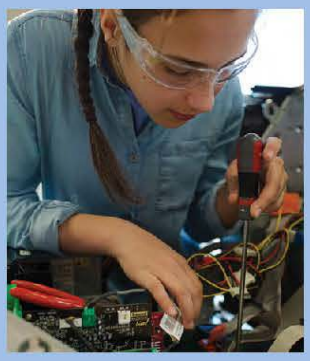
NORTH CAROLINA
CTE Course Inventory

CAREER AND TECHNICAL EDUCATION 2026-2027







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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

This document goes into effect in July 2026.

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TABLE OF CONTENTS

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 21st 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 21st 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 2026 CTE Course Inventory document was approved by the North Carolina State Board of Education in July 2025 and goes into effect for the 2026-2027 academic year. The document contains CTE pathways, course descriptions, and provides a link to the CTE Course Management System (CMS) that lists essential standards by course. 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, except Advanced Placement (AP) - College Board, Cambridge International Education (CIE), International Baccalaureate (IB), and Junior Reserve Officers' Training Corps (JROTC) courses. 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, objectives, 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 (LCOs):
   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

The National Career Clusters Framework serves as a guiding organizational structure for Career Technical Education (CTE) leaders and partners to create inclusive, industry-responsive, and learner-centered CTE programs and experiences.

The Framework was first established in 2002 through a collaborative effort of the federal government and states, facilitated by Advance CTE. Since that time, Advance CTE, on behalf of the states, has continued to serve as its steward. The original Framework design was used in some form in all 50 states and multiple territories, and it was used around the world to inform career development tools and platforms. In 2022, Advance CTE launched the multiyear Advancing the Framework initiative to modernize the Framework. North Carolina will implement this new Framework with the 2026-2027 year.

All NC CTE courses align to the modernized Framework. 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 multiple Career Clusters.

The modern Framework consists of 14 Clusters and 72 Sub-Clusters that serve as the primary organizing structures for CTE programs. These structures are supported by five Cluster Groupings aligned to purpose and impact of included careers, and a Connecting and Supporting Student Success grouping (which includes three Cross-Cutting Clusters) that provide both skills and careers that can stand alone and intersect with all other Clusters. Twelve Career-Ready Practices ensure that every program includes the skills that are essential to every career and life.

Federal law requires each school receiving Perkins funds to offer at least one Program of Study (POS). Programs of Study are synonymous with pathways in North Carolina. 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.

CREDENTIALS

The attainment of an industry-recognized credential ensures that students graduate from high school globally competitive for work and/or postsecondary education.

An industry-recognized credential enables local businesses to save many hours of training time and money because it is evidence that a new hire is already trained on a specific set of technical skills.

An industry-recognized credential provides opportunity for students to:

- validate and showcase their knowledge and skill attainment.
- stand out in a field of job applicants.
- potentially start at a higher salary level.

With over 160 available credentials, student opportunities are abundant! Refer to the NC CTE Course Management System (CMS) for the current list of career cluster-aligned credentials where applicable.

CAREER AND TECHNICAL STUDENT ORGANIZATIONS

A Career and Technical Student Organization (CTSO) is an intracurricular, organized group established for students in Career and Technical Education (CTE) courses to further their knowledge and skills by participating in real world activities, events, and competitions.

Mission and Purpose

Career and Technical Student Organizations (CTSOs) enhance student learning through contextual instruction, leadership, personal development, applied learning, and real-world application. CTSOs are intracurricular and work as an integral component of the classroom curriculum and instruction, building upon employability and career skills and concepts through the application and engagement of students in hands- on demonstrations and real-life and/or work experiences through a CTE program.

CTSOs help guide students in developing a career path, a program of study and provide opportunities in gaining the skills and abilities needed to be successful in those careers through CTSO activities, programs, and competitive events. In addition, students have opportunities to hold leadership positions at the local, state, and national levels and attend leadership development conferences to network with other students and business and industry partners.

An Association for Marketing Education Students (DECA)

DECA is an international organization available to all high school students who are currently enrolled in Marketing and Entrepreneurship Education courses. Through activities at the local, state and national level DECA members have the opportunity to enhance their working knowledge of vocational understanding, community service, leadership development, and social intelligence. Since its conception, DECA has developed a competitive events program for students to compete against peers for recognition of skills necessary for marketing careers. DECA Competitive Events parallel Marketing and Entrepreneurship Education curricula and industry-validated competencies. Participants compete in written papers, tests, and role-playing events that simulate actual business situations. They are judged by businesspeople in the specific occupational area.

Family, Career and Community Leaders of America (FCCLA)

Family, Career and Community Leaders of America (FCCLA) is a national Career and Technical Student Organization (CTSO) that significantly enhances Family and Consumer Sciences (FCS) education. Established in 1945, FCCLA focuses on personal growth and leadership development through FCS education, emphasizing roles such as family member, wage earner, and community leader. The organization provides teacher-developed and student-tested project-based learning strategies, shifting the responsibility for achieving Career and Technical Education (CTE) and FCS program outcomes to students. Through various intracurricular chapter programs and projects, students deepen their understanding of FCS

standards and apply their knowledge in real-world contexts. FCCLA most directly supports careers in arts and design, hospitality and tourism, education, and human services.

Future Business Leaders of America (FBLA)

Future Business Leaders of America is a nonprofit 501 (c) (3) education association with a quarter-million students preparing for careers in business and business-related fields. FBLA is organized on local, state, and national levels. Business teachers, advisors, and advisory councils (including school officials, businesspeople, and community representatives) guide local chapters. State advisers and committee members coordinate chapter activities for the national organization. FBLA is the largest business career student organization in the world.

HOSA – Future Health Professionals

The US Department of Education and the Health Science Education Division of ACTE endorses HOSA - Future Health Professionals. HOSA -Future Health Professionals, a career and technical student organization, is for students who are or have been enrolled in a Health Science Education program or are interested in a healthcare career. The mission of HOSA is to empower Future Health Professionals to become leaders in the global health community through education, collaboration, and experience. As an international organization, HOSA - Future Health Professionals has over 300,000 members globally. More than 90 competitive events include health science, health professions, emergency preparedness, leadership, teamwork, and recognition events.

North Carolina FFA Association and National FFA Organization

FFA is the agricultural education youth organization that prepares members for premier leadership, personal growth, and career success. FFA develops members' potential and helps them discover their talent through hands on experiences, which give members 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 a diverse organization, operating in rural, urban, and suburban schools. Students aged 12-21 enrolled in agricultural educational programs are eligible for membership. FFA is one of the three instructional components of agricultural education.

SkillsUSA

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)

The Technology Student Association (TSA) is a national organization available to all middle school and high school students who are enrolled in Computer Science, IT and Technology Education courses. Through activities at the local, state and national level TSA members have the opportunity to engage in community service and leadership development as they enhance their skills and understanding of computer science, IT and technology, engineering, and design. TSA has developed over 70 timely competitions that enable students to compete against peers for recognition in various CSITT and STEM related areas.

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 career 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.

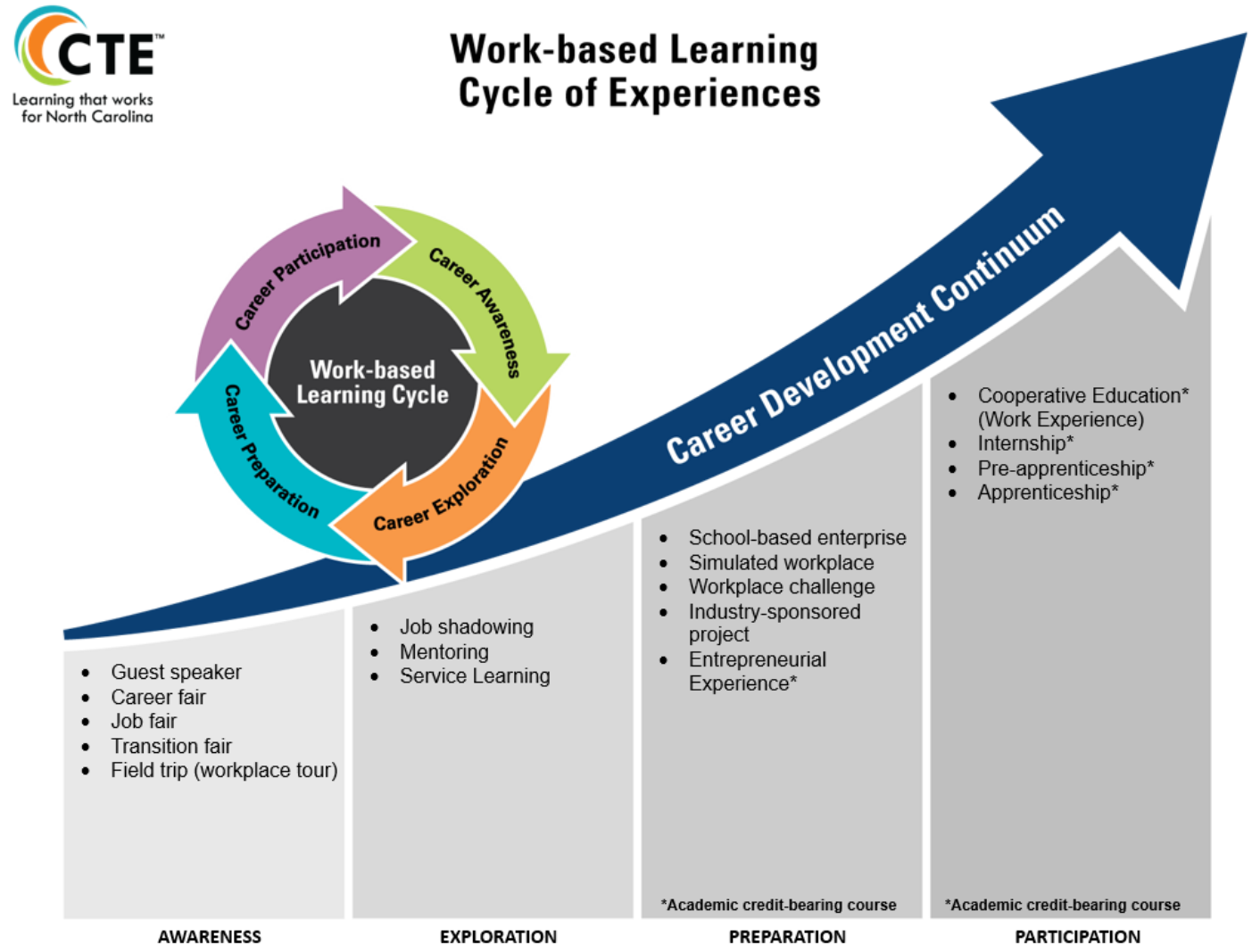
WORK-BASED LEARNING IMPLEMENTATION

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, businesses, 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.

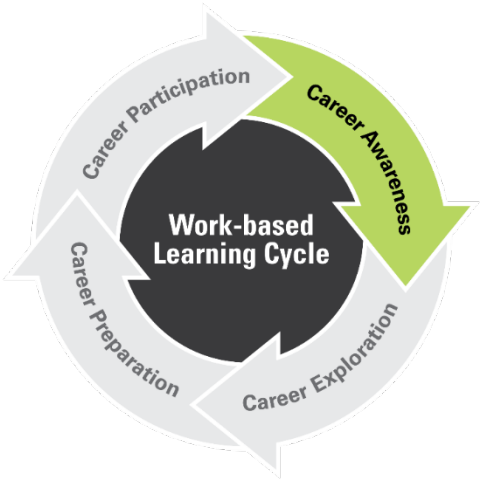
The Work-based Learning Cycle of Experiences, integrated into the Career Development Continuum, offers diverse, planned, and meaningful activities, providing students with varied opportunities to actively engage with the world of work.



CAREER AWARENESS

WBL Cycle of Experiences - AWARENESS	
Summary	Students will discover a variety of careers and industries, exploring different workplaces to identify personal interests and skills.
Anticipated Outcomes	Students will develop a foundational understanding of various career options.
Advantages	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 post-secondary 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.

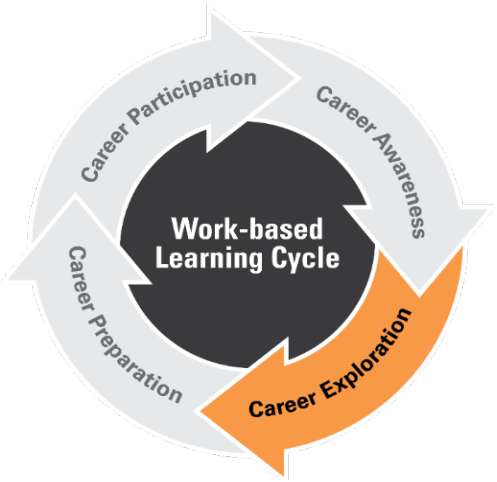
Transition fair: An event designed for students with disabilities who are exiting high school. Community support organizations, post-secondary institutions, and employers provide information about opportunities and support for education, employment, and independent living.

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	
Summary	Students will dive deeper into specific careers through job shadowing, mentorship, and service learning, finding potential career pathways
Anticipated Outcomes	Students will gain insights into specific industries and professions.
Advantages	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 the 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.

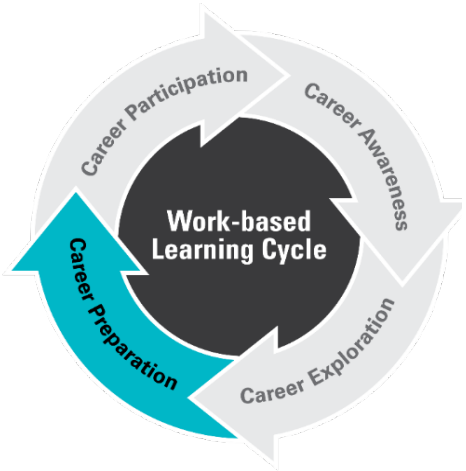
Mentoring: A program involves pairing a student (mentee or protégé) with a community professional (mentor) in a one-to-one relationship with the intent of providing first-hand experience in a career field/cluster of the student's choice. Mentors are encouraged to provide as much hands-on experience as 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	
Summary	Students will develop essential skills, craft resumes, and participate in formal training to grasp workplace expectations and norms.
Anticipated Outcomes	Students will acquire practical skills and knowledge for a personalized career field.
Advantages	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.

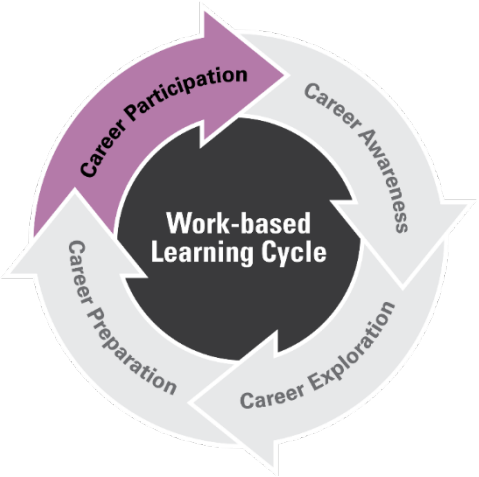
Workplace challenge (industry-sponsored project): Students develop or complete a project or service for an employer partner.

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 to make a profit and expand 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	
Summary	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.
Anticipated Outcomes	Students will apply classroom knowledge in practical scenarios.
Advantages	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 the 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 allows 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, supplemental education, 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 on-the-job learning, supplemental education, and progressive wages. 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. 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.

PROGRAM SPECIFIC WORK-BASED LEARNING EXPERIENCES

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

Supervised Agricultural Experience: A student-led, instructor-supervised work-based learning experience that is embedded in the Agricultural Education curriculum. The SAE Foundational or Immersion experience results in measurable outcomes and is part of the Agriculture Cluster and Natural Resources pathway. For more information, please refer to the agricultural education program outlined in the North Carolina Career and Technical Education Course of Study.

Healthcare 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: Students engage in supervised internships in local childcare centers as a structured part of the Early Childhood Education curriculum. Students actively engage with young children by leading instructional activities that support developmental learning, helping students apply classroom knowledge in real-world settings, preparing them for careers in early childhood. For more information, please refer to the Early Childhood Education pathway outlined in the North Carolina Career and Technical Education Course of Study.

Culinary Arts and Hospitality Experience: Students have the opportunity to engage in a school-based Enterprise or Internship experience as a structured part of their Culinary Arts and Hospitality curriculum. Through these experiences, students will engage in opportunities that align to industry expectations and operations. Students will apply learned culinary skills to the workplace through either a simulated work experience or an industry internship.

Teaching as a Profession Experience: Students engage in supervised field experience in local schools as a required component of the Teaching as a Profession curriculum. Students actively engage in public school classrooms as they learn the duties and responsibilities of a teacher. Students assist cooperating teachers as needed and facilitate learning opportunities for students that align to the NC Standard Course of Study. For more information, please refer to the Teaching as a Profession pathway 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

WORK-BASED LEARNING COURSES

Work-based Learning (WBL) courses provide students with hands-on, real-world experiences that connect classroom instruction to career pathways. These courses allow students to develop technical and professional skills while gaining valuable industry exposure. Below are the details for various CTE WBL courses, including course numbers, recommended enrollment, prerequisites, and course descriptions.

CTE Advanced Studies Honors

Course Numbers: WS01 (ADMF), WS02 (AGRI), WS03 (ARED), WS04 (DTSC), WS05 (CONS), WS06 (EDUC), WS07 (ENNR), WS08 (FINS), WS09 (HCHS), WS10 (HOET), WS11 (MGTE), WS12 (MRKS), WS13 (PSSA), WS14 (SCTR)
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: Two CTE courses: one must be a concentrator course
Description: Prepare for postsecondary education and future careers through analysis and research of a 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 Numbers: WA01 (ADMF), WA02 (AGRI), WA03 (ARED), WA04 (DTSC), WA05 (CONS), WA06 (EDUC), WA07 (ENNR), WA08 (FINS), WA09 (HCHS), WA10 (HOET), WA11 (MGTE), WA12 (MRKS), WA13 (PSSA), WA14 (SCTR)
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular); 120 hours minimum on the job
Prerequisite: None
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

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 the requirements for CTE concentration. Credit may be transferable 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 Numbers: WO01 (ADMF), WO02 (AGRI), WO03 (ARED), WO04 (DTSC), WO05 (CONS), WO06 (EDUC), WO07 (ENNR), WO08 (FINS), WO09 (HCHS), WO10 (HOET), WO11 (MGTE), WO12 (MRKS), WO13 (PSSA), WO14 (SCTR)

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.

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 Numbers: WE01 (ADMF), WE02 (AGRI), WE03 (ARED), WE04 (DTSC), WE05 (CONS), WE06 (EDUC), WE07 (ENNR), WE08 (FINS), WE09 (HCHS), WE10 (HOET), WE11 (MGTE), WE12 (MRKS), WE13 (PSSA), WE14 (SCTR)

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.

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 Numbers: WI01 (ADMF), WI02 (AGRI), WI03 (ARED), WI04 (DTSC), WI05 (CONS), WI06 (EDUC), WI07 (ENNR), WI08 (FINS), WI09 (HCHS), WI10 (HOET), WI11 (MGTE), WI12 (MRKS), WI13 (PSSA), WI14 (SCTR)

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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 Numbers: WP01 (ADMF), WP02 (AGRI), WP03 (ARED), WP04 (DTSC), WP05 (CONS), WP06 (EDUC), WP07 (ENNR), WP08 (FINS), WP09 (HCHS), WP10 (HOET), WP11 (MGTE), WP12 (MRKS), WP13 (PSSA), WP14 (SCTR)

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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.

MIDDLE GRADES EXPLORATION

North Carolina Career and Technical Education middle grade programs provide a culture of learning that encourages all students to discover, explore, and engage in curriculum and opportunities to introduce and develop 21st-century skills in preparation for high school, college, and career. These courses bring career pathways into laser focus so that students can get a head start on accomplishing career goals before graduating high school.

Agricultural and Environmental Biotechnology
Course Number: AY12
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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 agriculture and biotechnology.

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
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 Digital Technology and Computer Science Career Cluster.

Apple: Everyone Can Code I - Puzzles
Course Number: CY13
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: None
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 Digital Technology and Computer Science Career Cluster.

Career Exploration
Course Number: EY30*
Recommended Maximum Enrollment: 25
Hours of Instruction: 30 to 90 hours
Prerequisite: None
Description: Explore the vital knowledge, skills, and purpose of careers in the Career and Technical Education (CTE) career clusters. Evaluate high school pathways to identify career education, training, and certifications. Discover opportunities Career and Technical Organizations (CTSOs) provide within the school setting and explore events and competitions that align with each career cluster. Gain knowledge to help prepare for a chosen career.
* Course code EY30 should be used for all Career Exploration units based on local needs.

Coding in Minecraft - Introductory
Course Number: CY30
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: None
Description: Design algorithms using the Minecraft platform. Investigate how to determine the outcome of running a series of programming statements. 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 Digital Technology and Computer Science Career Cluster.

Coding in Minecraft - Intermediate
Course Number: CY31
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY30 Coding in Minecraft - Introductory
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 Digital Technology and Computer Science Career Cluster.

Coding in Minecraft - Advanced
Course Number: CY32
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY31 Coding in Minecraft - Intermediate
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 Digital Technology and Computer Science Career Cluster.

Computer Science Discoveries I
Course Number: CY20
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: None
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 Digital Technology and Computer Science Career Cluster.

Computer Science Discoveries II
Course Number: CY21
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY20 Computer Science Discoveries I
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 Digital Technology and Computer Science Career Cluster.

Computer Science Discoveries III
Course Number: CY22
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY21 Computer Science Discoveries II
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 Digital Technology and Computer Science Career Cluster.

Digital Literacy
Course Number: CY04
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None

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 Digital Technology and Computer Science Career Cluster.

Engineering: Exploring Technology I
Course Number: CY40
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: None
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 Digital Technology and Computer Science Career Cluster.

Engineering: Exploring Technology II
Course Number: CY41
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY40 Engineering: Exploring Technology I
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 Digital Technology and Computer Science Career Cluster.

Engineering: Invention and Innovation I
Course Number: CY42
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: None
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 Digital Technology and Computer Science Career Cluster.

Engineering: Invention and Innovation II
Course Number: CY43
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY42 Engineering: Invention and Innovation I

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 Digital Technology and Computer Science Career Cluster.

Engineering: Technological Systems I
Course Number: CY44
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: None
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 Digital Technology and Computer Science Career Cluster.

Engineering: Technological Systems II
Course Number: CY45
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY44 Engineering: Technological Systems I
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 Digital Technology and Computer Science Career Cluster.

Exploring Agricultural Issues
Course Number: AY23
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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 agriculture, energy, and natural resources.

Exploring Animal and Plant Science
Course Number: AY21
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None

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 agriculture.

Exploring Apparel and Interior Design
Course Number: FY12
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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 Business Activities
Course Number: BY12
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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
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

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 Childcare
Course Number: FY14
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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 Economic Systems
Course Number: BY11
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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.

Exploring Environmental and Natural Resources
Course Number: AY20
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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 agriculture, energy, and natural resources.

Exploring Financial Literacy
Course Number: EY12
Recommended Maximum Enrollment: 25
Hours of Instruction: 45

Prerequisite: None
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 Food and Agricultural Products
Course Number: AY22
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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 agriculture.

Exploring Nutrition and Wellness
Course Number: FY11
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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
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.

Fundamentals of the Agricultural Science Program
Course Number: AY24
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Description: Establish a connection to agriculture through career exploration. 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 agriculture, energy, and natural resources.

Fundamentals of Biotechnology
Course Number: AY10
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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 agriculture and biotechnology.

Introduction to Biotechnology
Course Number: AY11
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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 agriculture and biotechnology.

Introduction to Office Productivity
Course Number: CY02
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None

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 Digital Technology and Computer Science Career Cluster.

Keyboarding and Basic Word Processing
Course Number: CY01
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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 Digital Technology and Computer Science Career Cluster.

Office Productivity Applications
Course Number: CY03
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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 Digital Technology and Computer Science Career Cluster.

PLTW Gateway: App Creators
Course Number: CY62
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
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

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
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
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
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
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
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
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
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
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.

BUILDING AND MOVING CAREER CLUSTER GROUPING

Within the Building and Moving Career Cluster Grouping, the Career Clusters that students may choose from include:

- Advanced Manufacturing
- Construction
- Supply Chain and Transportation

ADVANCED MANUFACTURING CAREER CLUSTER

The Advanced Manufacturing Career Cluster blends innovative technologies and practices to enhance design and production. It covers areas such as engineering, research and development, automation and artificial intelligence, equipment maintenance, safety protocols, and quality control. This career cluster aims to increase efficiency, reduce waste, ensure safety, and produce high-quality goods, driving the industry's growth and adapting to modern demand.

Pathways that students may pursue within the Advanced Manufacturing Career Cluster include:

- Aerospace Engineering
- Automated Materials Joining
- Drafting Engineering
- Engineering
- Integrated Production Technologies
- Metals Manufacturing
- Technology Engineering and Design

Aerospace Engineering Pathway

SREB AC Fundamentals of Aerospace Technology Honors
Course Number: CR20
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None

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 Advanced Aerospace Technology Honors
Course Number: CR21
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CR20 SREB AC Fundamentals of Aerospace Technology Honors
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 Honors
Course Number: CR22
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CR21 SREB AC Advanced Aerospace Technology Honors

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 Honors
Course Number: CR23
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CR22 SREB AC Aeronautics Engineering Applications Honors
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.

Automated Materials Joining Pathway

SREB AC Introduction to Automated Materials Joining Honors
Course Number: IE71
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None

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 Honors
Course Number: IE72
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IE71 SREB AC Introduction to Automated Materials Joining Honors
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 Honors
Course Number: IE73
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IE72 SREB AC Applications in Automated Materials Joining Honors

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 Honors
Course Number: IE74
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IE73 SREB AC Advanced Concepts in Materials Joining Honors
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.

Drafting Engineering Pathway

Drafting I Honors
Course Number: IC61
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 - Engineering Honors
Course Number: IV22
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC61 Drafting I Honors
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 - Engineering Honors
Course Number: IV23
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IV22 Drafting II - Engineering Honors
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.

Engineering Pathway

PLTW Engineering Essentials
Course Number: CE12
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Introduction to Engineering Design Honors
Course Number: CE10
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None

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
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.

PLTW Digital Electronics
Course Number: CE13
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CE10 PLTW Introduction to Engineering Design Honors or CE11 PLTW Principles of Engineering
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 Computer Integrated Manufacturing Honors
Course Number: CE17
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CE10 PLTW Introduction to Engineering Design Honors or CE11 PLTW Principles of Engineering
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 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 Honors or CE11 PLTW Principles of Engineering
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 Aerospace Engineering Honors
Course Number: CE15
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CE10 PLTW Introduction to Engineering Design Honors or CE11 PLTW Principles of Engineering
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 Environmental Sustainability Honors
Course Number: CE18
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CE10 PLTW Introduction to Engineering Design Honors or CE11 PLTW Principles of Engineering
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.

PLTW Capstone
Course Number: CE16
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)

Prerequisite: CE13 PLTW Digital Electronics or CE14 PLTW Civil Engineering and Architecture or CE15 PLTW Aerospace Engineering Honors or CE17 PLTW Computer Integrated Manufacturing Honors or CE18 PLTW Environmental Sustainability or HP72 PLTW Medical Interventions
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.

Integrated Production Technologies Pathway

SREB AC Advanced Technology for Design and Production Honors
Course Number: TR11
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Systems of Advanced Technology Honors
Course Number: TR12
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: SREB AC Advanced Technology for Design and Production
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 Honors
Course Number: TR13
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: TR12 SREB AC Systems of Advanced Technology Honors

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 Honors
Course Number: TR14
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: SREB AC Mechatronic Systems for Advanced Production
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.

Metals Manufacturing Pathway

Metals Manufacturing Technology I Honors
Course Number: IM41
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: IM42
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IM41 Metals Manufacturing Technology I Honors
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 Honors
Course Number: IM43
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IM42 Metals Manufacturing Technology II Honors
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.

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
Description: Explore how technology is used to solve problems. Demonstrate how to apply basic computer science principles to solve problems. Discover the universal systems model in products and processes society uses every day. Build a scale model of a structure, both physically and digitally, by applying the Engineering Design Process. Gain the knowledge and skills for careers in the Technology, Engineering, and Design pathway.

Technological Design
Course Number: CT11
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CT10 Technology Engineering and Design
Description: Turn your ideas into sketches, drawings, and 3D models. Design towers, crash barriers, and test concrete beams. Gain experience using microcontrollers and coding with TinkerCAD Circuits to build a robot. Explore cutting-edge technologies by creating a virtual reality experience. Gain the knowledge and skills for careers in the Technology, Engineering, and Design pathway.

Engineering Design
Course Number: CT12
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CT10 Technology Engineering and Design
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.

CONSTRUCTION CAREER CLUSTER

The Construction Career Cluster focuses on professions involved in designing, planning, managing, and executing projects in the built environment. It emphasizes sustainable building practices to ensure that structures are both environmentally responsible and resilient. Careers in this cluster are pivotal in creating durable infrastructure that meets present needs without compromising future generations' ability to meet their own, covering a range of roles from architects and engineers to construction managers and skilled tradespeople.

Pathways that students may pursue within the Construction Career Cluster include:

- Carpentry
- Drafting Architectural
- Electrical Trades
- HVACR
- Masonry
- Plumbing
- Welding
- Woodworking

Carpentry Pathway

Carpentry I
Course Number: IC21
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
Description: Safely and properly use common carpentry hand and power tools. Use measuring and construction math skills to read and interpret common construction plan drawings. Use basic carpentry procedures to build a product using common building materials, fasteners, and adhesives. 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 Honors
Course Number: IC22
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC21 Carpentry I

Description: Read and interpret construction plan drawings to perform basic building layout tasks that meet plan specifications. Lift, stack, and transport common materials found on a construction job site to prepare and stage an area for building construction. Build a structure that exhibits a working knowledge of material estimation, layout, and construction of floor, wall, and roof 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.

Carpentry III Honors
Course Number: IC23
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC22 Carpentry II Honors
Description: Select and install components used in the building envelope system to sufficiently seal a structure. Estimate and install common types of materials used in roofing. Lay out and install common exterior siding to a structure. 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 IV
Course Number: IC24
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC23 Carpentry III Honors
Description: Install gypsum board on wood and steel framing. Install interior finish and trim to door, window, base, and ceilings. Install interior and exterior doors and their hardware in a rough or finished opening. 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 Architectural Pathway

Drafting I Honors
Course Number: IC61
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: IC62
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC61 Drafting I Honors
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 III - Architectural Honors
Course Number: IC63
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC62 Drafting II - Architectural Honors
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.

Electrical Trades Pathway

Electrical Trades I Honors
Course Number: IC41
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
Description: Safely and properly use hand tools common for most electrical work. Perform the art of basic conduit bending and installation. Safely and properly use, install, and assemble various types of outlets, switches, and lighting devices common in most 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.

Electrical Trades II Honors
Course Number: IC42
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC41 Electrical Trades I Honors

Description: Select the appropriate conduit body and components for a basic electrical raceway system. Safely and properly use power tools common to most electrical work. Use electrical testing equipment to determine common problems with electrical circuits. 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 Honors
Course Number: IC43
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC42 Electrical Trades II Honors
Description: Use the National Electric Code (NEC) to determine requirements for installing electrical components. Select and install light sources and auxiliary equipment to solve common light needs. Select, install, and support pull and junction boxes to facilitate the installation of conductors and wire connections. 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 IV
Course Number: IC44
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC43 Electrical Trades III Honors
Description: Install and connect circuit breakers and fuses in electrical panel boxes. Connect and test a common electrical current motor. Inspect and diagnose common electrical control 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 Pathway

Construction Core
Course Number: IC00
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

HVACR I Honors
Course Number: IC31
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC00 Construction Core
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 Honors
Course Number: IC32
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC31 HVACR I Honors
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 Honors
Course Number: IC33
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC32 HVACR II Honors
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.

Masonry Pathway

Masonry I Honors
Course Number: IC11
Recommended Maximum Enrollment: 20*

Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: IC12
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC11 Masonry I Honors
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 Honors
Course Number: IC13
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC12 Masonry II Honors
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.

Plumbing Pathway

Construction Core
Course Number: IC00
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None

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.

Plumbing I
Course Number: IC51
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC00 Construction Core
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 Honors
Course Number: IC52
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC51 Plumbing I
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 Honors
Course Number: IC53
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC52 Plumbing II Honors
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.

Welding Pathway

Welding Technology I Honors
Course Number: IM61
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.
* For safety reasons, the recommended enrollment should not exceed 20 students.

Welding Technology II Honors
Course Number: IM62
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IM61 Welding Technology I Honors
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.
* For safety reasons, the recommended enrollment should not exceed 20 students.

Welding Technology III Honors
Course Number: IM63
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IM62 Welding Technology II Honors
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.
* For safety reasons, the recommended enrollment should not exceed 20 students.

Woodworking Pathway

Woodworking I
Course Number: IM21
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: IM22
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IM21 Woodworking I
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.

SUPPLY CHAIN AND TRANSPORTATION CAREER CLUSTER

The Supply Chain and Transportation Career Cluster encompasses the transfer, coordination, and management of goods from production to consumption, ensuring efficient movement across various modes of transportation including air, ground, and water, as well as maintenance of the respective transport modes. This career cluster integrates logistics and distribution networks to facilitate the seamless flow of materials and products, playing a crucial role in global commerce, economic development, and community health.

Pathways that students may pursue within the Supply Chain and Transportation Career Cluster include:

- Automotive Body Repair
- Automotive Service
- Global Logistics and Supply Chain Management

Automotive Body Repair Pathway

Automotive Body Repair I
Course Number: IT35
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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
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 Body Repair III – Non-structural
Course Number: IT37
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)

Prerequisite: IT36 Automotive Body Repair II
Description: Develop the basic skills using metal working tools 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 small dent removal on steel panels. 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 III – Refinishing and Plastic Repair
Course Number: IT38
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IT36 Automotive Body Repair II
Description: Develop the basic skills using refinishing and plastic repair tools and materials used in automotive body repair. Prepare vehicle surfaces for primer and topcoat applications. Develop the basic skills needed for plastic repair and minor paint repairs. Practice environmentally safe approaches when refinishing vehicles. 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 Pathway

Automotive Service Fundamentals
Course Number: IT11
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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
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 Honors
Course Number: IT17
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IT16 Automotive Service I
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 Honors
Course Number: IT18
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IT17 Automotive Service II Honors
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.

Global Logistics and Supply Chain Management Pathway

SREB AC Introduction to Logistics Honors
Course Number: IE41
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: IE42
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IE41 SREB AC Introduction to Logistics Honors

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 Honors
Course Number: IE43
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IE42 SREB AC Functional Areas in Logistics Honors
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 Honors
Course Number: IE44
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IE43 SREB AC Global Logistics Management Honors
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.

CARING FOR COMMUNITIES CAREER CLUSTER GROUPING

Within the Caring for Communities Career Cluster Grouping, the Career Clusters that students may choose from include:

- Education
- Healthcare and Human Services
- Public Service and Safety

EDUCATION CAREER CLUSTER

The Education Career Cluster spans careers aimed at fostering learning from early childhood to adulthood, including teaching, instructional design, counseling services, community engagement, learner support, and educator training. This career cluster emphasizes quality education standards and lifelong learning, preparing individuals for success through all life stages by nurturing knowledge, skills, and critical thinking, and encouraging personal and societal growth in a constantly evolving world.

Pathways that students may pursue within the Education Career Cluster include:

- Early Childhood Development and Services
- Teaching/Training

Early Childhood Development and Services Pathway

Child Development
Course Number: FE60
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

Early Childhood Education I Honors
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 10th day of class.
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 Honors
Course Number: FE12*
Recommended Maximum Enrollment: 20**
Hours of Instruction: 270 (block) 300 (regular)
Prerequisite: FE11 Early Childhood Education I Honors
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.

Teaching/Training Pathway

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 10th-12th grade and have a GPA of at least 2.5.
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 21st 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
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
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.

HEALTHCARE AND HUMAN SERVICES CAREER CLUSTER

The Healthcare and Human Services Career Cluster promotes whole health in individuals and communities through a diverse array of services. This sector includes technical, mental, and therapeutic services and personal care, supported by medical and social sciences. By addressing social determinants of health and leveraging health data and science, this career cluster aims to enhance the overall health and resilience of individuals, families, and communities.

Pathways students can pursue include:

- Biomedical Technology
- Biotechnology Research and Development
- Counseling and Mental Health
- Food and Nutrition
- Health Informatics
- Healthcare Professional

Biomedical Technology Pathway

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
Description: This course is designed for students to examine interactions of human body systems and apply knowledge to solve real-world medical cases.

Health Science I
Course Number: HU40
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

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
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.

Pharmacy Technician Honors
Course Number: HH32
Recommended Maximum Enrollment: 20
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: HU42 Health Science II OR HB11 Biomedical Technology
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.

Biotechnology Research and Development Pathway

PLTW Principles of Biomedical Sciences
Course Number: HP70
Recommended Maximum Enrollment: 20
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

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
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
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 Biomedical Innovations Honors
Course Number: HP73
Recommended Maximum Enrollment: 20
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: HP72 PLTW Medical Interventions
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 Capstone
Course Number: CE16
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CE13 PLTW Digital Electronics or CE14 PLTW Civil Engineering and Architecture or CE15 PLTW Aerospace Engineering Honors or CE17 PLTW Computer Integrated Manufacturing Honors or CE18 PLTW Environmental Sustainability or HP72 PLTW Medical Interventions
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.

Counseling and Mental Health Pathway

Counseling and Mental Health I
Course Number: FC13
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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
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.

Food and Nutrition Pathway

Food and Nutrition I
Course Number: FN41
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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
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 Honors
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

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.

Health Informatics Pathway

SREB AC Health Informatics I - Data and Use Honors
Course Number: HR11
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: HR12
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: HR11 SREB AC Health Informatics I - Data and Use Honors
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 Honors

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
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.

Healthcare Professional Pathway

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
Description: This course is designed for students to examine interactions of human body systems and apply knowledge to solve real-world medical cases.

Health Science I
Course Number: HU40
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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
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.

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.*
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.*
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 Honors
Course Number: HN42
Recommended Maximum Enrollment: 10*
Hours of Instruction: 270 (block) 300 (regular)
Prerequisite: HU42 Health Science II
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 (NCBON) 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 Honors are transferred to HN42 Nursing Fundamentals and Non-Practicum Honors.

Nursing Fundamentals and Practicum Honors
Course Number: HN43
Recommended Maximum Enrollment: 10*
Hours of Instruction: 270 (block) 300 (regular)
Prerequisite: HU42 Health Science II **
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.

Fundamentals of Gerontology
Course Number: HN44
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: HU42 Health Science II **

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.

Pharmacy Technician Honors
Course Number: HH32
Recommended Maximum Enrollment: 20
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: HU42 Health Science II OR HB11 Biomedical Technology
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.

Public Health Fundamentals
Course Number: HN45
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: HU42 Health Science II **
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.

PUBLIC SERVICE AND SAFETY CAREER CLUSTER

The Public Service and Safety Career Cluster encompasses roles in local, state, and federal government; legal and justice systems; security; and military operations, all aimed at promoting civic responsibility and ensuring the well-being, security, functionality, and resilience of communities, states, and countries.

Pathways that students may pursue within the Public Service and Safety Career Cluster include:

- Emergency Management
- Emergency Medical Technology
- Firefighter Technology
- Junior Reserve Officers' Training Corps
- Law and Justice
- Public Safety

Emergency Management Pathway

Public Safety I
Course Number: IP11
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

Emergency Medical Technology II Honors
Course Number: IP22
Recommended Maximum Enrollment: 16*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IP21 Emergency Medical Technology I Honors and English III **
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.)

Firefighter Technology II
Course Number: IP32
Recommended Maximum Enrollment: 20
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IP31 Firefighter Technology I
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.

Law and Justice II Honors
Course Number: IP42
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IP41 Law and Justice I
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.

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 Honors OR IP32 Firefighter Technology II OR IP42 Law and Justice II Honors
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 Honors
Course Number: IP52
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IP51 Emergency Management I
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.

Emergency Medical Technology Pathway

Emergency Medical Technology I Honors
Course Number: IP21
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: English II**
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 Honors
Course Number: IP22
Recommended Maximum Enrollment: 16*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IP21 Emergency Medical Technology I Honors and English III **
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.)

Firefighter Technology Pathway

Firefighter Technology I
Course Number: IP31
Recommended Maximum Enrollment: 20
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None

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
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 Honors
Course Number: IP33
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IP32 Firefighter Technology II
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.

Junior Reserve Officers' Training Corps Pathway

JROTC I
Course Number: 9501
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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
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
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
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
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
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
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

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 Pathway

Law and Justice I
Course Number: IP41
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: IP42
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IP41 Law and Justice I
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.

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 Honors OR IP32 Firefighter Technology II OR IP42 Law and Justice II Honors
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.

Public Safety Pathway

Public Safety I
Course Number: IP11
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: IP12
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IP11 Public Safety I
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.

CONNECTING AND SUPPORTING SUCCESS CAREER CLUSTER GROUPING

Within the Connecting and Supporting Success Career Cluster Grouping, the Career Clusters that students may choose from include:

- Digital Technology and Computer Science
- Management and Entrepreneurship
- Marketing and Sales

DIGITAL TECHNOLOGY AND COMPUTER SCIENCE CAREER CLUSTER

The Digital Technology and Computer Science Career Cluster focuses on developing digital systems for communication and data storage using critical technologies such as artificial intelligence (AI), data analytics, and cybersecurity. This career cluster builds skills necessary for all careers to navigate and lead in the constantly evolving tech landscape and drives innovation across all industries to tackle complex challenges and opportunities in communities and economies.

This career cluster is also a Connecting and Supporting Success Cluster as the skills gained through this career clusters area are applicable across all career clusters. Practitioners are encouraged to combine content from this cluster across other CTE programs.

Pathways that students may pursue within the Digital Technology and Computer Science Career Cluster include:

- AP Computer Science
- CIE Computer Science
- Cisco Network Engineering
- Computer Engineering
- Computer Science Principles
- Data Science
- Network Administration
- Network Security
- Python Programming
- Unmanned Aircraft Systems

AP Computer Science Pathway

AP Computer Science Principles
Course Number: 0A02
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Computer Science A
Course Number: 2A02
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

CIE Computer Science Pathway

CIE Computer Science AS
Course Number: 0V08
Recommended Maximum Enrollment: 30
Hours of Instruction: 180 guided learning hours
Prerequisite: None
Description: CIE Computer Science AS introduces students to computational thinking by using a structured approach that includes the use of programming and problem-solving skills to provide solutions to real life problems. It requires the manipulation and storage of different types of data and the communication of solutions over networks. It encourages learners to think creatively, through applying practical programming solutions, demonstrating that they are effective users of technology.

CIE Computer Science A
Course Number: 0V09
Recommended Maximum Enrollment: 30
Hours of Instruction: 180 guided learning hours beyond the AS level
Prerequisites: None

Description: Computational thinking is further developed at A Level to extend methods for searching, sorting, structuring, and storage of data, including an understanding of Artificial Intelligence (AI). Students develop an in-depth understanding of how computer architecture, hardware, systems software, security measures and communication systems can have different structures and protocols. The syllabus encourages opportunities for students to apply their skills in a practical context that are required in the digital industry.

Cisco Network Engineering Pathway

Cisco Network Engineering Technology I Honors
Course Number: CI10
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: CI11
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CI10 Cisco Network Engineering Technology I Honors
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.

Computer Engineering Pathway

CompTIA IT Fundamentals
Course Number: CI00
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: CI01
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CI00 CompTIA IT Fundamentals
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 Honors
Course Number: CI02
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CI01 Computer Engineering Technology I Honors
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 Principles Pathway

Coding in Minecraft – Expert Coding
Course Number: CP05
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 pathway.

Computer Science I
Course Number: CS20
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

AP Computer Science Principles
Course Number: 0A02
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

Computer Science II
Course Number: CS21
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CS20 Computer Science I
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.

AP Computer Science A
Course Number: 2A02
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

Data Science Pathway

Introduction to Data Science
Course Number: CS30
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

SAS Base Programming Honors
Course Number: CS31
Recommended Maximum Enrollment: 20
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CS30 Introduction to Data Science
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.

AP Statistics
Course Number: 2A03
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

Network Administration Pathway

Network Administration I
Course Number: CI20
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: CI21
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CI20 Network Administration I
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.

Network Security Pathway

Cybersecurity I
Course Number: CI30
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: CI31
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CI30 Cybersecurity I
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.

Python Programming Pathway

Python Programming I
Course Number: CP10
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: CP11
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CP10 Python Programming I
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.

AP Computer Science A
Course Number: 2A02
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

Unmanned Aircraft Systems Pathway

Drone Technology Fundamentals
Course Number: ID10
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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
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 Honors
Course Number: ID12
Recommended Maximum Enrollment: 15
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: ID11 Drone Technology I
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.

MANAGEMENT AND ENTREPRENEURSHIP CAREER CLUSTER

The Management and Entrepreneurship Career Cluster involves skills and occupations that are essential across all industries, focusing on business administration, operations optimization, strategic planning, workforce management, and entrepreneurship. It merges key areas such as data management and analysis, human resources, general operations, administrative support, project management, and organizational leadership. This career cluster ensures that businesses across all industries efficiently meet their goals, adapt to market changes, and maintain competitive advantage. By emphasizing entrepreneurship, this career cluster supports the creation of new ventures, driving economic growth and innovation and making it a cornerstone of modern economies.

This career cluster is also a Connecting and Supporting Success cluster as the skills gained through this career clusters area are applicable across all career clusters. Practitioners are encouraged to combine content from this career cluster across other CTE programs.

Pathways that students may pursue within the Management and Entrepreneurship Career Cluster include:

- Business Ethics and Law
- Entrepreneurship
- General Management
- Office Administration
- Project Management

Business Ethics and Law Pathway

Business Ethics and Law I
Course Number: BB30
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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
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.

Entrepreneurship Pathway

Entrepreneurship I
Course Number: ME11
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
Description: Explore the characteristics of a successful entrepreneur and business. Discover the role and impact of marketing, finance, and ethics on business profitability. Develop an entrepreneurial business idea using the Lean Canvas Business Model. Gain the knowledge and skills required to develop the entrepreneurial mindset necessary in a variety of career pathways.

Entrepreneurship II Honors
Course Number: ME12
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: ME11 Entrepreneurship I
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 required to develop the entrepreneurial mindset necessary in a variety of career pathways.

General Management Pathway

Business Essentials
Course Number: BF10
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None

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 21st century. Gain the knowledge and skills for careers in multiple business pathways.

Business Management I
Course Number: BB40
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: BF10 Business Essentials
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.

IB Business Management
Course Number: BI50
Recommended Maximum Enrollment: 30
Hours of Instruction: 150
Prerequisite: BF10 Business Essentials
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.

Business Management II
Course Number: BB42
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: BB40 Business Management I
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.

Office Administration Pathway

Business Essentials
Course Number: BF10
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 21st century. Gain the knowledge and skills for careers in multiple business pathways.

Microsoft Word and PowerPoint
Course Number: CC10
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Office Administration pathway.

Microsoft Excel Honors
Course Number: CC11
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Office Administration pathway.

Adobe Visual Design I Honors
Course Number: CD10
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Graphic Design pathway.

Project Management I
Course Number: GS11
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Pathway

Project Management I
Course Number: GS11
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: GS12
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: GS11 Project Management I
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.

MARKETING AND SALES CAREER CLUSTER

The Marketing and Sales Career Cluster focuses on promoting products, understanding consumer needs, engaging with communities, and driving sales. It integrates digital marketing, data analysis, brand promotion, customer relationship management, strategic communications, human-centered design, and retail strategies to build strong customer connections and support business growth. This career cluster is essential in all industries for creating value, effectively reaching and engaging target audiences, and achieving commercial success in a competitive marketplace.

This career cluster is also a Connecting and Supporting Success Cluster as the skills gained through this career cluster area are applicable across all career clusters. Practitioners are encouraged to combine content from this cluster across other CTE programs.

Pathways that students may pursue within the Marketing and Sales Career Cluster include:

- Marketing Management
- Sales
- Sport and Event Marketing

Marketing Management Pathway

Marketing I
Course Number: MM51
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
Description: Explore the fundamentals of marketing and how they shape business strategies focusing on the four Ps: Product, Place, Price, and Promotion. Learn how marketing segmentation, branding, and product positioning influence customer buying decisions and behavior. Use marketing concepts to develop a new consumer product, highlighting product development proficiency. 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
Description: Understand the key components of the marketing mix. Explore the marketing research process, marketing communications, and marketing research data. Apply knowledge to prepare a strategic marketing plan. Gain knowledge and skills for careers in marketing.

Sales Pathway

Sales I
Course Number: MI31
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
Description: Explore the fundamentals of effective selling and how it contributes to building lasting customer relationships. Learn emerging trends in sales, exploring their impact on the sales process and how to adapt to changes in the marketplace. Understand the role of data in making informed decisions and how to respond appropriately to customer needs throughout the sales process. 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
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 Pathway

Sport and Event Marketing I
Course Number: MH31
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: MH32
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: MH31 Sport and Event Marketing I

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.

CREATING AND EXPERIENCING CAREER CLUSTER GROUPING

Within the Creating and Experiencing Career Cluster Grouping, the Career Clusters that students may choose from include:

- Arts, Entertainment, and Design
- Hospitality, Events, and Tourism

ARTS, ENTERTAINMENT, AND DESIGN CAREER CLUSTER

The Arts, Entertainment, and Design Career Cluster combines creative roles in visual and performing arts, film, journalism, fashion, interior design, and creative technologies. This career cluster focuses on creating, producing, and sharing artistic and design work across multiple platforms, aiming to entertain, inform, beautify, and inspire.

Pathways that students may pursue within the Arts, Entertainment, and Design Career Cluster include:

- 3D Modeling and Animation
- Adobe Graphic Design
- Adobe Video Design
- Fashion Merchandising
- Fashion and Textile Design
- Game Art Design
- Interior Design

3D Modeling and Animation Pathway

3D Modeling and Animation I
Course Number: CD20
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 and Animation 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
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.

Adobe Graphic Design Pathway

Adobe Visual Design I Honors
Course Number: CD10
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Graphic Design pathway.

Adobe Visual Design II Honors
Course Number: CD11
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CD10 Adobe Visual Design I Honors
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 Arts, Entertainment, and Design Career Cluster.

Adobe Video Design Pathway

Adobe Video Design I
Course Number: CD14
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None

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
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.

Fashion Merchandising Pathway

Fashion and Textiles I - Fundamentals
Course Number: FA07
Recommended Maximum Enrollment: 20
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 and Textiles II - Merchandising
Course Number: FA09
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: FA07 Fashon and Textiles I - Fundamentals
Description: Examine information about a brand's target consumer and relate the impact on brand decisions. Use retail math and digital tools to help maximize profits. Design appealing and effective store displays that optimize sales of fashion products. Gain the knowledge and skills for careers in fashion merchandising.

Fashion and Textile Design Pathway

Fashion and Textiles I - Fundamentals
Course Number: FA07
Recommended Maximum Enrollment: 20
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 and Textiles II - Design
Course Number: FA08
Recommended Maximum Enrollment: 20
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: FA07 Fashon and Textiles I - Fundamentals
Description: Design a small, coordinated fashion collection that utilizes design principles and appropriate textiles. Learn new sewing skills and construct projects using suitable textiles. Make alterations for better fit to patterns and ready-to-wear clothing. Gain the knowledge and skills for careers in fashion, textiles, and design.

Game Art Design Pathway

3D Modeling and Animation I
Course Number: CD20
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

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

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.

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
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.

Interior Design Pathway

Interior Design I - Fundamentals
Course Number: FI21
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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
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 Honors
Course Number: FI23
Recommended Maximum Enrollment: 20
Hours of Instruction: 135 (block) 150 (regular)

Prerequisite: FI21 Interior Design I Fundamentals

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.

HOSPITALITY, EVENTS, AND TOURISM CAREER CLUSTER

The Hospitality, Events, and Tourism Career Cluster encompasses a broad range of services and experiences related to food and beverage, lodging, travel, events, and conferences. This career cluster focuses on delivering quality customer service, memorable experiences, and seamless logistics to cater to the needs and preferences of guests, tourists, and event participants. The career cluster is characterized by its diversity, including everything from luxury hotels and international travel to local dining, cultural events, and business conferences, aiming to enhance the overall experience of visitors and attendees.

Pathways that students may pursue within the Hospitality, Events, and Tourism Career Cluster include:

- Culinary Arts Applications
- Culinary Arts Internship
- Hospitality and Tourism Management

Culinary Arts Applications Pathway

Culinary Arts and Hospitality I
Course Number: FH10
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: FH11
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: FH10 Culinary Arts and Hospitality I
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 III Honors
Course Number: FH13
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: FH11 Culinary Arts and Hospitality II Applications Honors OR FH12 Culinary Arts and Hospitality II Internship Honors
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 Honors
Course Number: FH14
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: FH13 Culinary Arts and Hospitality III Honors
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.

Culinary Arts Internship Pathway

Culinary Arts and Hospitality I
Course Number: FH10
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Internship Honors
Course Number: FH12
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: FH10 Culinary Arts and Hospitality I

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 Honors
Course Number: FH13
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: FH11 Culinary Arts and Hospitality II Applications Honors OR FH12 Culinary Arts and Hospitality II Internship Honors
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.

Hospitality and Tourism Management Pathway

Hospitality and Tourism Management I
Course Number: FH31
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
Description: Recognize the structure of and career opportunities in the hospitality and tourism industry. Identify the skill set needed to ensure a positive guest experience. Engage in exceptional guest service practices. Understand the factors that impact the overall success of a business. 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
Description: Demonstrate skills for career advancement within various industry sectors. Identify the interdependence between industry sectors and event management. Use marketing techniques to effectively promote a business. Understand financial management and its impact on business success. Gain the knowledge, skills, and industry credential for careers in hospitality and tourism management.

CULTIVATING RESOURCES CAREER CLUSTER GROUPING

Within the Cultivating Resources Career Cluster Grouping, the Career Clusters that students may choose from include:

- Agriculture
- Energy and Natural Resources

AGRICULTURE CAREER CLUSTER

The Agriculture Career Cluster concentrates on scientific advancement of agriscience, cultivation, processing, and distribution of agricultural products, employing advanced technologies and sustainable practices to optimize global food systems. This career cluster also supports other plant- and animal-based industries including regenerative agriculture, sustainable logging, and fisheries. This career cluster has meaningful connections with the Energy and Natural Resources Career Cluster, highlighting a symbiotic relationship that emphasizes stewardship and resilient communities.

Pathways that students may pursue within the Agriculture Career Cluster include:

- Animal Science
- Equine Science
- Food Products and Processing Systems
- Plant Systems
- Power, Structural, and Technical Systems
- Sustainable Agriculture

Animal Science Pathway

Animal Science I
Course Number: AA21
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 – Food Animal Honors
Course Number: AA22
Recommended Maximum Enrollment: 25*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: AA21 Animal Science I
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.
* For safety reasons, enrollment should not exceed 25 students.

Animal Science II – Companion Animal
Course Number: AA23
Recommended Maximum Enrollment: 25*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: AA21 Animal Science I
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.
* For safety reasons, enrollment should not exceed 25 students.

Veterinary Assisting Honors
Course Number: AA41*
Recommended Maximum Enrollment: 15**
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: AA22 Animal Science II – Food Animal Honors or AA23 Animal Science II - Companion Animal or AA32 Equine Science II Honors
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 Equine Science pathway.
* This course is designed for 11th or 12th grade students with an interest in animal medicine.
** For safety reasons, enrollment should not exceed 15 students.

Equine Science Pathway

Equine Science I
Course Number: AA31
Recommended Maximum Enrollment: 25*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.
* For safety reasons, enrollment should not exceed 25 students.

Equine Science II Honors
Course Number: AA32
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: AA31 Equine Science I
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.
* For safety reasons, enrollment should not exceed 20 students.

Veterinary Assisting Honors
Course Number: AA41*
Recommended Maximum Enrollment: 15**
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: AA22 Animal Science II – Food Animal Honors or AA23 Animal Science II - Companion Animal or AA32 Equine Science II Honors
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 11th or 12th grade students with an interest in animal medicine.
** For safety reasons, enrollment should not exceed 15 students.

Food Products and Processing Systems Pathway

Food and Nutrition I
Course Number: FN41
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Science and Technology Honors
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
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.

Plant Systems Pathway

Horticulture I – Introduction to Plants
Course Number: AP41
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 - Landscape Construction Honors
Course Number: AP44
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: AP41 Horticulture I - Introduction to Plants

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.
* For safety reasons, enrollment should not exceed 20 students.

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
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.
* For safety reasons, enrollment should not exceed 20 students.

Power, Structural, and Technical Systems Pathway

Agricultural Mechanics I
Course Number: AS31
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.
* For safety reasons, enrollment should not exceed 20 students.

Agricultural Mechanics II Honors
Course Number: AS32
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: AS31 Agricultural Mechanics I

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.
* For safety reasons, enrollment should not exceed 20 students.

Agricultural Mechanics II - Small Engines Honors
Course Number: AS33
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: AS31 Agricultural Mechanics I
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.
* For safety reasons, enrollment should not exceed 20 students.

Sustainable Agriculture Pathway

Sustainable Agriculture Production I
Course Number: AU21
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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

Description: Enhance knowledge of 21st 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.

ENERGY AND NATURAL RESOURCES CAREER CLUSTER

The Energy and Natural Resources Career Cluster spans careers in traditional and renewable fuel production, power generation and energy conversion, utilities, environmental preservation, ecological research, and resource extraction. These industries focus on efficient and responsible resource management, including conservation, transmission, distribution, and storage, to minimize environmental impacts and meet global energy needs. Careers in this cluster are dedicated to creating a sustainable future, innovating cleaner energy solutions, and preserving our planet's natural resources for generations to come.

Pathways that students may pursue within the Energy and Natural Resources Career Cluster include:

- Clean Energy Technology
- Energy and Power
- Innovations in Science and Technology
- Natural Resources
- Solar Photovoltaics

Clean Energy Technology Pathway

SREB AC Clean Energy Technology I – Clean Energy Systems Honors
Course Number: TR31
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
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 Honors

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 Honors
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 Honors
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 Honors
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 Honors
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.

Energy and Power Pathway

SREB AC Energy and Power Foundations Honors
Course Number: TR21
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None

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 Honors
Course Number: TR22
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: TR21 SREB AC Energy and Power Foundations Honors
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 Honors
Course Number: TR23
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: TR22 SREB AC Energy Transmission and Distribution Honors
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 Honors
Course Number: TR24
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: TR23 SREB AC Electronics and Control Systems Honors
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.

Innovations in Science and Technology Pathway

SREB AC IST Nature of Science and Technology Honors
Course Number: CR15
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: CR16
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: CR15 SREB AC IST Nature of Science and Technology Honors

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.

Natural Resources Pathway

Natural Resources I
Course Number: AN51
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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
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

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.
* For safety reasons, enrollment should not exceed 20 students.

Solar Photovoltaics Pathway

Construction Core
Course Number: IC00
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

Solar Photovoltaics I
Course Number: IC71
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC00 Construction Core
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

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.

INVESTING IN THE FUTURE CAREER CLUSTER GROUPING

Within the Investing in the Future Career Cluster Grouping, the Career Cluster that students may select is Financial Services.

FINANCIAL SERVICES CAREER CLUSTER

The Financial Services Career Cluster encompasses careers in managing and advising financial transactions, including banking, lending, corporate finance, debt management, accounting, insurance, and real estate. These careers contribute to economic stability and growth by supporting the financial health of individuals and organizations.

Pathways that students may pursue within the Financial Services Career Cluster include:

- Accounting
- Economics
- Financial Planning

Accounting Pathway

Accounting I
Course Number: BA10
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Honors
Course Number: BA20
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: BA10 Accounting I
Description: Develop advanced accounting skills and build upon foundational principles to gain comprehensive knowledge of departmentalized and corporate accounting procedures while integrating industry-standard software. Explore advanced financial management concepts including corporate transactions and advanced financial analysis, while simultaneously developing practical skills in digital accounting systems. Gain the knowledge and skills for careers in accounting.

CIE Accounting AS
Course Number: 0V07
Recommended Maximum Enrollment: 30
Hours of Instruction: 180 guided learning hours beyond the AS level
Prerequisite: None
Description: CIE Accounting AS enables learners to 1) understand the role of accounting as an information system for monitoring, problem-solving and decision-making; 2) appreciate the ethical issues that underpin the practice of accounting and their impact on the behavior of the accountant and of businesses; 3) appreciate the place of accounting in managing business change in response to economic, social and technological developments; 4) develop the ability to apply and evaluate accounting concepts, principles, policies and practices; 5) develop skills of communication, analysis, interpretation and presentation of both qualitative and quantitative accounting information; and 6) develop skills and knowledge needed for further study or employment in accounting or business.

Economics Pathway

Business Essentials
Course Number: BF10
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 21st century. Gain the knowledge and skills for careers in multiple business pathways.

AP Macroeconomics
Course Number: 4A03
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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
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.

Financial Planning Pathway

Business Essentials
Course Number: BF10
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 21st century. Gain the knowledge and skills for careers in multiple business pathways.

Financial Planning I
Course Number: BF21
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: BF10 Business Essentials
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

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.

SUPPLEMENTAL EMPLOYABILITY SKILLS COURSES

Career Management
Course Number: ED45
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

IB Personal and Professional Skills
Course Number: 0I00
Recommended Maximum Enrollment: 30
Hours of Instruction: 150
Prerequisite: None
Description: Students develop attitudes, skills, and strategies to be applied to personal and professional situations and contexts now and in the future.

SUPPLEMENTAL TECHNICAL COURSES

Artificial Intelligence I
Course Number: CA10
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Digital Technology and Computer Science Career Cluster.

CIE Travel and Tourism AS
Course Number: 0V06
Recommended Maximum Enrollment: 30
Hours of Instruction: 180 guided learning hours
Prerequisite: None
Description: CIE Travel and Tourism AS enables learners to investigate changes in travel and tourism and to appreciate the importance of sustainability. By working as a team to plan and manage a travel and tourism event, learners adopt a set of transferable, vocationally relevant skills. Learners acquire an enriched understanding of the development, management and marketing of travel and tourism destinations. Developing critical thinking, independent research, communication and time management capabilities equip learners well for progression into higher education or directly into employment.

Foundations of Agriculture
Course Number: AU10
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 agriculture, energy, and natural resources.

Foundations of Health Science
Course Number: HU10
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None

Description: Explore medical history from the primitive era to the 21st 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 Healthcare and Human Services Career Cluster.

IB Computer Science HL
Course Number: 2I01
Recommended Maximum Enrollment: 30
Hours of Instruction: 240
Prerequisite: None
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
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
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
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 Economics HL
Course Number: 4I02
Recommended Maximum Enrollment: 30

Hours of Instruction: 150
Prerequisite: None
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
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).

IB Information Technology in a Global Society
Course Number: BI05
Recommended Maximum Enrollment: 30
Hours of Instruction: 150
Prerequisite: None
Description: Students examine individuals and societies. The course uses an integrated approach, encouraging students to make informed judgements and decisions about the role of information and communication technologies in contemporary society.

IB Sports Exercise and Health Science HL
Course Number: 3I10
Recommended Maximum Enrollment: 30
Hours of Instruction: 240
Prerequisite: None
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
Description: Students explore the concepts, theories, models, and techniques that underpin each subject area and through these, develop their understanding of the scientific method.

Introduction to Computer Science
Course Number: CS10
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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 Digital Technology and Computer Science Career Cluster.

PLTW Cybersecurity
Course Number: CI35
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

Principles of Family and Human Services
Course Number: FC11
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
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.

APPENDIX A: 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 status is primarily used 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 status 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.