understanding of the influence of creativity and innovation in their lives. They are then challenged and empowered to use and apply what they have learned to design a therapeutic toy for a child who has cerebral palsy.

### **PLTW Gateway: Energy and the Environment**

**Course Number:** CY64

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students are challenged to think big and toward the future as they explore sustainable solutions to our energy needs and investigate the impact of energy on our lives and the world. They use what they have learned to design and model alternative energy sources, as well as evaluate options for reducing energy consumption.

### **PLTW Gateway: Flight and Space**

**Course Number:** CY65

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** The exciting world of aerospace comes alive through Flight and Space (FS). Students become engineers as they design, prototype, and test models to learn about the science of flight and what it takes to travel and live in space. They solve real-world aviation and space challenges and plan a mission to Mars.

### **PLTW Gateway: Green Architecture**

**Course Number:** CY68

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students learn how to apply green concepts to the fields of architecture and construction. They explore dimensioning, measuring, and architectural sustainability and apply what they have learned to design affordable housing units using Autodesk's® 3D architectural design software.

### **PLTW Gateway: Magic of Electrons**

**Course Number:** CY67

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students examine the behavior and parts of atoms as well as the impact of electricity on the world around them. They learn skills in basic circuitry design and use what they know to propose designs such as a burglar alarm for an art museum.

### **PLTW Gateway: Medical Detectives**

**Course Number:** CY69

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students play the role of real-life medical detectives as they collect and analyze medical data to diagnose disease. They solve medical mysteries through hands-on projects and labs, measure and interpret vital signs, examine nervous system structure and function, investigate disease outbreaks, and explore how a breakdown within the human body can lead to dysfunction.

### **PLTW Gateway: Science of Technology**

**Course Number:** CY66

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Science impacts the technology of yesterday, today, and the future. Students apply the concepts of physics, chemistry, and nanotechnology to activities and projects, including making ice cream, cleaning up an oil spill, and discovering the properties of nanomaterials.

### **PLTW Introduction to Engineering Design**

**Course Number:** CE10

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** In this foundation Project Lead the Way (PLTW) Pathway to Engineering (PTE) course, students are exposed to the design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards, and technical documentation. Students use 3D solid modeling design software to help them design solutions to solve proposed problems and learn how to document their work and communicate solutions to peer and members of the professional community. Art, English, language arts, mathematics and science are reinforced.

## **PLTW Principles of Engineering**

**Course Number:** CE11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** In this foundation Project Lead the Way (PLTW) Pathway to Engineering (PTE) course, students survey engineering and are exposed to major concepts they will encounter in a postsecondary engineering course of study. Students employ engineering and scientific concepts in the solution of engineering design problems. They develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges, documenting their work and communicating solutions to peers and members of the professional community. Art, English language arts, mathematics and science are reinforced.

## **Project Management I**

**Course Number:** GS11

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Project Management II**

**Course Number:** GS12

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Python Programming I**

**Course Number:** CP10

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Craft basic programs utilizing Python programming language. Execute functions, loops, operations, and data sets in various programs. Design programs with considerations for ethics, security, and how to implement the problem-solving process throughout the coding process. Gain the knowledge and skills for careers in the Python Programming pathway.



## **Python Programming II**

**Course Number:** CP11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CP10 Python Programming I

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Design, write, debug, and run programs encoded in the Python language. Formulate program using Internet of Things (IoT) programs. Develop stories utilizing data sets, visualizations, and Python programming. Gain the knowledge and skills for careers in the Python Programming pathway.

## **SAS Base Programming**

**Course Number:** CS31

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CS30 Introduction to Data Science

**Aligned Career Technical Student Organization(s):** Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Build SAS programs to solve common data analysis problems. Illustrate data using custom formats and tables. Synthesize data to help develop a story with data. Gain the knowledge and skills for careers in the Data Science pathway.

## **SREB AC Advanced Aerospace Technology**

**Course Number:** CR21

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CR20 SREB AC Fundamentals of Aerospace Technology

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This course builds on the foundation of SREB AC Fundamentals of Aerospace Technology and engages students in applying the design process, using tools to collect and analyze data, exploring a deeper level of the science of aviation and discovering how quality control systems work in the aviation field. Students will work collaboratively in teams to design, build and test a wing; plot a course for a plane to take off and land; design, build and test a wing attachment system; test materials under stress; and design, build and test an electric-powered plane. Students will demonstrate their newly acquired knowledge and skills by presenting their innovative ideas, techniques and solutions to business and industry partners. Students will work collaboratively, manage projects, be creative and innovative, think critically, and solve problems as well as propose solutions to design problems. Further, they will learn to apply literacy, mathematics and science concepts and use technology to effectively solve real-world, challenging problems with business and industry partners. Through project-based learning, students will explore the future of the aerospace industry and learn to apply those habits of behavior and mind unique to the field.

### **SREB AC Aeronautics Engineering Applications**

**Course Number:** CR22

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CR21 SREB AC Advanced Aerospace Technology

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This project-based learning course is for students who have successfully completed SREB AC Fundamentals of Aerospace Technology and SREB AC Advanced Aerospace Technology. Students will learn about systems such as flight control, remote-control vehicles, and the virtual world. Students will learn to fly using flight simulators. They will work collaboratively to propose a shift from a VOR navigation system to a GPS system and determine the cost savings. In addition, students will develop rotor blades for helicopters and design and program an unmanned flying vehicle. Students will work collaboratively, manage projects, be creative and innovative, think critically, and solve problems as well as propose solutions to design problems. Further, they will learn to apply literacy, mathematics and science concepts and use technology to effectively solve real-world, challenging problems with business and industry partners. Through project-based learning, students will explore the future of the aerospace industry and learn to apply those habits of behavior and mind unique to the field.

### **SREB AC Astronautics Engineering Applications**

**Course Number:** CR23

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CR22 SREB AC Aeronautics Engineering Applications

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students in this capstone course will focus on outer space and underwater applications. During the six projects, they will work collaboratively to design, build, and test a laser communication system; develop a plan for space survivability in hostile environments; and utilize software to create a three-dimensional model of a satellite orbit and a team remote vehicle for underwater exploration. Students will work collaboratively, manage projects, be creative and innovative, think critically, and solve problems as well as propose solutions to design problems. Further, they will learn to apply literacy, mathematics and science concepts and use technology to effectively solve real-world, challenging problems with business and industry partners. Through project-based learning, students will explore the future of the aerospace industry and learn to apply those habits of behavior and mind unique to the field.

## **SREB AC Fundamentals of Aerospace Technology**

**Course Number:** CR20

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This project-based learning course engages students who are curious about aviation and aerospace careers. This course will introduce students to an engineering design process, tools to collect and analyze data, the science of aviation, materials and structures, and safety. Students will participate in real-world experiences such as designing, building, and testing a pilot seat, kite, straw rocket and launcher, motor-powered rocket and a model glider. Students will work collaboratively, manage projects, be creative and innovative, think critically, and solve problems as well as propose solutions to design problems. Further, they will learn to apply literacy, mathematics and science concepts and use technology to effectively solve real-world, challenging problems with business and industry partners. Through project-based learning, students will explore the future of the aerospace industry and learn to apply those habits of behavior and mind unique to the field.

## **SREB AC IST Nature of Science and Technology**

**Course Number:** CR15

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150

(regular) **Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This is a contextual-based course that introduces students to the core fundamental concepts of science and technology through authentic projects. Through these projects, students will develop an understanding of the relationship between the physical, biological, and social world. Students will gain an understanding of the differences between science and technology and learn that technology is a process for applying science. Students will develop a deeper understanding of scientific inquiry and the engineering design process when solving real-world problems. Students will experience the interaction of science, technology, engineering, math, and literacy through a problem-based learning environment. Finally, the process will require students to use mathematics to analyze costs, develop budgets and make precise measurements to successfully implement project goals.

## **SREB AC IST: Core Applications of Science and Technology**

**Course Number:** CR16

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CR15 SREB AC IST Nature of Science and Technology

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This course uses the concepts learned from SREB AC IST: The Nature of Science and Technology to further develop students' problem-solving strategies and skills needed by the 21st-century workforce. Students will continue to explore emerging technologies and techniques in the context of addressing authentic projects. Key concepts introduced in this course include sustainability and environmental trends, systems thinking, and trend analysis and prediction. Through engagement, students will experience the necessary connection between literacy, mathematics, and science in a variety of hands-on, real-world projects requiring them to apply academic and technical concepts and skills and technology to complete.

## **SREB AC IST: Impacts of Science and Technology**

**Course Number:** CR17

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CR16 SREB AC IST: Core Applications of Science and Technology

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This course will examine the past, present, and future impact of science and technology on culture, society, and the environment. Students will explore how their predecessors worked to solve some problems that still exist today and examine the potential of using modern technology to solve those problems. From these explorations, students will engage in a variety of hands-on design projects that will address tradeoffs, optimization, interconnectivity, and the nature of complex systems.

## **SREB AC IST: Creativity and Innovations**

**Course Number:** CR18

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CR17 SREB AC IST: Impacts of Science and Technology

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

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

## **Technological Design**

**Course Number:** CT11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CT10 Technology Engineering and Design

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore engineering through energy, manufacturing, and other industries. Fabricate prototypes to test design concepts. Engineer a solution to a problem in a community. Gain the knowledge and skills for careers in the Technology Engineering, and Design pathway.

## **Technology Engineering and Design**

**Course Number:** CT10

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore how technology evolved throughout human history. Discover the universal systems model in products and processes society uses every day. Build a scale model of a structure by applying the Engineering Design Process. Gain the knowledge and skills for careers in the Technology Engineering, and Design pathway.

## **CTE Advanced Studies**

**Course Number:** WS01 (AAVC), WS11 (INFO)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** Two CTE courses: one must be a concentrator course

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through analysis and research of selected career pathway. Experience real-world application of course/pathway content through a work-based learning lens acquired by utilizing employability skills in an authentic workforce activity. Evaluate and plan for a postsecondary career while educating others. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Apprenticeship**

**Course Number:** WA01 (AAVC), WA11 (INFO)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Perform the job duties and related education required as an employed apprentice in a career field registered by ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce environment. Evaluate and plan for a postsecondary career in the career cluster/pathway culminating in a State Certificate and a National Journeyworker Certificate issued by the USDOL. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Career and College Promise**

**Course Number:** Various

**Recommended Maximum Enrollment:** Varies

**Hours of Instruction:** Does not apply

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Career and College Promise provides a way for any North Carolina 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 North Carolina 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.

## **CTE Cooperative Education**

**Course Number:** WO01 (AAVC), WO11 (INFO)

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** To get academic credit, the aligned coursework and related paid employment must be completed in the same academic year, which may be concurrent or consecutive semesters.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Experience paid employment aligned with classroom instruction, creating a structured work-based learning experience. Devise a jointly agreed training plan involving the student, teacher, employer, and parent, which outlines specific learning outcomes aligned with the student's career objective. Synthesize classroom content, career goals, roles, and responsibilities through a written agreement between the school and employer. Experience real-world application of technical skills, durable employability skills, and related education in an authentic workforce environment. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Entrepreneurial Experience**

**Course Number:** WE01 (AAVC), WE11 (INFO)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** Two CTE course credits: one must be a concentrator course.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for the management, responsibilities, and risks of operating a business in a career pathway. Experience real-world application of workplace and employability skills in business management and operations. Learn skills and approaches to successfully evaluate and create new business opportunities. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Internship**

**Course Number:** WI01 (AAVC), WI11 (INFO)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through observation and participation in the daily operations of a career in a general career field. Experience real-world application of job tasks acquired by utilizing durable employability skills in an authentic workforce activity. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Pre-apprenticeship**

**Course Number:** WP01 (AAVC), WP11 (INFO)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for opportunities for postsecondary education and employment in an apprenticeship in a career field registered with ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce activity. Evaluate and plan for a postsecondary career in the career cluster/pathway. Gain the knowledge and skills for careers in the pathway of choice.



## **FAMILY AND CONSUMER SCIENCES EDUCATION PROGRAM DESCRIPTION**

Family and Consumer Sciences (FCS) serves as a crucial bridge for all students, equipping them to address significant societal challenges including work-and-family dynamics, healthcare, childcare and eldercare, family and community safety, global economics and politics, and technology integration. FCS Education acts as a catalyst, transforming these issues into action-oriented, skill-building educational programs. In North Carolina, the FCS Education program offers students a platform to transition into adulthood, providing them with a solid foundation of knowledge and skills necessary for success in living and working within a diverse, global society.

Students develop personal effectiveness and industry-relevant technical skills as they explore and pursue career pathways aligned to the FCS Body of Knowledge and Family and Consumer Sciences National Standards 3.0.

Career pathways that students may pursue include:

- Apparel and Textile Production
- Counseling and Mental Health
- Culinary Arts Applications
- Culinary Arts Internship
- Early Childhood Development and Services
- Food and Nutrition
- Food Products and Processing Systems
- Hospitality and Tourism Management
- Human Services
- Interior Design
- Teaching and Training

For specific information about FCS pathways, courses, credentials, and standards, please refer to the NC CTE Course Management System website: <https://center.ncsu.edu/nccte-cms/>

Family, Career and Community Leaders of America (FCCLA) provides intra-curricular resources and opportunities for students to pursue careers that support families. Since 1945, FCCLA members have been making a difference in their families, careers, and communities by addressing important personal, work, and societal issues through Family and Consumer Sciences education. FCCLA's work aids students and teachers in addressing various youth concerns, including parenting, family relationships, substance abuse, peer pressure, sustainability, nutrition and fitness, teen violence, and career preparation. Involvement in FCCLA offers members the chance to expand their leadership potential and develop life skills, such as planning, goal setting, problem-solving, decision-making, and interpersonal communication, which are essential in both the home and workplace.

DECA, an Association for Marketing Education Students, serves as the Career and Technical Student Organization for marketing students, enhancing their class and work experiences. It enables students to cultivate practical presentation, decision-making, and leadership skills. DECA strongly encourages work-based learning experiences, such as Cooperative Education, to augment classroom instruction with real-world relevance.

## Family and Consumer Sciences Education Course Descriptions

### **Apparel and Textile Production II**

**Course Number:** FA32

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FA07 Fashion and Textiles I - Fundamentals

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA))

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Design apparel utilizing the design process. Implement advanced sewing skills to engineer an apparel product. Simulate marketing and business experience to explore the apparel industry. Gain the knowledge and skills for careers in apparel and textile production.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

### **Child Development**

**Course Number:** FE60

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Investigate the major influences on child development including culture, heredity, and environmental factors. Explore the importance of early relationships and how they promote healthy brain development while identifying characteristics of children birth through age five. Identify the different theories of child development and their impact on the physical, social, emotional, and cognitive domains of development in children. Gain the knowledge and skills for careers in early childhood development and services.

### **Counseling and Mental Health I**

**Course Number:** FC13

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop an understanding of healthy relationships on an individual's personal development. Engage in effective communication strategies for strengthening relationships. Explore the correlation of family systems on an individual's well-being throughout one's lifespan. Gain the knowledge and skills for careers in counseling and mental health.

## **Counseling and Mental Health II**

**Course Number:** FC14

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FC13 Counseling and Mental Health I

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Focus on the classification of mental health disorders. Inspire an understanding of mental health theories and treatments. Explore how human brain functions affect mental health. Gain the knowledge and skills for careers in counseling and mental health.

## **Culinary Arts and Hospitality I**

**Course Number:** FH10

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Utilize foodservice equipment and tools in preparation of numerous types of cuisines. Practice culinary skills in baking, garde manger, and basic cooking methods. Practice safety and sanitation to prepare for the foodservice industry. Gain the knowledge and skills for careers in culinary arts and hospitality.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Culinary Arts and Hospitality II Applications**

**Course Number:** FH11

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FH10 Culinary Arts and Hospitality I

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Execute the planning of foodservice operations in a school-based enterprise. Design a variety of cuisines to apply learned cooking methods. Explore United States' regional soups and global baking and pastry arts. Gain the knowledge, skills, and certification for careers in culinary arts and hospitality.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Culinary Arts and Hospitality II Internship**

**Course Number:** FH12

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FH10 Culinary Arts and Hospitality I

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Participate in a mentored internship in the foodservice industry to apply learned cooking methods. Grow in application of skills in basic food preparation and baking. Explore United States regional soups or global baking and pastry arts. Gain the knowledge, skills, and certifications for careers in culinary arts and hospitality.

\* For safety reasons and intern placement, the recommended enrollment should not exceed 20 students.

## **Culinary Arts and Hospitality III**

**Course Number:** FH13

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FH11 Culinary Arts and Hospitality II Applications OR FH12 Culinary Arts and Hospitality II Internship

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Build knowledge of management and menu planning within a foodservice operation. Establish understanding of food preservation techniques, yeast bread and pastries preparation. Learn the skills to earn a certification for advancement in the food service industry. Gain the knowledge, skills, and industry credential for careers in culinary arts and hospitality.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Culinary Arts and Hospitality IV Applications**

**Course Number:** FH14

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FH13 Culinary Arts and Hospitality III

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Design menus for a food service operation. Demonstrate advanced skills in food operation, baking, and pastry. Operate a school-based enterprise by preparing, marketing, and selling a variety of food products. Gain the knowledge and skills for careers in culinary arts and hospitality.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Drone Technology I**

**Course Number:** ID11

Please refer to the Trade and Industrial Education Program Area for the full course description.

## **Drone Technology II**

**Course Number:** ID12

Please refer to the Trade and Industrial Education Program Area for the full course description.

## **Drone Technology Fundamentals**

**Course Number:** ID10

Please refer to the Trade and Industrial Education Program Area for the full course description.

## **Early Childhood Education I**

**Course Number:** FE11

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 270 (block) 300 (regular)

**Prerequisite:** FE60 Child Development. Students must be 15 years old by the 10<sup>th</sup> day of class.

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Acquire the knowledge and skills needed to provide developmentally appropriate practices in high quality early childhood education programs. Explore ways of creating a child-centered approach to curriculum planning that includes the use of space, materials, relationships, play, and observations. Participate in practical hands-on internship working within the early childhood classroom, learn how to meet the individual needs of children with varying abilities, and reflect on learning experiences and their impact on children. Gain the knowledge, skills, and industry credential for careers in early childhood development and services.

\* Students are required to complete a TB screening and health questionnaire prior to interning. A criminal background check may also be required by the internship site.

\* For safety reasons and intern placement, the recommended enrollment should not exceed 20 students.

## **Early Childhood Education II**

**Course Number:** FE12\*

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 270 (block) 300 (regular)

**Prerequisite:** FE11 Early Childhood Education I

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Participate in the planning, creation, and adaptation of developmentally appropriate learning environments. Focus on curriculum, teaching practices, and learning materials through the internship experience. Teach children the importance of art and creativity. Gain the knowledge and skills for careers in early childhood education and services.

\* Students are required to complete a TB screening and health questionnaire prior to interning. A criminal background check may also be required by the internship site.

\* For safety reasons and intern placement, the recommended enrollment should not exceed 20 students.

## **Exploring Apparel and Interior Design**

**Course Number:** FY12

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Examine the field of apparel by exploring the elements of design, basic clothing construction, and the impact of marketing on clothing choices. Characterize the basics of interior design, including the basic principles of design. Practice managing living spaces and learn how sustainable design impacts housing. Gain the knowledge and skills for careers in apparel, textile, and interior design.

## **Exploring Childcare**

**Course Number:** FY14

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Investigate children's development from birth to age seven. Practice basic care of infants, toddlers, and preschoolers, discuss proper nutrition, understand how to prevent accidents, and how to use positive guidance while working with children. Illustrate the importance of well-prepared and trained babysitters and how to prepare for the diverse responsibility of being a babysitter. Gain the knowledge and skills for careers in early childhood education.

## **Exploring Nutrition and Wellness**

**Course Number:** FY11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Gain an understanding of the impact of choices on wellness by examining the current USDA Food Guidelines. Practice nutritious meal planning and preparation. Explore basic kitchen skills, safety needs, and sanitation. Gain the knowledge and skills for careers in hospitality and tourism or human services.

## **Exploring Social and Emotional Skills**

**Course Number:** FY10

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 45

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Gain an understanding of social and emotional learning. Explore communication skills, self-awareness, self-management, and careers in the human services field. Cultivate responsible decision-making skills, social awareness, and interpersonal relationships. Gain the knowledge and skills for careers in human services.

## **Fashion and Textiles I - Fundamentals**

**Course Number:** FA07

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the business of fashion through the lens of design, textiles, and merchandising. Sew a quality garment using a commercial pattern, determine appropriate textiles for functional products, and learn to speak the language of fashion. Discover the impact of the fashion cycle, trends, and target consumers in fashion and textile merchandising. Gain the knowledge and skills for careers in fashion, textiles, design, and merchandising.

## **Fashion Merchandising**

**Course Number:** MI21

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Food and Nutrition I**

**Course Number:** FN41

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Formulate an understanding of nutrition for a healthy lifestyle by preparing foods in each food group. Develop kitchen skills that promote proper food handling practice. Plan and execute meal management. Gain the knowledge, skills, and industry credential for careers in food and nutrition.

\*For safety and sanitation reasons, the recommended enrollment should not exceed 20 students.

## **Food and Nutrition II**

**Course Number:** FN42

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FN41 Foods and Nutrition I

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Expand knowledge of nutrient needs for a healthy lifestyle through the lifespan. Discover the impact of food systems on the environment, economy, society, and the individual. Develop an entrepreneurial venture idea using the Lean Canvas Business Model. Gain the knowledge, skills, and industry credential in food protection management for careers in food and nutrition.

\*For safety and sanitation reasons, the recommended enrollment should not exceed 20 students.

## **Food Science and Technology**

**Course Number:** FN43

**Recommended Maximum Enrollment:** 25 **Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FN41 Food and Nutrition I OR FN42 Food and Nutrition II

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the food industry from the farm to the table using skills in food science and technology. Realize the functions of food and how it affects the food individuals eat. Design food packaging to deploy a new food product to the market. Gain the knowledge and skills for careers in food products and processing.



## **Hospitality and Tourism Management I**

**Course Number:** FH31

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Family, Career and Community Leaders of America (FCCLA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Discover the limitless possibilities in the hospitality and tourism industry. Explore this multi-faceted industry and the impact on society, environment, and economy. Investigate ways to engage in exceptional guest service. Gain the knowledge, skills, and industry certification for careers in hospitality and tourism management.

## **Hospitality and Tourism Management II**

**Course Number:** FH32

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FH31 Hospitality and Tourism Management I

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Family, Career and Community Leaders of America (FCCLA); Future Business Leaders of America (FBLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Recognize career opportunities for management in the hospitality and tourism industry. Apply knowledge of the industry to develop a marketing plan for a company. Practice financial management, sales, and leadership for this dynamic industry. Gain the knowledge, skills, and industry credential for careers in hospitality and tourism management.

## **Interior Design I - Fundamentals**

**Course Number:** FI21

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Build the knowledge and technical skills necessary to provide a foundational knowledge of the design industry. Explore design thinking and utilize the interior design process. Apply interior design principles and illustrate design solutions through visual communication. Gain the knowledge and skills for careers in interior design.

## **Interior Design II - Studio**

**Course Number:** FI22

**Recommended Maximum Enrollment:** 25 Hours of

**Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FI21 Interior Design I - Fundamentals

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Devise an understanding of the multiple roles of an interior designer. Utilize artistic and design factors in planning, selection, and arrangement of interior spaces to meet the needs of families in the interior environment. Participate in creating a portfolio that includes a diverse understanding of multiple areas of design. Gain the knowledge and skills for careers in interior design.

## **Interior Design II - Technology**

**Course Number:** FI23

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FI21 Interior Design I - Fundamentals

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Integrate interior design skills and building information modeling (BIM) using the AutoDesk Revit architecture program. Become familiar with digital drafting tools that enable designers to create fully coordinated plans, sections, elevations, 3-D perspectives, and renderings. Utilize drafting software to create a diverse portfolio of interior design skills. Gain the knowledge, skills, and industry certification for careers in interior design.

## **Principles of Family and Human Services**

**Course Number:** FC11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop skills needed for personal and professional success. Integrate life literacy abilities through understanding food management, financial skills, and housing options to achieve optimal well-being. Understand individual, family, and community systems. Gain the knowledge and skills for careers in human services.

## **Project Management I**

**Course Number:** GS11

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Project Management II**

**Course Number:** GS12

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Teaching as a Profession I Honors**

**Course Number:** FE21

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** Students must be in 10<sup>th</sup>-12<sup>th</sup> grade and have a GPA of at least 2.5.

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Analyze the present-day education system with emphasis on historical background and development, aims of education, duties of the teacher, purpose and development of curriculum, facilities, support, and control of schools. Create a foundation for understanding learners, the teaching environment, and the impact on student achievement. Develop a vision for teaching, learning, and leading in the 21<sup>st</sup> century school. Gain the knowledge and skills for careers in teaching and training.

## **Teaching as a Profession II Honors**

**Course Number:** FE22

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FE21 Teaching as a Profession I Honors

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a perspective into the teaching-learning process by exploring the role of the teacher and studying the nature of the learner in the classroom environment. Analyze educational instructional activities and their value to the classroom while discovering the lesson planning process. Expand on the foundation for understanding learners, the teaching environment, and the impact on student achievement. Gain the knowledge and skills for careers in teaching and training.

## **Teaching as a Profession Field Experience Honors**

**Course Number:** FE23

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** FE22 Teaching as a Profession II Honors

**Aligned Career Technical Student Organization(s):** Family, Career and Community Leaders of America (FCCLA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Integrate course knowledge into practical application while completing a hands-on field experience. Facilitate learning opportunities for students that align with the NC Standard Course of Study while assisting cooperating teachers. Develop pedagogical skills and characteristics necessary for effective teaching. Gain the knowledge and skills for careers in teaching and training.

\* This course can be taken at the same time as FE22 Teaching as a Profession II Honors.

## **CTE Advanced Studies**

**Course Number:** WS01 (AAVC), WS03 (ARCH), WS05 (EDUC), WS09 (HOSP), WS10 (HUMA)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** Two CTE courses: one must be a concentrator course.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through analysis and research of selected career pathway. Experience real-world application of course/pathway content through a work-based learning lens acquired by utilizing employability skills in an authentic workforce activity. Evaluate and plan for a postsecondary career while educating others. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Apprenticeship**

**Course Number:** WA01 (AAVC), WA03 (ARCH), WA05 (EDUC), WA09 (HOSP), WA10 (HUMA)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Perform the job duties and related education required as an employed apprentice in a career field registered by ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce environment. Evaluate and plan for a postsecondary career in the career cluster/pathway culminating in a State Certificate and a National Journeyworker Certificate issued by the USDOL. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Career and College Promise**

**Course Number:** Various

**Recommended Maximum Enrollment:** Varies

**Hours of Instruction:** Does not apply

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Career and College Promise provides a way for any North Carolina 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 North Carolina 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.

## **CTE Cooperative Education**

**Course Number:** WO01 (AAVC), WO03 (ARCH), WO05 (EDUC), WO09 (HOSP), WO10 (HUMA)

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** To get academic credit, the aligned coursework and related paid employment must be completed in the same academic year, which may be concurrent or consecutive semesters.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Experience paid employment aligned with classroom instruction, creating a structured work-based learning experience. Devise a jointly agreed training plan involving the student, teacher, employer, and parent, which outlines specific learning outcomes aligned with the student's career objective. Synthesize classroom content, career goals, roles, and responsibilities through a written agreement between the school and employer. Experience real-world application of technical skills, durable employability skills, and related education in an authentic workforce environment. Gain the knowledge and skills for careers in the pathway of choice.

### **CTE Entrepreneurial Experience**

**Course Number:** WE01 (AAVC), WE03 (ARCH), WE05 (EDUC), WE09 (HOSP), WE10 (HUMA)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** Two CTE course credits: one must be a concentrator course.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for the management, responsibilities, and risks of operating a business in a career pathway. Experience real-world application of workplace and employability skills in business management and operations. Learn skills and approaches to successfully evaluate and create new business opportunities. Gain the knowledge and skills for careers in the pathway of choice.

### **CTE Internship**

**Course Number:** WI01 (AAVC), WI03 (ARCH), WI05 (EDUC), WI09 (HOSP), WI10 (HUMA)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through observation and participation in the daily operations of a career in a general career field. Experience real-world application of job tasks acquired by utilizing durable employability skills in an authentic workforce activity. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Pre-apprenticeship**

**Course Number:** WP01 (AAVC), WP03 (ARCH), WP05 (EDUC), WP09 (HOSP), WP10 (HUMA)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for opportunities for postsecondary education and employment in an apprenticeship in a career field registered with ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce activity. Evaluate and plan for a postsecondary career in the career cluster/pathway. Gain the knowledge and skills for careers in the pathway of choice.

## HEALTH SCIENCE EDUCATION PROGRAM DESCRIPTION

Health Science Education provides a comprehensive program to meet present and projected needs in the healthcare industry. Curriculum concepts incorporate technological advances to motivate students and prepare them to pursue a career as a future health professional. Emphasis is placed on the various domains of healthcare and related skills such as employability, prevention (wellness), diagnostics, therapeutics, and rehabilitation. Students are encouraged to pursue work-based learning opportunities that include job shadowing, internships, and apprenticeships to support their areas of interest in healthcare.

Career pathways that students may pursue include:

- Biomedical Technology
- Emergency Medical Technology
- Healthcare Professional
- PLTW Biotechnology Research and Development
- SREB AC Career Pathway – Health Informatics

For specific information about HS pathways, courses, credentials, and standards, please refer to the NC CTE Course Management System website: <https://center.ncsu.edu/nccte-cms/>

Opportunities for expanded leadership and technical skills are available through membership in the intracurricular student organization HOSA - Future Health Professionals. HOSA instills pride, commitment, and professionalism in its members by empowering students to become leaders in the global health community. Members are afforded the opportunity to participate in local, regional, state, national, and international levels.

SkillsUSA is a partnership of education and industry designed to strengthen our nation's skilled workforce. Our mission is to empower our members to become world-class workers and leaders. SkillsUSA improves the quality of our nation's future skilled workforce through the development of personal, workplace, and technical skills grounded in academics. SkillsUSA empowers students to become skilled professionals and career-ready leaders, providing every member the opportunity for career success. SkillsUSA changes lives by providing opportunities for leadership, developing their future careers, having dedicated and passionate trade instructors, and connecting with industry leaders in their communities and nationwide. SkillsUSA student members have the opportunity to develop and participate in a variety of activities and competitive events that showcase their personal, workplace, and technical skills at the local, regional, state, and national levels.



## Health Science Education Course Descriptions

### **Biomedical Technology**

**Course Number:** HB11

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HU40 Health Science I or HP71 PLTW Human Body Systems

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Investigate trends in healthcare and research to include ethics and medicine. Explore trends in forensic medicine, infectious disease(s), and organ transplants. Examine cell biology related to cancer and biomedical research. Gain the knowledge and skills for careers in the Biomedical Technology pathway.

### **Drone Technology I**

**Course Number:** ID11

Please refer to the Trade and Industrial Education Program Area for the full course description.

### **Drone Technology II**

**Course Number:** ID12

Please refer to the Trade and Industrial Education Program Area for the full course description.

### **Drone Technology Fundamentals**

**Course Number:** ID10

Please refer to the Trade and Industrial Education Program Area for the full course description

### **Emergency Medical Technology I**

**Course Number:** IP21

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** English II

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Discover how to provide medical care for patients of all ages in the pre-hospital environment. Learn emergency medical systems and the roles and responsibilities of the emergency medical responder in the pre-hospital setting. Establish an introductory understanding of anatomy and physiology related to medical and traumatic emergencies. Gain the knowledge, skills, and industry credentials for careers in the Emergency Medical Technology pathway.

\*Per the NC Office of Emergency Medical Services (NCOEMS) and NCDPI education plan, this course is limited to 20 students per teacher.

\*Per the NCOEMS candidate handbook and education program requirements, students must be 17 years of age on or before the official end date of the course in Continuum. (Continuum is the name of the course database from NCOEMS.)

## **Emergency Medical Technology II**

**Course Number:** IP22

**Recommended Maximum Enrollment:** 16\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IP21 Emergency Medical Technology I and English III

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Discover how to provide medical care for patients of all ages in the pre-hospital environment. Learn emergency medical systems, relevant skills, roles, and responsibilities of the emergency medical technician in the pre-hospital setting. Understand anatomy and physiology related to medical and traumatic emergencies. Gain the knowledge, skills, and industry credentials for careers in the Emergency Medical Technology pathway.

\*Per the North Carolina Office of Emergency Medical Services (NCOEMS) and NCDPI education plan, this course is limited to 16 students per teacher.

\*Per the NCOEMS candidate handbook and education program requirements, students must be 17 years of age on or before the official end date of the course in Continuum. (Continuum is the name of the course database from NCOEMS.)

## **Foundations of Health Science**

**Course Number:** HU10

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore medical history from the primitive era to the 21<sup>st</sup> century. Understand mathematics used in healthcare, medical terminology, and abbreviations. Initiate learning about healthcare professions through career exploration. Gain knowledge and skills for careers in the Health Science cluster.

## **Fundamentals of Gerontology**

**Course Number:** HN44

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HU42 Health Science II

**Aligned Career Technical Student Organization(s):** HOSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Focus on the unique physical and psychological changes related to aging. Explore options for pain management and palliative care methods utilized in caring for the elderly. Enhance nurse aide skills specific to elder care. Gain the knowledge, skills, and credentials for careers in the Healthcare Professional pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

\* Internship and apprenticeship participation outside the school learning environment would require the student to have completed Nurse Aide I credential before the internship and apprenticeship experience.

## **Health Science I**

**Course Number:** HU40

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore anatomy, physiology, diseases, and disorders within human body systems.

Understand structural organization of the human body as it applies to recognizing and responding to first aid emergencies. Engage in projects, teamwork, collaboration, and demonstration to reinforce curriculum content. Gain knowledge, skills, and industry credentials for careers in the Healthcare Professional pathway.

## **Health Science II**

**Course Number:** HU42

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HU40 Health Science I OR HP71 PLTW Human Body Systems

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Understand the healthcare industry, including employability skills, cultural awareness, safety, and infection control procedures used by healthcare professionals. Develop an understanding of the cardiovascular and respiratory systems to apply knowledge and skills toward earning industry recognized credentials. Demonstrate understanding of curriculum content through projects, collaborations, and teamwork. Gain the knowledge, skills, and credentials for careers in the Healthcare Professional pathway.

## **IB Sports Exercise and Health Science HL**

**Course Number:** 3I10

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 240

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students deepen their knowledge and understanding necessary to apply scientific principles and analyze human performance.

## **IB Sports Exercise and Health Science SL**

**Course Number:** 3I08

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 150

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students explore the concepts, theories, models, and techniques that underpin each subject area and through these develop their understanding of the scientific method.

## **Medical Assisting and Non-Practicum**

**Course Number:** HU45

**Recommended Maximum Enrollment:** 16

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HU42 Health Science II or HP71 PLTW Human Body Systems. Students must be at least 16 years old, have completed HU42 Health Science II, and have the BLS Provider credential.

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Enhance understanding of a healthcare career that blends technical proficiency with durable employability skills. Utilize technical competencies like appointment scheduling, aiding in medical procedures, and supervised medication administration in a simulated clinical setting. Cultivate soft skills such as teamwork, organization, time management, and decision-making. Acquire knowledge, skills, and industry credentials essential for pursuing careers within the Healthcare Professional pathway.

\*Students must graduate from high school within 12 months of course completion to receive a valid credential.

## **Medical Assisting and Practicum**

**Course Number:** HU46

**Recommended Maximum Enrollment:** 16

**Hours of Instruction:** 270 (block) 300 (regular)

**Prerequisite:** HU42 Health Science II or HP71 PLTW Human Body Systems. Students must be at least 16 years old, have completed HU42 Health Science II, and have the BLS Provider credential.

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Enhance understanding of a healthcare career that blends technical proficiency with durable employability skills. Utilize technical competencies like appointment scheduling, aiding in medical procedures, and supervised medication administration in a clinical setting. Cultivate soft skills such as teamwork, organization, time management, and decision-making. Acquire knowledge, skills, and industry credentials essential for pursuing careers within the Healthcare Professional pathway.

\*Students must graduate from high school within 12 months of course completion to receive a valid credential.

## **Nursing Fundamentals and Non-Practicum**

**Course Number:** HN42

**Recommended Maximum Enrollment:** 10\*

**Hours of Instruction:** 270 (block) 300 (regular)

**Prerequisite:** HU42 Health Science II

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the role of a nurse aide as defined by North Carolina Department of Health and Human Services, Health Care Personnel Education and Credentialing Section. Perform nurse aide skills to care for patients and residents in a healthcare setting. Build communication skills and learn to function as a healthcare team member. Gain the knowledge and skills for careers in the Healthcare Professional pathway.

\*North Carolina Board of Nursing BON Administrative Rule 21 NCAC 36.0318 (i) requires the ratio of teacher to nurse aide students to be 1:10 or less while in the clinical area. North Carolina Department of Health and Human Services, Health Care Personnel Education and Credentialing Section applies the 1:10 ratio in the classroom laboratory training and clinical. Students unable to complete/attend clinical hours in HN43 Nursing Fundamentals and Practicum are transferred to HN42 Nursing Fundamentals and Non-Practicum.

## **Nursing Fundamentals and Practicum**

**Course Number:** HN43

**Recommended Maximum Enrollment:** 10\*

**Hours of Instruction:** 270 (block) 300 (regular)

**Prerequisite:** HU42 Health Science II

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the role of a Nurse Aide as defined by North Carolina Department of Health and Human Services, and Health Care Personnel Education and Credentialing Section. Perform nurse aide skills to care for patients and residents in a healthcare clinical setting. Build communication skills and learn to function as a healthcare team member. Gain the knowledge, skills, and industry credentials for careers in the Healthcare Professional pathway.

\*North Carolina Board of Nursing BON Administrative Rule 21 NCAC 36.0318 (i) requires the ratio of teacher to nurse aide students to be 1:10 or less while in the clinical area. DHSR applies the 1:10 ratio in the classroom laboratory training and clinical. NCBON recommends students are 16 on the first day of the Nursing Fundamentals and Practicum class.

\*Internship and apprenticeship participation outside the school learning environment would require the student to have completed credentialing before the internship and apprenticeship experience.

## **Pharmacy Technician**

**Course Number:** HH32

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HU42 Health Science II OR HB11 Biomedical Technology

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the science of how medications act on biological systems and how the body responds to specific medications as it relates to the role of the pharmacy technician in preparing prescriptions. Understand pharmacy law and regulation, product inventory, compounding procedures, and medication safety. Learn the practices for billing and reimbursement in pharmacy operations. Gain the knowledge, skills, and credentials for careers in the Healthcare Professional pathway.

## **PLTW Biomedical Innovations**

**Course Number:** HP73

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HP72 PLTW Medical Interventions

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** 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 healthcare industry. English language arts and science are reinforced in this course.

## **PLTW Human Body Systems**

**Course Number:** HP71

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HP70 PLTW Principles of Biomedical Sciences

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This course is designed for students to examine interactions of human body systems and apply knowledge to solve real-world medical cases.

## **PLTW Medical Interventions**

**Course Number:** HP72

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HP71 PLTW Human Body Systems

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This course allows students to investigate the interventions involved in the prevention, diagnosis, and treatment of disease. English language arts and science are reinforced in this course.

## **PLTW Principles of Biomedical Sciences**

**Course Number:** HP70

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** From design and data analysis to outbreaks, clinical empathy, health promotion, and more, students explore the vast range of careers in biomedical sciences. They develop not just technical skills, but also in-demand, transportable skills that they need to thrive in life and career.

## **Project Management I**

**Course Number:** GS11

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Project Management II**

**Course Number:** GS12

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Public Health Fundamentals**

**Course Number:** HN45

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HU42 Health Science II

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Discover the unique challenges and strategies in delivering healthcare outside traditional facilities and without the traditional supervision structure. Focus on the role of the home care aide, legal and ethical issues, cultural considerations, and safety in the home environment. Explore palliative and end-of-life care in the home environment. Gain the knowledge, skills, and industry credentials for careers in the Healthcare Professional pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

\* Internship and apprenticeship participation outside the school learning environment would require the student to have completed Nurse Aide I credential before the internship and apprenticeship experience.

## **SREB AC Health Informatics I - Data and Use**

**Course Number:** HR11

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals, SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This foundational course focuses on the use of data and databases within the health field.

Students explore the following questions using project-based and problem-based scenarios. What are data? What are the sources of data in the medical and health informatics fields? How can we use data? How do we make sense of data? How may we apply data to our own lives? Students interact with professionals in the health informatics field through interviews or on-site and/or virtual field trips.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **SREB AC Health Informatics II - Transforming Data**

**Course Number:** HR12

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HR11 SREB AC Health Informatics I - Data and Use

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals, SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** In this course, students study ways to use data to address both patient and industry needs in the health-care field. Students use software such as Microsoft Access, Excel and Balsamiq to collect and analyze data, develop a health-care registry, create a mobile app mockup, and develop forms and systems to solve health-care problems. The following questions are addressed through project or problem-based scenarios: How can technology and analysis create better information to inform better decisions? How can we use technology tools to create information from data? How can we use technology to improve public and individual health? How can we use technology to protect patient privacy?

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **SREB AC Health Informatics II - Transforming Information Honors**

**Course Number:** HR13

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HR12 SREB AC Health Informatics II -Transforming Data

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals, SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This advanced course allows students to make improvements in the health-care field by designing solutions using the information, knowledge, and technology tools available to health informatics professionals. Students are engaged in the following activities: building a system of sharing information among health-care facilities; using social media tools to reduce diseases in foreign countries; exploring voice recognition software; using a motion-based video gaming console for rehabilitation; and exploring clinical decision rules for improving patient care.

\*For safety reasons, the recommended enrollment should not exceed 20 students.



## **SREB AC Health Informatics IV - Problems and Solutions Honors**

**Course Number:** HR14

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** HR13 SREB AC Health Informatics II - Transforming Information Honors

**Aligned Career Technical Student Organization(s):** HOSA - Future Health Professionals, SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** In this advanced course, students study and design solutions to problems facing health-care systems. Students explore the following questions through project or problem-based scenarios: How can the health-care system work more efficiently and economically? How do we address health-care issues in rural locations? How can various community organizations work together to improve the health of the community? Students interact with professionals in the health informatics field through interviews or on-site and/or virtual field trips.

\*For safety reasons, the recommended enrollment should not exceed 20 students.

## **CTE Advanced Studies**

**Course Number:** WS08 (HLTH)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** Two CTE courses: one must be a concentrator course.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through analysis and research of selected career pathway. Experience real-world application of course/pathway content through a work-based learning lens acquired by utilizing employability skills in an authentic workforce activity. Evaluate and plan for a postsecondary career while educating others. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Apprenticeship**

**Course Number:** WA08 (HLTH)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Perform the job duties and related education required as an employed apprentice in a career field registered by ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce environment. Evaluate and plan for a postsecondary career in the career cluster/pathway culminating in a State Certificate and a National Journeyworker Certificate issued by the USDOL. Gain the knowledge and skills for careers in the pathway of choice.

### **CTE Career and College Promise**

**Course Number:** Various

**Recommended Maximum Enrollment:** Varies

**Hours of Instruction:** Does not apply

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Career and College Promise provides a way for any North Carolina 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 North Carolina 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.

### **CTE Cooperative Education**

**Course Number:** WO08 (HLTH)

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** To get academic credit, the aligned coursework and related paid employment must be completed in the same academic year, which may be concurrent or consecutive semesters.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Experience paid employment aligned with classroom instruction, creating a structured work-based learning experience. Devise a jointly agreed training plan involving the student, teacher, employer, and parent, which outlines specific learning outcomes aligned with the student's career objective. Synthesize classroom content, career goals, roles, and responsibilities through a written agreement between the school and employer. Experience real-world application of technical skills, durable employability skills, and related education in an authentic workforce environment. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Entrepreneurial Experience**

**Course Number:** WE08 (HLTH)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** Two CTE course credits: one must be a concentrator course.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for the management, responsibilities, and risks of operating a business in a career pathway. Experience real-world application of workplace and employability skills in business management and operations. Learn skills and approaches to successfully evaluate and create new business opportunities. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Internship**

**Course Number:** WI08 (HLTH)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through observation and participation in the daily operations of a career in a general career field. Experience real-world application of job tasks acquired by utilizing durable employability skills in an authentic workforce activity. Gain the knowledge and skills for careers in the pathway of choice.

**CTE Pre-apprenticeship**

**Course Number:** WP08 (HLTH)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for opportunities for postsecondary education and employment in an apprenticeship in a career field registered with ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce activity. Evaluate and plan for a postsecondary career in the career cluster/pathway. Gain the knowledge and skills for careers in the pathway of choice.

## TRADE AND INDUSTRIAL EDUCATION PROGRAM DESCRIPTION

Trade and Industrial Education (TI) programs provide students with the skills and conceptual knowledge needed for careers in industry, engineering, and design. Students can focus on industry certifications for careers immediately after graduation or develop skills and knowledge needed for higher level professional degrees in engineering and design fields.

Career pathways that students may pursue include:

- Automotive Service \*
- Carpentry
- Collision Repair
- Drafting Architectural
- Drafting Engineering
- Electrical Trades
- Emergency Management
- Firefighter Technology
- HVACR
- JROTC \*\*
- Law and Justice
- Masonry
- Metals Manufacturing
- Plumbing
- Public Safety
- Solar Photovoltaics
- SREB AC Career Pathway – Automated Materials Joining
- SREB AC Career Pathway – Clean Energy Technology
- SREB AC Career Pathway – Energy and Power
- SREB AC Career Pathway – Global Logistics and Supply Chain Management
- SREB AC Career Pathway – Integrated Production Technologies
- Unmanned Aircraft Systems
- Welding
- Woodworking

\* Automotive Service programs receiving career-technical state or federal monies must be Automotive Service Excellence (ASE) accredited. Requirements for ASE accreditation include:

1. Local review of current automotive program standards.
2. Local program self-evaluation performed by the local program advisory committee.
3. Local program review by the ASE Education Foundation.
4. On-site evaluation by an Education Team Leader (ETL).

\*\* Based on the school schedule, students will take JROTC I through VIII to complete all four Leadership, Education, and Training (LET) Units. To be a CTE Concentrator and count in federal reporting for CTE, a student will successfully complete JROTC I, JROTC II, and JROTC III.

For specific information about TI pathways, courses, credentials, and standards, please refer to the NC CTE Course Management System website: <https://center.ncsu.edu/nccte-cms/>

SkillsUSA is a partnership of education and industry designed to strengthen our nation's skilled workforce. Our mission is to empower our members to become world-class workers and leaders. SkillsUSA improves the quality of our nation's future skilled workforce through the development of personal, workplace, and technical skills grounded in academics. SkillsUSA empowers students to become skilled professionals and career-ready leaders, providing every member the opportunity for career success. SkillsUSA changes lives by providing opportunities for leadership, developing their future careers, having dedicated and passionate trade instructors, and connecting with industry leaders in their communities and nationwide. SkillsUSA student members have the opportunity to develop and participate in a variety of activities and competitive events that showcase their personal, workplace, and technical skills at the local, regional, state, and national levels.

## Trade and Industrial Education

### Course Descriptions

#### **Automotive Body Repair I**

**Course Number:** IT35

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Gain an understanding of tools and equipment used in automotive body repair. Develop an understanding of hazardous materials and personal safety. Focus on various hands-on activities used in vehicle body repair. Gain the knowledge, skills, and industry credentials for careers in the Automotive Body Repair pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

#### **Automotive Body Repair II**

**Course Number:** IT36

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IT35 Automotive Body Repair I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the talents needed for non-structural vehicle repairs. Focus on hands-on activities involving vehicle trim, hardware, and bolted-on parts replacement. Gain the knowledge, skills, and industry credentials for careers in the Automotive Body Repair pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

#### **Automotive Service Fundamentals**

**Course Number:** IT11

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Build foundational automotive skills through hands-on experience with shop safety, equipment, and hand tools. Safely lift vehicles and perform basic inspection procedures. Complete essential tasks like engine oil and filter service, jumpstarting a vehicle, and replacing a 12-volt battery. Gain the knowledge, skills, and industry credentials for careers in the Automotive Service pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Automotive Service I**

**Course Number:** IT16

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IT11 Automotive Service Fundamentals

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Service drivetrain and brake systems while building real-world automotive skills. Explore electrical systems and perform key tests using a digital multimeter. Inspect, repair, and balance tires to support safe and reliable vehicle performance. Gain the knowledge, skills, and industry credentials for careers in the Automotive Service pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Automotive Service II**

**Course Number:** IT17

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IT16 Automotive Service I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Perform basic suspension and steering inspections and service. Research vehicle information, service bulletins, and recalls on vehicles being serviced. Gather information on vehicle codes and module data used to diagnose vehicle systems. Gain the knowledge, skills, and industry credentials for careers in the Automotive Service pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Automotive Service III**

**Course Number:** IT18

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IT17 Automotive Service II

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore more advanced and in-depth vehicle repairs and services. Perform basic system diagnosis. Expand knowledge in heating and air conditioning system operations. Gain the knowledge, skills, and industry credentials for careers in the Automotive Service pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Carpentry I**

**Course Number:** IC21

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC00 Construction Core



**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop basic skills to interpret and lay out basic construction plans and documents used by carpenters. Engage in procedures for laying out and constructing floor and wall systems. Practice essential stairway design and construction techniques. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\*For safety reasons, the recommended enrollment should not exceed 20 students.

## **Carpentry II**

**Course Number:** IC22

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC21 Carpentry I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Engage in procedures for laying out, constructing, and installing roofing components for residential and commercial buildings. Practice skills related to moisture and insulation control concepts for building envelop systems installation. Participate in exterior finish materials installation procedures. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Carpentry III**

**Course Number:** IC23

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC22 Carpentry II

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a working knowledge of skills required to read and interpret commercial drawings and specifications. Engage in procedures for drywall installation and finishing. Participate in the installation of door and door hardware installation procedures. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Collision Repair I**

**Course Number:** IT31

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IT30 Collision Repair Fundamentals

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the talents needed for non-structural vehicle repairs using the I-CAR curriculum.

Develop basic skills in plastic repair. Focus on hands-on activities involving vehicle trim, hardware, and bolted-on parts replacement. Gain the knowledge, skills, and industry credentials for careers in the Collision Repair pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Collision Repair II - Non-Structural**

**Course Number:** IT32

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IT31 Collision Repair I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop the basic skills needed to produce non-structural vehicle repairs for damaged vehicles.

Develop the basic skills needed using body filler and sanding in the vehicle repair process. Engage in activities involving cosmetic straightening of steel panels. Gain the knowledge, skills, and industry credentials for careers in the Collision Repair pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Collision Repair II - Refinishing**

**Course Number:** IT33

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IT31 Collision Repair I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare vehicle surfaces for topcoat applications. Develop the basic skills needed for minor paint repairs. Practice environmentally safe approaches when refinishing vehicles. Gain the knowledge, skills, and industry credentials for careers in the Collision Repair pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Construction Core**

**Course Number:** IC00

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Perform basic safety procedures required for construction and industrial project sites. Engage in proper techniques required to safely operate hand and power tools used in the construction industry. Practice material handling tasks using appropriate personal protective equipment (PPE) procedures and techniques. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Drafting I**

**Course Number:** IC61

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Investigate essential concepts, trends, and career options in the architectural and engineering industry. Practice fundamental sketching skills and techniques required in architectural and engineering graphic communications. Perform CAD (computer aided drafting/design) procedures required to produce basic technical drawings. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

## **Drafting II - Architectural**

**Course Number:** IC62

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC61 Drafting I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Investigate commonly accepted styles, trends, trade terminology, and career options found in the architectural industry. Practice procedures to plan and draw a single-floor residential floor plan using Computer Aided Drafting/Design (CAD). Engage in the design of foundation, roof, and floor systems to create a complete set of residential construction documents. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

## **Drafting II - Engineering**

**Course Number:** IV22

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC61 Drafting I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Investigate design concepts, principles, trade terminology, and career options found in the engineering industry. Practice techniques to create 3D-solid modeled parts and working drawings using CAD (computer aided drafting/design). Practice conventional dimensioning and tolerancing techniques used in engineering design and production. Gain the knowledge, skills, and industry credentials for careers in science, technology, engineering, and mathematics.

### **Drafting III - Architectural**

**Course Number:** IC63

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC62 Drafting II - Architectural

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Practice procedures to create a multi-floor residential structure using CAD (computer aided drafting/design). Engage in the design of electrical systems, stair/railing, and advanced kitchen and bath details used in residential architectural planning. Engage in the development of a site plan for a residential structure. Gain the knowledge and skills for careers in architecture and construction.

### **Drafting III - Engineering**

**Course Number:** IV23

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IV22 Drafting II - Engineering

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Investigate education and professional requirements for engineering and manufacturing employment. Practice advanced techniques to create parametric 3D-solid modeled parts, assemblies, and working drawings using CAD (computer aided drafting/design). Engage in procedures of geometric dimensioning and tolerancing techniques used in engineering design and production. Gain the knowledge and skills for careers in science, technology, engineering, and mathematics.

### **Drone Technology Fundamentals**

**Course Number:** ID10

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the basic skills and knowledge needed to be a recreational drone pilot. Develop a sectional chart using legends for planned drone mission flights. Develop a basic program to conduct an autonomous flight using small drones in the classroom. Gain the knowledge, skills, and industry credentials for careers in drone technology.

## **Drone Technology I**

**Course Number:** ID11

**Recommended Maximum Enrollment:** 15

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** ID10 Drone Technology Fundamentals

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop drone piloting knowledge and skills needed to obtain an FAA Remote Pilot certification. Participate in drone mission planning, basic flight operations, and drone aircraft maintenance. Execute communication needed as a flight crew team member. Demonstrate flight skills by obtaining industry certification. Gain the knowledge, skills, and industry credentials for careers in drone technology.

## **Drone Technology II**

**Course Number:** ID12

**Recommended Maximum Enrollment:** 15

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** ID11 Drone Technology I

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Execute drone missions that include autonomous flight and mapping. Utilize mapping software to produce 2D and 3D images. Develop a business plan needed to start a drone piloting company. Gain the knowledge, skills, and enhanced industry credentials for careers in drone technology.

## **Electrical Trades I**

**Course Number:** IC41

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC00 Construction Core

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a working knowledge of basic electrical theory, Ohm's law, and methods for calculating electrical energy. Utilize the National Electric Code (NEC) to find installation requirements. Engage in basic skills required for installation of electrical device boxes, conduit, and raceways systems. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Electrical Trades II**

**Course Number:** IC42

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC41 Electrical Trades I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a working knowledge of skills required to read and interpret electrical construction drawings and specifications. Practice laying out branch circuits, sizing outlet boxes, and wiring device installation for residential electrical systems. Develop a working knowledge of AC and DC motor theory and application. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Electrical Trades III**

**Course Number:** IC43

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC42 Electrical Trades II

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Practice the techniques required to make conduit bends and to install pull and junction boxes. Engage in a cable pulling operation including conductor installation and cable end preparation. Develop a working knowledge of the operation of circuit breakers, fuses, contactors, and relays used in electrical systems. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Emergency Management I**

**Course Number:** IP51

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IP11 Public Safety I OR IP22 Emergency Medical Technology II OR IP32 Firefighter Technology II OR IP42 Law and Justice II

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore fundamentals of Emergency Management operations. Develop knowledge and skills to lead all emergency resources in a public safety emergency. Perform basic communication skills required to coordinate with all other public safety agencies during an emergency. Gain the knowledge, skills, and industry credentials for careers in emergency management.

## **Emergency Management II**

**Course Number:** IP52

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IP51 Emergency Management I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop knowledge and skills used in an Emergency Management Operation Center. Develop rapid needs assessments, including weather-related data used in hazard mitigation of Emergency Management operations. Perform advanced communication skills required to lead other professionals in public safety during an emergency. Gain the knowledge, skills, and industry credentials for careers in emergency management.

## **Firefighter Technology I**

**Course Number:** IP31

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Gather basic knowledge and skills required in firefighting. Develop skills in communications, use of personal protective equipment, forcible entry, fire extinguishers, and building construction. Perform basic firefighter skills associated with the knowledge obtained in this course. Gain the knowledge, skills, and industry credentials for careers in firefighter technology.

## **Firefighter Technology II**

**Course Number:** IP32

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IP31 Firefighter Technology I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Enhance knowledge and skills required in firefighting. Develop skills in ladders, ventilation, ropes and knots, water supplies, hoses, appliances for search and rescue, and emergency medical care operations. Perform intermediate firefighter skills associated with the knowledge obtained in this course. Gain the knowledge, skills, and industry credentials for careers in firefighter technology.

## **Firefighter Technology III**

**Course Number:** IP33

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IP32 Firefighter Technology II

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Maximize knowledge and skills required in firefighting. Develop tasks related to skills used in rescue, fire protection, fire and life safety, mayday, HAZMAT, and traffic incident management. Perform advanced firefighter skills associated with the knowledge obtained in this course. Gain the knowledge, skills, and industry credentials for careers in firefighter technology.

## **HVACR I**

**Course Number:** IC31

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC00 Construction Core

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Practice basic skills required to read and interpret wiring diagrams as it relates to common electrical components used in the HVACR field. Develop a working knowledge of fundamental heating and cooling types and components found in typical HVACR systems. Utilize the National Electric Code (NEC) to find installation requirements. Engage in basic copper, carbon steel, and plastic piping practices used in preparation and installation of HVACR systems. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **HVACR II**

**Course Number:** IC32

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC31 HVACR I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a working knowledge of principles and operating cycles of heat pumps found in HVACR systems. Engage in troubleshooting procedures for heat pumps and cooling components found in HVACR systems. Practice refrigerant handling and equipment servicing procedures for HVACR systems. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.



## **HVACR III**

**Course Number:** IC33

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC32 HVACR II

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a working knowledge of the principles and operation of compressors found in HVACR systems. Engage in the operation, application, installation, and adjustment of expansion devices used in HVACR equipment. Practice troubleshooting gas-fired components, control circuits, and electric motors found in HVACR equipment. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **JROTC I**

**Course Number:** 9501

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the fundamentals of self-discovery and leadership skills essential for various leadership roles in both the military and civilian sectors. Act with integrity and personal accountability as you lead others to succeed in a diverse and global workforce. Engage in civic and social concerns in the community, government, and society. Graduate prepared to succeed in post-secondary options and career pathways. Make decisions that promote positive social, emotional, and physical health. Value the role of the military and other service organizations.

## **JROTC II**

**Course Number:** 9502

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the fundamentals of self-discovery and leadership skills essential for various leadership roles in both the military and civilian sectors. Act with integrity and personal accountability as you lead others to succeed in a diverse and global workforce. Engage in civic and social concerns in the community, government, and society. Graduate prepared to succeed in post-secondary options and career pathways. Make decisions that promote positive social, emotional, and physical health. Value the role of the military and other service organizations.

## **JROTC III**

**Course Number:** 9503

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the fundamentals of self-discovery and leadership skills essential for various leadership roles in both the military and civilian sectors. Act with integrity and personal accountability as you lead others to succeed in a diverse and global workforce. Engage in civic and social concerns in the community, government, and society. Graduate prepared to succeed in post-secondary options and career pathways. Make decisions that promote positive social, emotional, and physical health. Value the role of the military and other service organizations.

## **JROTC IV**

**Course Number: 9504**

**Recommended Maximum Enrollment: 30**

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the fundamentals of self-discovery and leadership skills essential for various leadership roles in both the military and civilian sectors. Act with integrity and personal accountability as you lead others to succeed in a diverse and global workforce. Engage in civic and social concerns in the community, government, and society. Graduate prepared to succeed in post-secondary options and career pathways. Make decisions that promote positive social, emotional, and physical health. Value the role of the military and other service organizations.

## **JROTC V**

**Course Number: 9505**

**Recommended Maximum Enrollment: 30**

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the fundamentals of self-discovery and leadership skills essential for various leadership roles in both the military and civilian sectors. Act with integrity and personal accountability as you lead others to succeed in a diverse and global workforce. Engage in civic and social concerns in the community, government, and society. Graduate prepared to succeed in post-secondary options and career pathways. Make decisions that promote positive social, emotional, and physical health. Value the role of the military and other service organizations.

## **JROTC VI**

**Course Number: 9506**

**Recommended Maximum Enrollment: 30**

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the fundamentals of self-discovery and leadership skills essential for various leadership roles in both the military and civilian sectors. Act with integrity and personal accountability as you lead others to succeed in a diverse and global workforce. Engage in civic and social concerns in the community, government, and society. Graduate prepared to succeed in post-secondary options and career pathways. Make decisions that promote positive social, emotional, and physical health. Value the role of the military and other service organizations.

## **JROTC VII**

**Course Number:** 9507

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the fundamentals of self-discovery and leadership skills essential for various leadership roles in both the military and civilian sectors. Act with integrity and personal accountability as you lead others to succeed in a diverse and global workforce. Engage in civic and social concerns in the community, government, and society. Graduate prepared to succeed in post-secondary options and career pathways. Make decisions that promote positive social, emotional, and physical health. Value the role of the military and other service organizations.

## **JROTC VIII**

**Course Number:** 9508

**Recommended Maximum Enrollment:** 30

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Explore the fundamentals of self-discovery and leadership skills essential for various leadership roles in both the military and civilian sectors. Act with integrity and personal accountability as you lead others to succeed in a diverse and global workforce. Engage in civic and social concerns in the community, government, and society. Graduate prepared to succeed in post-secondary options and career pathways. Make decisions that promote positive social, emotional, and physical health. Value the role of the military and other service organizations.

## **Law and Justice I**

**Course Number:** IP41

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop an understanding of the history of law enforcement, including the criminal justice system. Understand the responsibilities of policing, and the classification of crimes. Practice basic skills such as communication with diverse groups, conflict resolution, operation of equipment, and courtroom testimony. Gain the knowledge, skills, and industry credentials for careers in law and justice.

## **Law and Justice II**

**Course Number:** IP42

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IP41 Law and Justice I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Gaither knowledge and skills required in private security protection. Practice communication skills required of protection officers. Perform tasks including crime prevention, risk and threat management, and physical security. Gain the knowledge, skills, and industry credentials for careers in law and justice.

## **Masonry I**

**Course Number:** IC11

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop basic skills to interpret measurements, drawings, and specifications common in masonry work. Engage in safely operating masonry tools and equipment. Participate in setting up, laying out, and bonding block and brick using an appropriate mortar mixture. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Masonry II**

**Course Number:** IC12

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC11 Masonry I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Participate in masonry construction techniques for residential and small structure foundations. Focus on the use of grout and the application of other reinforced masonry elements. Engage in the installation of metal components and masonry openings. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

### **Masonry III**

**Course Number:** IC13

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC12 Masonry II

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Participate in advanced masonry construction techniques and the interaction with structural components. Develop an understanding of the effects of hot and cold weather climate conditions on masonry construction. Develop a working knowledge of quality control requirements for masonry construction. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

### **Metals Manufacturing Technology I**

**Course Number:** IM41

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop knowledge for the proper use of personal protective equipment. Engage in quality control and inspection tasks. Explore metal classifications, properties, and numbering systems. Gain the knowledge, skills, and industry credentials for careers in the Metals Manufacturing pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

### **Metals Manufacturing Technology II**

**Course Number:** IM42

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IM41 Metals Manufacturing Technology I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Transform steel using a process plan and blueprints. Produce items with small tolerances by performing precise measurements. Develop skills using basic sawing, drilling, and milling. Gain the knowledge, skills, and industry credentials for careers in the Metals Manufacturing pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Metals Manufacturing Technology III**

**Course Number:** IM43

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IM42 Metals Manufacturing Technology II

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop knowledge of milling machine components. Engage in basic milling operations. Explore various process improvements related to metals manufacturing. Gain the knowledge, skills, and industry credentials for careers in the Metals Manufacturing pathway.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Plumbing I**

**Course Number:** IC51

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC00 Construction Core

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Perform basic procedures and techniques designed to reduce safety risks and workplace injuries in the plumbing industry. Develop basic skills to interpret and apply drawing information when laying out and installing plumbing systems. Engage in copper, cast-iron, steel, and plastic pipe and fittings practices used in plumbing applications. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Plumbing II**

**Course Number:** IC52

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC51 Plumbing I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a working knowledge of drain, waste, vent (DWV), and water distribution systems and the connection to municipal and private sewer systems. Engage in methods for adjusting structural members, insulating pipe, and installing insulation for fire-stopping practices. Practice the installation and testing of drain, waste, vent (DWV), and roof, floor, and area drain systems. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Plumbing III**

**Course Number:** IC53

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC52 Plumbing II

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a working knowledge of how to locate, install, and test complete water service systems. Engage in methods for installing basic plumbing fixtures and appliances that use water connections found in residential construction. Practice techniques for the safe handling natural gas, liquefied petroleum gas, and fuel oil used in associate systems installation. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **PLTW Computer Integrated Manufacturing**

**Course Number:** CE17

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CE10 PLTW Introduction to Engineering Design or CE11 PLTW Principles of Engineering

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** In this specialization Project Lead the Way (PLTW) Pathway to Engineering (PTE) course, students discover and explore manufacturing processes, product design, robotics, and automation, and then they apply what they have learned to design solutions for real-world manufacturing problems. Art, English language arts, mathematics and science are reinforced.

## **PLTW Environmental Sustainability**

**Course Number:** CE18

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** CE10 PLTW Introduction to Engineering Design or CE11 PLTW Principles of Engineering

**Aligned Career Technical Student Organization(s):** Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** In this specialization Project Lead the Way (PLTW) Pathway to Engineering (PTE) course, students investigate and design solutions in response to real-world challenges related to clean and abundant drinking water, food supply, and renewable energy. Art, English language arts, mathematics, and science are reinforced.

## **Project Management I**

**Course Number:** GS11

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Project Management II**

**Course Number:** GS12

Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

## **Public Safety I**

**Course Number:** IP11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a basic understanding of careers and skills in the public safety pathway. Perform basic skills with these different careers, including firefighting, EMT, and law enforcement. Create a student personal plan for a career in public safety. Gain the knowledge, skills, and industry credentials for careers in public safety.

## **Public Safety II**

**Course Number:** IP12

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IP11 Public Safety I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a deeper understanding of careers and skills in the public safety pathway. Perform skills associated with being part of a community emergency response team. Prepare for a career in 9-1-1 telecommunication through demonstrated activities. Gain the knowledge, skills, and industry credentials for careers in public safety.

## **Solar Photovoltaics I**

**Course Number:** IC71

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC00 Construction Core

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a working knowledge of basic concepts of Photovoltaics (PV) systems and their components, along with general sizing and electrical/mechanical design requirements. Practice conducting a site survey, identifying a suitable location, and interpreting radiation and temperature data for installing a PV array. Engage in system design and configurations for PV installation. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.



## **Solar Photovoltaics II**

**Course Number:** IC72

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IC71 Solar Photovoltaics I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Engage in using site assessment and system design to safely install an PV array and other system components. Practice basic system performance monitoring and record-keeping requirements for a PV system. Develop a working knowledge of troubleshooting procedures for maintaining a PV system. Gain the knowledge, skills, and industry credentials for careers in architecture and construction.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **SREB AC Advanced Technology for Design and Production**

**Course Number:** TR11

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

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

## **SREB AC Introduction to Automated Materials Joining**

**Course Number:** IE71

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This project-based learning course introduces students to the fundamentals of automated materials joining. Students learn how to design, build, and virtually test their designs using Solid Edge software. Using the engineering design process, students learn how to manage projects; research topics; plan for the building and testing of a prototype; analyze their results; make recommendations for improvement and communicate solutions to an authentic audience. Student teams create jigs, fixtures, and an automated clamping system to fasten material. They program a robotic arm to control the spreading of adhesive, and design, build and test an automation system for joining the materials. Automated materials joining technology/industry standards and academic literacy, mathematics and science standards are applied to develop prototypes. Students learn how to collaborate within diverse teams, manage projects, think critically, document research, write reports and communicate results to authentic audiences. Further, students apply science, literacy, mathematics, and technical skills to effectively solve challenging real-world problems with business and industry partners.

## **SREB AC Applications in Automated Materials Joining**

**Course Number:** IE72

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IE71 SREB AC Introduction to Automated Materials Joining

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Building on the concepts learned in SREB AC Introduction to Automated Materials Joining, students engage in more complex materials science applications beginning with a reverse engineering project. Students disassemble and analyze a product to determine how they might improve its performance. Heat is applied to materials to change their molecular structure and LabVIEW is used to measure the changes. Different joints are explored and tested using filler metals. Students collaborate to create an automated quality control vision system to govern placement in an automated assembly system. They learn how to write quality engineering reports that communicate the process used and detail their findings. Students sharpen their skills by presenting to authentic audiences. Students learn how to collaborate within diverse teams, manage projects, think critically, document research, write reports and communicate results to authentic audiences. Further, students apply science, literacy, mathematics, and technical skills to effectively solve challenging real-world problems with business and industry partners.

## **SREB AC Advanced Concepts in Materials Joining**

**Course Number:** IE73

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IE72 SREB AC Applications in Automated Materials Joining

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students apply their knowledge and skills to produce new prototypes. They begin with programming a robot to create acceptable welds. They work with industry partners in a quality control lab where they examine the molecular changes in a tank that failed and test their recommendations to determine if they solved the problem. Students experiment with welding dissimilar metals utilized in battery applications. Working with a business partner, students automate a process to decrease assembly time and solve real-world problems through the application of Total Quality Management principles. Students focus on proposal writing as well as math and science standards integrated in the projects. Students learn how to collaborate within diverse teams, manage projects, think critically, document research, write reports and communicate results to authentic audiences. Further, students apply science, literacy, mathematics, and technical skills to effectively solve challenging real-world problems with business and industry partners.

## **SREB AC Projects in Automated Materials Joining**

**Course Number:** IE74

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IE73 SREB AC Advanced Concepts in Materials Joining

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This is a culminating course where students apply what they have learned to real-world scenarios. Teams work collaboratively to analyze problems, create solutions, and focus on methods of automation analysis to solve the seven issues of waste. They create a conceptual model of an amusement park ride that uses welds that can withstand high impact loads. Students design, build and test a product for automated assembly and create and test an automated process to assemble the prototype. Two projects require students to write a white paper. Depending on state policy, students who successfully complete the course may be eligible for articulated or dual college credit. Students learn how to collaborate within diverse teams, manage projects, think critically, document research, write reports and communicate results to authentic audiences. Further, students apply science, literacy, mathematics, and technical skills to effectively solve challenging real-world problems with business and industry partners.

## **SREB AC Energy and Power Foundations**

**Course Number:** TR21

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This course engages students in a variety of hands-on, authentic projects to learn about energy and power methods through the design and construction of motors, pumps, heat exchangers, hydraulics, and pipeline systems. These are the technologies used in large power plant systems to run and maintain processes in energy generation plants. Through contextual projects, students will learn and apply physics, chemistry, fluid mechanics, thermodynamics, algebra, and statistics in learning how these systems interact in the energy and power arena. Students will learn how engineers and technicians use these systems in the real world to optimize efficiency.

## **SREB AC Energy Transmission and Distribution**

**Course Number:** TR22

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** TR21 SREB AC Energy and Power Foundations

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This course focuses on energy transmission and consumer usage. Through projects, students will be introduced to AC and DC power, transformers, the electrical grid and Smart Grid, and consumer load on the electrical system. To complete projects, students will use Ohm's law, Joule's law of heating, root mean square, Pythagorean Theorem, and trigonometric principles to understand how energy travels along power lines and is converted from direct current to alternating current to end up, ultimately, in homes and businesses. Students will gain an understanding of how power companies move power — stepping it up and down to meet the needs of the end-user — by designing working transformers, capacitors, inverters, and a power supply.

## **SREB AC Electronics and Control Systems**

**Course Number:** TR23

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** TR22 SREB AC Energy Transmission and Distribution

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** In this course, students will build on the knowledge and experience gained in the SREB AC Energy Transmission and Distribution course. Through projects, students will apply their knowledge to more advanced systems and learn how to program and use National Instrument's LabVIEW software and the myDAQ data acquisition device to work as engineers in making and analyzing countless scientific measurements. Students will study advanced topics in energy and power such as smart-home automation, plant-level process control, natural gas pipeline monitoring, energy storage and wind power. Each project presents students with a design problem that will require them to not only design and build a prototype, but also develop the software program that will test the prototype and gather measurable, quantifiable data.

## **SREB AC Advanced Science and Engineered Systems**

**Course Number:** TR24

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** TR23 SREB AC Electronics and Control Systems

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA), SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Through well-developed projects in this advanced course, students will assume the roles of building technicians, design engineers, recreational engineers, electrical technicians, and CEOs, while learning about real-world energy and power issues. Students will work with industry mentors to independently tackle real-world scenarios in the energy and power field. The projects in this course scaffold to allow students more choice in determining the final product for each project. This course incorporates knowledge of multiple sources of energy, engineered systems, societal impact and “the business of energy” as students engage in projects involving maglev trains, advanced concepts in steam energy, carbon sequestration and coal, hydraulic fracturing, alternative forms of fuel in transportation and environmental compliance.

## **SREB AC Clean Energy Technology I – Clean Energy Systems**

**Course Number:** TR31

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)  
**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This course exposes students to three sources of renewable energy: wind, solar and biofuels. Working with solar, thermal, chemical, and mechanical sources of clean energy teaches students how to apply physics, geography, chemistry, biology, geometry, algebra, and engineering fundamentals. Students learn the most efficient and appropriate use of energy production as they explore the relevant relationships among work, power, and energy. Students will engage in a wide variety of hands-on projects and lab activities that both test their knowledge and illustrate the interrelationships between the various forms of clean energy.

## **SREB AC Clean Energy Technology II – Clean Energy Applications**

**Course Number:** TR32

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** TR31 SREB AC Clean Energy Technology I – Clean Energy Systems

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA), SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This course builds on the foundation of SREB AC Clean Energy Systems and introduces nuclear power, steam generation, fuel cells, geothermal power, water power, AC/DC power generation, heat transfer and the laws of thermodynamics. In addition, students now use chemical and thermal energy principles to create, store and use energy efficiently to power a variety of mechanical and electrical devices. Students will engage in a variety of hands-on design projects to demonstrate principles using advanced technology hardware and software.

## **SREB AC Clean Energy Technology III – Clean Energy Strategies**

**Course Number:** TR33

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** TR32 SREB AC Clean Energy Technology II – Clean Energy Applications

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA), SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Students in this course utilize applicable skills from the foundational courses to tackle challenges associated with the implementation of clean energy technology. The hands-on projects encountered during this course will require students to address specific issues related to providing portable power in any situation, developing new energy storage systems, increasing the efficiency of the modern home, and designing more energy efficient buildings and homes.

## **SREB AC Clean Energy Innovations**

**Course Number:** TR34

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** TR33 SREB AC Clean Energy Technology III – Clean Energy Strategies

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA), SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** The innovations course is the fourth and final course in the Clean Energy Technology Pathway Program. The course will provide students the opportunity to work independently with open-ended, problem-solving scenarios to create an original solution in the area of clean energy entrepreneurship or clean energy research and development. Students will collaborate with a mentor to conduct applied research around a defined research problem, develop solutions, collect, and analyze relevant data, evaluate their solutions, and present their findings in public venues and competitions.

## **SREB AC Systems of Advanced Technology**

**Course Number:** TR12

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** SREB AC Advanced Technology for Design and Production

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

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

## **SREB AC Mechatronic Systems for Advanced Technology**

**Course Number:** TR13

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** TR12 SREB AC Systems of Advanced Technology

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

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

## **SREB AC Design for the Production of Advanced Products**

**Course Number:** TR14

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** SREB AC Mechatronic Systems for Advanced Production

**Aligned Career Technical Student Organization(s):** Technology Students Association (TSA) or SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** 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.

## **SREB AC Introduction to Logistics**

**Course Number:** IE41

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students(DECA), SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** 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.

## **SREB AC Functional Areas in Logistics**

**Course Number:** IE42

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IE41 SREB AC Introduction to Logistics

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education

Students(DECA), SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** 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.

## **SREB AC Global Logistics Management**

**Course Number:** IE43

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IE42 SREB AC Functional Areas in Logistics

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education

Students(DECA), SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This advanced course offers challenging projects that require students to look at the global implications of the industry in more earnest 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.

## **SREB AC Logistics and Supply Chain Management**

**Course Number:** IE44

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IE43 SREB AC Global Logistics Management

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education

Students(DECA), SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** This advanced course allows students to see the implications of all the concepts they learned in the previous three courses as they consider environmental impact, selecting business partners in a global and domestic chain, information technology and decisions regarding e-commerce. Students explore the ongoing need to balance dependability and resource outlay in meeting customer demands around the world. Projects will expand students' decision-making skills as they tackle issues related to transportation, distribution networks and manufacturing.



## **Welding Technology I**

**Course Number:** IM61

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Engage in thermal cutting tasks. Cultivate safety practices and the importance of personal protective equipment. Explore the procedures for metal preparation and its characteristics. Gain the knowledge, skills, and industry credentials for careers in the Welding pathway.

\* Per AWS, twenty (20) welding students to one (1) instructor is the maximum recommended ratio.

## **Welding Technology II**

**Course Number:** IM62

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IM61 Welding Technology I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Analyze various welding defects by inspection and testing methods. Explore various drawing and welding symbols used in blueprints. Produce multiple position shielded metal arc welding (SMAW) welds. Gain the knowledge, skills, and industry credentials for careers in the Welding pathway.

\* Per AWS, twenty (20) welding students to one (1) instructor is the maximum recommended ratio.

## **Welding Technology III**

**Course Number:** IM63

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IM62 Welding Technology II

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Improve overall welding skills. Create accurate welds from a variety of positions. Produce flux-cored arc welding (FCAW) and gas metal arc welding (GMAW) fillet and groove welds. Gain the knowledge, skills, and industry credentials for careers in the Welding pathway.

\* Per AWS, twenty (20) welding students to one (1) instructor is the maximum recommended ratio.

## **Woodworking I**

**Course Number:** IM21

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Develop a working knowledge of Health and Safety Hazards practices in the woodworking industry. Practice techniques required to safely operate hand tools, portable power tools, and stationary power tools used in the woodworking industry. Engage in procedures for designing, laying out, and constructing a cabinet assembly. Gain the knowledge, skills, and industry credentials for careers in manufacturing.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **Woodworking II**

**Course Number:** IM22

**Recommended Maximum Enrollment:** 20\*

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** IM21 Woodworking I

**Aligned Career Technical Student Organization(s):** SkillsUSA

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Practice advanced techniques required to safely operate hand tools, portable power tools, and stationary power tools used in the woodworking industry. Develop a working knowledge of material characteristics, advanced surface preparation, and finish techniques used in the woodworking industry. Engage in advanced procedures for designing, laying out, and constructing a cabinet assembly. Gain the knowledge, skills, and industry credentials for careers in manufacturing.

\* For safety reasons, the recommended enrollment should not exceed 20 students.

## **CTE Advanced Studies**

**Course Number:** WS03 (ARCH), WS12 (LAW), WS13 (MANU), WS15 (STEM), WS16 (TRAN)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular)

**Prerequisite:** Two CTE courses: one must be a concentrator course.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through analysis and research of selected career pathway. Experience real-world application of course/pathway content through a work-based learning lens acquired by utilizing employability skills in an authentic workforce activity. Evaluate and plan for a postsecondary career while educating others. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Apprenticeship**

**Course Number:** WA03 (ARCH), WA12 (LAW), WA13 (MANU), WA15 (STEM), WA16 (TRAN)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Perform the job duties and related education required as an employed apprentice in a career field registered by ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce environment. Evaluate and plan for a postsecondary career in the career cluster/pathway culminating in a State Certificate and a National Journeyworker Certificate issued by the USDOL. Gain the knowledge and skills for careers in the pathway of choice.

## **CTE Career and College Promise**

**Course Number:** Various

**Recommended Maximum Enrollment:** Varies

**Hours of Instruction:** Does not apply

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Career and College Promise provides a way for any North Carolina 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 North Carolina 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.

## **CTE Cooperative Education**

**Course Number:** WO03 (ARCH), WO12 (LAW), WO13 (MANU), WO15 (STEM), WO16 (TRAN)

**Recommended Maximum Enrollment:** 20

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** To get academic credit, the aligned coursework and related paid employment must be completed in the same academic year, which may be concurrent or consecutive semesters.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Experience paid employment aligned with classroom instruction, creating a structured work-based learning experience. Devise a jointly agreed training plan involving the student, teacher, employer, and parent, which outlines specific learning outcomes aligned with the student's career objective. Synthesize classroom content, career goals, roles, and responsibilities through a written agreement between the school and employer. Experience real-world application of technical skills, durable employability skills, and related education in an authentic workforce environment. Gain the knowledge and skills for careers in the pathway of choice.

### **CTE Entrepreneurial Experience**

**Course Number:** WE03 (ARCH), WE12 (LAW), WE13 (MANU), WE15 (STEM), WE16 (TRAN)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** Two CTE course credits: one must be a concentrator course.

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for the management, responsibilities, and risks of operating a business in a career pathway. Experience real-world application of workplace and employability skills in business management and operations. Learn skills and approaches to successfully evaluate and create new business opportunities. Gain the knowledge and skills for careers in the pathway of choice.

### **CTE Internship**

**Course Number:** WI03 (ARCH), WI12 (LAW), WI13 (MANU), WI15 (STEM), WI16 (TRAN)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for postsecondary education and future careers through observation and participation in the daily operations of a career in a general career field. Experience real-world application of job tasks acquired by utilizing durable employability skills in an authentic workforce activity. Gain the knowledge and skills for careers in the pathway of choice.

**CTE Pre-apprenticeship**

**Course Number:** WP03 (ARCH), WP12 (LAW), WP13 (MANU), WP15 (STEM), WP16 (TRAN)

**Recommended Maximum Enrollment:** 25

**Hours of Instruction:** 135 (block) 150 (regular); 120 hours minimum on the job

**Prerequisite:** None

**Aligned Career Technical Student Organization(s):** An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA); North Carolina FFA Association; National FFA Organization; Family, Career and Community Leaders of America (FCCLA); HOSA - Future Health Professionals; SkillsUSA; and Technology Student Association (TSA)

**Aligned Industry Credential:** Refer to the NC CTE Course Management System (CMS) for the current list of aligned credentials if applicable.

**Description:** Prepare for opportunities for postsecondary education and employment in an apprenticeship in a career field registered with ApprenticeshipNC. Experience real-world application of technical skills, employability skills, and related education in an authentic workforce activity. Evaluate and plan for a postsecondary career in the career cluster/pathway. Gain the knowledge and skills for careers in the pathway of choice.

## **APPENDIX A. LOCAL COURSE OPTIONS**

### **LOCAL COURSE OPTIONS**

If a Public School Unit (PSU) recognizes needs that are not addressed by courses in this document, that PSU can apply to offer a Local Course Option (LCO). A Local Course Option requires considerable advanced planning and preparation. Each local course must be applied for and approved or renewed before it is advertised and offered to students. Please consult the appropriate CTE Regional Coordinator for more information.

A Local Course Option should be used to:

- provide for innovation, but not duplication, of courses in the Course Inventory.
- meet unique local needs.
- work in partnership with local stakeholders.
- offer career potential that is permanent and not transitory or temporary in nature.
- assure employment opportunities for local students.
- support the purposes of CTE.
- promote high-skill, high-wage, high-demand, and emerging occupations.

## APPENDIX B. DEFINITIONS USED IN THIS DOCUMENT

**Career Clusters™** are groupings of occupations used as an organizing tool for curriculum design and instruction. The Career Cluster approach makes it easier for students to understand the relevance of their required courses and helps them select their elective courses more wisely.

**Career Pathway Major** is one that provides aligned specificity in a Career Pathway and can include either an Advanced Studies course, Work-based Learning course, or a course with aligned content.

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

**Certification** is industry recognition or confirmation of subject knowledge or the ability to perform specific tasks. The focus is on assessing the attainment of current experience, knowledge, and skill base.

**Foundational prerequisite** provides fundamental knowledge and skills needed for student success in secondary and postsecondary education and careers in the Career Pathway.

**Concentrator** is a student who has successfully completed a Concentrator course in an approved Career Pathway.

**Concentrator course** is a second- or third-level course in the Career Pathway (CPPOS) that builds upon technical skills acquired in a prerequisite course.

**Credential** provides evidence of authority, status, rights, and entitlement to privileges. Typically, a credential is a paper document.

**Curriculum partnering opportunities** are developed by national organizations, foundations, consortia, industry, and other curriculum providers. Partnering opportunities are approved by the Division of Career and Technical Education. To be approvable, curriculum partnering opportunities must include a valid and reliable measure of technical attainment that meets the state timeline for federal reporting.

**Field test course** is complete with all components. The primary intent of the field test year is to collect reliability data on all assessment items before the items are divided into the classroom and secure assessment banks. A secondary intent of the field test year is to collect feedback from teachers about the blueprint weighting, unpacked content, and instructional activities and resources used in the course.

**License** is permission from a government authority to perform certain tasks.

**Maximum enrollment** indicates the maximum number of students who can be enrolled in a course based on legal and safety requirements.

**Pilot course** is used to test and evaluate student interest and feasibility of a new course before full-scale development and implementation of all course components. During the pilot course year, adjustments will be made to improve or enhance course materials. At some designated point, a decision will be made whether or not to continue or terminate the development of the course.

**Recommended maximum enrollment** indicates the recommended maximum number of students who should be enrolled in a course based on best educational practice.