

NORTH CAROLINA CTE Course Inventory

CAREER AND TECHNICAL EDUCATION

2027-2028



BUILDING & MOVING

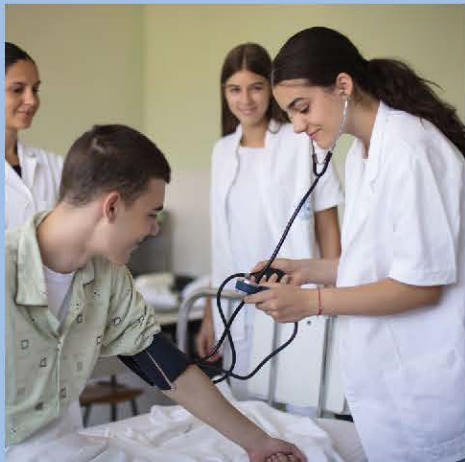
Advanced Manufacturing
Construction
Supply Chain & Transportation

CARING FOR COMMUNITIES

Education
Healthcare & Human Services
Public Service & Safety

CONNECTING & SUPPORTING SUCCESS

Digital Technology &
Computer Science
Management & Entrepreneurship
Marketing & Sales



CREATING & EXPERIENCING

Arts, Entertainment, & Design
Hospitality, Events, & Tourism



CULTIVATING RESOURCES

Agriculture
Energy & Natural Resources

INVESTING IN THE FUTURE

Financial Services



North Carolina Department of
PUBLIC INSTRUCTION



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 July 2027.

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INTRODUCTION

CAREER AND COLLEGE READY

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

Career and Technical Education plays an increasingly important role in school improvement efforts. Students who concentrate in a CTE pathway, earning at least two related technical credits, are better prepared for post-secondary education and advanced training required for success in today's workforce. CTE educators at the state and local levels collaborate with business and industry, community colleges, and other post-secondary partners to ensure programs remain aligned with workforce needs and provide meaningful opportunities for students. 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.

COURSE INVENTORY

The 2027 CTE Course Inventory document was approved by the North Carolina State Board of Education in July 2026 and goes into effect for the 2027-2028 academic year. This document includes all courses offered by NCCTE, along with their respective pathways, course descriptions, and other relevant information.

Public School Unit (PSU) CTE administrators collaborate with local schools to select courses that best meet student needs and also align with local labor market needs.

Each year, pathways, courses, standards, credentials, and assessment details are updated on the NCCTE Course Management System (CMS). During development, some courses may be designated as pilot or field test to support evaluation and validation efforts.

For specific information about pathways, courses, and standards, please refer to the NCCTE Course Management System website.

Career and Technical Education in the North Carolina Department of Public Instruction is responsible for managing courses in the Course Inventory, with the exception of 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 in the Course Inventory:

1. **Developed courses:**

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

2. Adapted courses:

In some cases, curriculum is available from multiple vendors and standards are needed to direct student learning. Adapted course standards are then developed and are often used when an industry credential is available for the course.

3. Adopted courses:

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. 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 LCO must be approved before it is advertised and offered to students. More information about Local Course Options is found in Appendix A.

CAREER CLUSTERS AND PROGRAMS OF STUDY

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

Originally established in 2002 through a partnership between states and the federal government and facilitated by Advance CTE, the Framework has been widely adopted across all 50 states and internationally. In 2022, Advance CTE launched a multiyear initiative to modernize the Framework. North Carolina will implement this updated Framework beginning in the 2026–2027 school year.

All North Carolina CTE courses align to this modernized Framework. Courses are organized into Career Clusters based on shared knowledge and skills across related careers. These industry-validated expectations define what students should know and be able to do, preparing them for a wide range of career opportunities. Some CTE courses cross over multiple Career Clusters.

The modern Framework consists of 14 Career 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 Cluster Grouping (which includes three Cross-Cutting Clusters) that provide both skills and careers that can stand alone and intersect with all other Clusters.

Federal law requires each school receiving Perkins funds to offer at least one Program of Study (POS), referred to as pathways in North Carolina. PSUs must offer a minimum of three Programs of Study to receive funding. A Program of Study provides a clear pathway for students to reach their career goals through secondary CTE courses, opportunities for post-secondary credit while in high school, and academic coursework, combined with a smooth transition to post-secondary education and advanced training. Students create 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 post-secondary 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.

For students, earning an industry-recognized credential provides opportunities to:

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

With over 190 available credentials, student opportunities are abundant! Refer to the [NCCTE Course Management System \(CMS\)](#) for the current list of course-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. CTOS 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 CTOS 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 350,000 members globally. More than 100 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



North Carolina's CTE system integrates Work-based Learning (WBL) as a fundamental educational strategy with deep historical roots. WBL provides students with meaningful, hands-on experiences that bridge academic and technical skills with essential employability skills. Aligned with the Career Development Continuum — **Awareness, Exploration, Preparation, and Participation** — WBL strategies across all CTE Pathways support students in navigating career stages and making informed postsecondary choices. This approach emphasizes career development, fosters durable employability skills, and cultivates positive work attitudes.

Successful WBL implementation relies on strong collaborations among schools, employers, and community partners. The **Work-based Learning Resource Manual**, available on the [NCDPI Career Development and Work-based Learning website](#), serves as a comprehensive resource for stakeholders, educators, parents, students, businesses, and industry, offering support in the integration of WBL experiences.

As a cornerstone for CTE courses, WBL provides students with hands-on experiences that bridge academic learning with industry skills. By immersing students in real-world settings, WBL empowers them to become active participants in the global economy and prepare for success in the ever-evolving workforce. The [Work-based Learning Cycle of Experiences framework](#) provides a gradual progression of opportunities for students to explore their talents, strengths, and interests, spanning from elementary through high school and beyond.

Awareness	Exploration	Preparation	Participation
Guest speaker	Job shadowing	School-based enterprise	CTE Cooperative Education *
Career fair	Mentoring	Simulated workplace	CTE Internship *
Job fair	Service learning	Workplace challenge (Industry-sponsored project)	CTE Pre-apprenticeship *
Transition fair		CTE Entrepreneurial Experience *	CTE Apprenticeship*
Field trip (Workplace tour)			

* Academic credit-bearing course

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 Career 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 practicum.

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 North Carolina 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 (CONS), WS05 (DTCS), 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 post-secondary 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 post-secondary 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 (CONS), WA05 (DTCS), 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 post-secondary 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 post-secondary 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 (CONS), WO05 (DTCS), 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 (CONS), WE05 (DTCS), 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 (CONS), WI05 (DTCS), 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 post-secondary 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 (CONS), WP05 (DTCS), 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 post-secondary 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 post-secondary 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 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: Build the skills needed to navigate the online world with confidence and care. Practice respectful and safe online communication, explore how digital actions create a lasting digital footprint, and learn how to evaluate online information for trustworthiness. Develop a balanced approach to screen time, school, relationships, and everyday life. Prepare to make thoughtful choices regarding artificial intelligence and act responsibly as digital citizens in an increasingly connected world.

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. Investigate 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: Discover the fundamentals of the animal and plant industries 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 knowledge and skills for careers in agriculture.

Exploring Fashion and Interior Design

Course Number: FY12

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Learn to speak the language of fashion and interior design. Explore the importance of well designed living spaces. Develop basic sewing skills. Gain the knowledge and skills for careers in fashion 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 Computer Science

Course Number: CY90

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Design and code interactive projects that solve real problems and express creative ideas. Analyze and visualize data to discover patterns and make informed decisions. Practice safe, responsible, and ethical technology use while collaborating to design inclusive digital solutions. Gain the knowledge and skills for careers in the Digital Technology and Computer Science Career Cluster.

Exploring Digital Arts

Course Number: CY95

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Explore the many ways digital art shapes our world through media, entertainment, business, and everyday communication. Discover how organizations use digital arts and media to influence decisions and connect with audiences. Learn to create original works using tools such as podcasting, video production, 3D design, and photography. Investigate careers in the digital arts and media industry while building creative and technical skills for future success. Gain the knowledge and skills for careers in digital arts and media production.

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 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 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: Participate in hands-on activities that convert agricultural products into food and fiber to become a more informed consumer. 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 knowledge and skills for careers in agriculture.

Exploring Leadership

Course Number: EY13

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Plan and bring to life a service project while building leadership and life skills such as communication, self-awareness, collaboration, critical thinking and problem-solving. Identify a need, set a S.M.A.R.T. goal, and write a proposal to pitch the idea and get buy-in. Implement an action plan with hands-on community impact and reflect on the project outcome to identify opportunities to grow and improve.

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 Dietary Guidelines for Americans. 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 Robotics

Course Number: CY92

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Explore how robots help people and solve real-world problems in different industries. Explain how the engineering design process is used to safely design, build, and improve simple robots. Describe how simple code controls how robots move and respond to their environment. Gain the knowledge and skills for careers in the Digital Technology and Computer Science Career Cluster.

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. Investigate how agricultural stewardship supports economic viability and social well-being through hands-on learning. 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 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: Create mobile apps using pair programming, MVC design, event-driven programming, and debugging to build biomedical tools, animations, and interactive games. Build gameplay and user-centered design features by implementing loops, conditionals, lists, and procedures to streamline and improve existing apps. Design meaningful app solutions by applying computational thinking to address personal or community problems such as health, safety, education, or local needs. Gain the knowledge and skills for careers in the Engineering pathway.

PLTW Gateway: Automation and Robotics

Course Number: CY61

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Engineer automated mechanical systems by designing, building, and programming mechanisms such as gear trains, dragsters, pet-enrichment devices, or safety signage. Integrate sensors and control logic by applying optical sensors, programmed inputs and outputs, and increasingly complex mechanical prototypes to meet community needs. Create fully automated solutions by coordinating motors, sensors, building components, and code to address self-selected real-world challenges. Gain the knowledge and skills for careers in the Engineering pathway.

PLTW Gateway: Computer Science for Innovators and Makers

Course Number: CY63

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Program microcontrollers using block-based coding to create animations, debug pre-bugged programs, and develop interactive physical computing outputs. Design custom input devices—using conductive thread, copper tape, paint, and sensors—to build systems that protect items, trigger actions, or interact with their environment. Develop real-world physical computing solutions through team projects, such as wearable safety devices, interactive community art, or assistive mechanical dispensers. Gain the knowledge and skills for careers in the Engineering pathway.

PLTW Gateway: Design and Modeling

Course Number: CY60

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Apply the engineering design process to solve authentic problems by sketching, prototyping, measuring, and analyzing designs—including an ankle-foot orthosis challenge. Model solutions using CAD by transforming sketches into precise 3D representations, fabricating prototypes, and using mathematical analysis to validate design performance. Engineer assistive technology by designing therapeutic toys or devices for children with cerebral palsy, collecting user requirements, and iterating based on testing data. Gain the knowledge and skills for careers in the Engineering pathway.

PLTW Gateway: Energy and the Environment

Course Number: CY64

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Evaluate global and local energy challenges by studying energy production, environmental impacts, and the science behind alternative and renewable energy systems. Design sustainable energy solutions by modeling wind, solar, geothermal, hydropower, or biomass systems to address real-world energy problems and reduce human environmental impact. Analyze personal and community energy use by identifying conservation strategies, evaluating consumption patterns, and proposing behaviors that reduce resource demand. Gain the knowledge and skills for careers in the Engineering pathway.

PLTW Gateway: Flight and Space

Course Number: CY65

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Design aircraft prototypes by applying aerodynamic concepts, testing airfoils, planning navigation routes, and solving real aviation challenges such as crew scheduling and maintenance scenarios. Investigate space systems by exploring launch physics, orbital motion, astronaut health, and environmental controls, then engineering improved prototypes of space-related systems. Model mission-critical components for Mars exploration by designing rockets, landing vehicles, crew assignments, and habitat planning elements in team-based scenarios. Gain the knowledge and skills for careers in the Engineering pathway.

PLTW Gateway: Building for the Future

Course Number: CY68

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Construct hands-on structural models by interpreting floor plans, applying measurement and scaling skills, and transforming 2D designs into 3D framed structures. Design sustainable solutions by evaluating environmental impacts, experimenting with material choices, and constructing mock systems such as blue-green roofs. Manage a construction project from concept to completion by coordinating trade tasks, sequencing work, and building a scaled structural prototype that reflects industry practices. Gain the knowledge and skills for careers in the Engineering pathway.

PLTW Gateway: Magic of Electrons

Course Number: CY67

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Explore foundational electricity concepts by investigating atomic structure, power generation, and real-world applications to understand how electrical energy impacts everyday life. Create and analyze electronic circuits by reading and producing circuit diagrams, working with basic components, and modeling how electron flow enables modern devices. Investigate digital electronics by applying binary logic and examining how 0s and 1s drive technologies such as computers, phones, and digital systems. Gain the knowledge and skills for careers in the Engineering pathway

PLTW Gateway: Medical Detectives

Course Number: CY69

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Diagnose medical mysteries by collecting and interpreting vital signs, identifying infectious agents, and conducting antibiotic-effectiveness experiments. Investigate community health threats by interpreting lab samples, tracking toxin exposure, and mapping outbreak patterns to determine sources and spread. Communicate medical findings through evidence-based explanations, patient education materials, and presentations that mirror real healthcare practices. Gain the knowledge and skills for careers in the Biotechnology Research and Development pathway.

PLTW Gateway: Science of Technology

Course Number: CY66

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Description: Apply chemistry concepts by creating adhesives, making ice cream, and engineering oil-spill cleanup solutions that model real chemical engineering challenges. Explore nanotechnology by experimenting with nanomaterials, investigating their properties, and discovering how nanoscale innovations shape modern engineering. Understand applied physics by analyzing simple machines, mechanical motion, and mechanisms that power modern tools and technologies. Gain the knowledge and skills for careers in the Engineering pathway.

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
- Engineering Design Graphics
- Engineering
- Integrated Production Technologies
- Technology Engineering and Design

Aerospace Engineering Pathway

The Aerospace Engineering pathway engages students who are curious about aviation and aerospace careers through a sequence of project-based learning experiences that introduce and extend the engineering design process, data analysis tools, and foundational concepts in the science of aviation, materials, structures, and safety. Students participate in real-world, hands-on projects such as designing, building, and testing pilot seats, kites, rockets, wings, and electric-powered aircraft while applying increasingly advanced design principles and exploring quality control systems. Working collaboratively in teams, students manage projects, think critically, and solve complex problems by proposing innovative solutions to authentic design challenges. They apply literacy, mathematics, and science concepts to collect and analyze data, optimize designs, and use technology to effectively solve real-world problems in partnership with business and industry professionals. Students also develop communication skills by presenting their ideas, techniques, and solutions to authentic audiences. Through this pathway, students explore the future of the aerospace

industry while developing the habits of mind and behaviors unique to the field, including creativity, precision, adaptability, and systems thinking.

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

The Automated Materials Joining pathway spans four courses that guide students from foundational concepts to advanced applications in materials joining and automated manufacturing systems. Through project-based learning, students develop skills in computer-aided design, materials science, automation, and the engineering design process while using industry relevant tools. Throughout the pathway, learners design, build, and test products while strengthening teamwork, project management, critical thinking, and technical communication skills. This pathway prepares students for careers such as control systems engineer, robotics welder, materials joining engineer, avionics technician, and metals or plastics machinist.

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.

Engineering Design Graphics Pathway

The Engineering Design Graphics pathway spans three courses progressing from foundational skills to advanced engineering design applications. Students begin by exploring architectural and engineering career options while developing fundamental sketching and CAD skills to produce basic technical drawings. As they advance, students apply design principles, 3D solid modeling, parametric modeling, and conventional and geometric dimensioning and tolerancing techniques to create detailed parts, assemblies, and working drawings. Throughout the pathway, students gain industry-relevant knowledge and technical credentials that prepare them for careers such as architectural drafter, mechanical drafter, CAD designer, engineering technician, and manufacturing engineer.

Fundamentals of Design Graphics 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.

Engineering Design Graphics I Honors

Course Number: IV22

Recommended Maximum Enrollment: 25

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

Prerequisite: IC61 Fundamentals of Design Graphics 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.

Engineering Design Graphics II Honors

Course Number: IV23

Recommended Maximum Enrollment: 25

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

Prerequisite: IV22 Engineering Design Graphics I 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

The Engineering pathway spans foundational through capstone Project Lead the Way (PLTW) courses, beginning with Engineering Essentials and Introduction to Engineering Design and progressing to specialized studies in principles of engineering, digital electronics, manufacturing, civil engineering and architecture, aerospace engineering, environmental sustainability, and a culminating capstone experience. Students apply the engineering design process, 3D modeling, circuit design, robotics, automation, and systems thinking to solve complex, real-world problems while reinforcing mathematics, science, communication, and technical documentation skills. Emphasizing research and development, safety, quality control, efficiency, and innovation, learners design, test, and refine solutions that reflect modern industry practices in advanced manufacturing and engineering fields. This pathway prepares students for careers such as mechanical engineer, electrical engineer, aerospace engineer, civil engineer, manufacturing engineer, robotics technician, systems engineer, and other high-demand engineering and technology professions within the Advanced Manufacturing Career Cluster.

PLTW Engineering Essentials

Course Number: CE12

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Description: Design engineering solutions to real-world community and global problems by applying the engineering design process, systems thinking, GIS tools, and 3D modeling to create ethical and sustainable concepts. Model mechanical systems using conceptual, mathematical, CAD, and physical prototypes to test motion, mechanical advantage, and system performance. Develop electronic and electromechanical prototypes by analyzing circuits, designing logic systems, and integrating sensors and actuators to address user needs. Gain the knowledge and skills for careers in the Engineering pathway.

PLTW Introduction to Engineering Design Honors

Course Number: CE10

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Description: Create engineered products by applying the engineering design process, technical sketching, CAD modeling, and iterative prototyping with 3D printing. Analyze and improve multi-component mechanical systems through reverse engineering, material testing, assembly modeling, and manufacturability evaluation. Apply human-centered and sustainable design principles by researching user needs, assessing product life cycles, and optimizing design solutions using generative CAD tools. Gain the knowledge and skills for careers in the Engineering pathway.

PLTW Principles of Engineering

Course Number: CE11

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Description: Construct mechanical and robotic systems by applying principles of simple machines, mechanisms, programming, and sensors to solve authentic engineering challenges. Program robots and AI-driven devices using conditional logic, sensor integration, and supervised machine learning to develop autonomous or behavior-based systems. Investigate energy systems through hands-on circuit design, fluid power modeling, and kinematics experiments to derive formulas, optimize performance, and solve engineering problems. Gain the knowledge and skills for careers in the Engineering pathway.

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: Build foundational circuit competency by distinguishing analog vs. digital systems, applying Ohm's Law, and instrumenting circuits with multimeters and simulations. Design efficient combinational logic using Boolean reduction, Karnaugh maps, and universal NAND/NOR implementations, then prototype with discrete components or PLDs. Engineer sequential logic behaviors with flip-flops and counters by specifying timing, memory, and state transitions to create robust event-driven circuits. Gain the knowledge and skills for careers in the Engineering pathway.

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: Model modern manufacturing systems by exploring historical and current manufacturing processes, control systems, and cost optimization through hands-on system design. Program robotic and automated systems by creating sequences for robotic arms, modeling fluid-power tasks, and integrating robots with multi-device control systems. Integrate full manufacturing systems by designing, building, and programming a flexible manufacturing model that simulates real-world production processes. Gain the knowledge and skills for careers in the Engineering pathway.

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: Design code-compliant residential projects by applying sustainable and universal design principles, performing cost/energy analyses, and documenting models in 3D software. Plan site layouts through surveying, soils evaluation, parking/traffic flow design, accessibility compliance, and stormwater management calculations. Deliver a team commercial renovation from concept to crit-ready presentation using project management (Gantt), stakeholder interviews, and full architectural documentation. Gain the knowledge and skills for careers in the Engineering pathway.

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: Design air and space flight solutions by modeling airfoils, testing composites, and optimizing propulsion (rockets, thrust) with simulation and hands-on builds. Plan and navigate missions using flight simulators, GPS routing, and air traffic coordination scenarios that mirror real operational constraints. Model orbital mechanics and space systems by applying Kepler's laws in professional tools (e.g., STK), then mapping terrain and executing autonomous rover operations. Gain the knowledge and skills for careers in the Engineering pathway.

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: Investigate global sustainability challenges by analyzing real-world issues in water, food, and energy systems, and applying biological and environmental engineering principles to propose solutions. Engineer water treatment solutions by modeling natural water systems, performing chemical and biological water quality testing, and designing deployable purification systems for disaster zones. Design genetically modified foods through DNA extraction, PCR, gel electrophoresis, bacterial transformation, and development of engineered plant-based solutions to food security challenges. Gain the knowledge and skills for careers in the Engineering pathway.

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: Define open-ended engineering, biomedical, or computer science problems by conducting research, validating problem need, and developing justified project proposals. Design innovative solutions through iterative concept generation, analysis, and application of STEM principles while collaborating with mentors and industry experts. Prototype and test solutions by creating physical or virtual models, implementing unbiased test plans, collecting data, and evaluating performance against design requirements. Present and defend their final engineered solution through professional technical communication, stakeholder review, and preparation for college and career pathways.

Integrated Production Technologies Pathway

The Integrated Production Technologies pathway spans a four course sequence, from Integrated Production Technologies I through Integrated Production Technologies IV, guiding students from foundational concepts to advanced manufacturing applications. Students develop skills in 3D CAD design, automation, robotics, programmable logic control (PLC), and data acquisition while applying industry standards for design, quality control, and documentation. Throughout the pathway, learners explore lean and green manufacturing practices, prototype development, and the integration of control systems and CNC machining to create efficient production processes. This pathway prepares students for careers such as manufacturing engineer, automation technician, CNC machinist, industrial engineer, and production manager.

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.

Technology Engineering and Design Pathway

The Technology Engineering and Design pathway prepares students for careers in engineering, automation, and modern production. Students use the engineering design process and contemporary project management practices to solve real-world technology challenges while building foundational engineering, computer science and problem-solving skills. They explore different engineering disciplines, examine how industrial factors impact design, and apply scientific principles and material science concepts to evaluate design requirements and determine optimal solutions. Students use Computer-Aided Design (CAD) to create sketches, technical drawings, and 3D digital models while analyzing how material selection affects structural performance and product quality. Through hands-on experiences, they design circuits, program microcontrollers, build functional robotic systems, and explore emerging technologies such as virtual reality, augmented reality, and 360° photography to develop innovative solutions. Through troubleshooting and experimentation, students develop the technical knowledge and problem-solving skills essential for careers in related engineering fields.

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 ideas into sketches, drawings, and 3D models. Build towers, bridges, and concrete structures to understand how materials impact performance. Gain experience using microcontrollers and coding with TinkerCAD Circuits to build a robot. Explore emerging technologies through solving a real-world problem. 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:

- Architectural Design Graphics
- Carpentry
- Electrical Trades
- HVACR
- Masonry
- Plumbing
- Welding
- Woodworking

Architectural Design Graphics Pathway

The Architectural Design Graphics pathway spans three courses guiding students from foundational drafting skills to advanced residential design. Students begin by exploring architectural industry concepts and developing fundamental sketching and CAD skills to produce basic technical drawings. As they progress, they design single- and multi-floor residential structures, create complete construction documents, and develop detailed plans for foundations, roofs, electrical systems, stair and railing components, kitchens and baths, and site layouts. Through this pathway, students gain industry-recognized skills and credentials that prepare them for careers such as architectural drafter, residential designer, CAD technician, construction document specialist, and architectural design assistant.

Fundamentals of Design Graphics 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.

Architectural Design Graphics I Honors

Course Number: IC62

Recommended Maximum Enrollment: 25

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

Prerequisite: IC61 Fundamentals of Design Graphics 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.

Architectural Design Graphics II Honors

Course Number: IC63

Recommended Maximum Enrollment: 25

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

Prerequisite: IC62 Architectural Design Graphics I 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.

Carpentry Pathway

The Carpentry pathway spans four courses progressing through hands-on training in residential and commercial construction. Students begin by learning to safely use hand and power tools, apply construction math, and read and interpret plan drawings, then advance to performing building layout, material estimation, and constructing floor, wall, and roof systems. In the upper-level courses, students develop skills in installing building envelope components, roofing, siding, gypsum board, doors, and interior finishes. Throughout the pathway, students gain industry credentials and practical experience that prepare them for careers such as carpenter, construction laborer, framing technician, roofing installer, building contractor, and construction supervisor.

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.

Electrical Trades Pathway

The Electrical Trades pathway spans four courses providing students with comprehensive training in residential and commercial electrical systems. Students begin by learning to safely use hand and power tools, bend and install conduit, and wire basic outlets, switches, and lighting devices, then advance to building raceway systems and troubleshooting circuits using electrical testing equipment. In the upper-level courses, students install lighting and auxiliary equipment, and connect circuit breakers, panel boxes, motors, and electrical control systems. Through this pathway, students gain industry credentials and hands-on skills that prepare them for careers such as electrician, electrical apprentice, maintenance technician, electrical installer, and industrial electrical technician.

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

The HVACR pathway spans four courses providing students with progressive training in heating, ventilation, air conditioning, and refrigeration systems. Students begin by learning to read wiring diagrams, apply the National Electric Code (NEC), and work with piping materials while developing foundational knowledge of heating and cooling system components. As they advance, students study the operation and troubleshooting of heat pumps, compressors, expansion devices, gas-fired components, and electric motors, while practicing refrigerant handling and equipment servicing procedures. Through this pathway, students gain industry-recognized skills and credentials that prepare them for careers such as HVACR technician, refrigeration mechanic, HVAC installer, maintenance technician, and HVAC service technician.

HVACR I Honors

Course Number: IC31

Recommended Maximum Enrollment: 20

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

Prerequisite: None

Description: Discover the fundamentals of heating, ventilation, air conditioning, and refrigeration while exploring exciting career opportunities in the field. Acquire hands-on experience using common HVACR hand and power tools safely and effectively. Utilize measuring and trade math skills to perform real-world installation and maintenance tasks. Gain the knowledge and skills for careers in the HVACR pathway.

* 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: Service and maintain basic cooling systems following industry standards and procedures. Safely construct and test common HVACR circuits and components. Use proper methods to cut, join, solder, and braze copper and plastic piping. Gain the knowledge and skills for careers in the HVACR pathway.

* 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: Measure temperature, humidity, pressure, and airflow in air distribution systems to evaluate and optimize performance. Learn the essential HVACR technician skills required to evacuate systems, perform leak tests, charge, and recover refrigerants safely. Service and maintain heat pump systems to ensure reliable and efficient operation. Gain the knowledge and skills for careers in the HVACR pathway.

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

HVACR IV

Course Number: IC34

Recommended Maximum Enrollment: 20

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

Prerequisite: IC33 HVACR III Honors

Description: Maintain and repair compressors and metering devices through hands-on system work.

Develop strong communication and professionalism skills for real-world service calls and conduct common HVACR system maintenance. Design, build, and install sheet metal, fiberglass, and flexible ventilation systems used in today's industry. Gain the knowledge and skills for careers in the HVACR pathway.

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

Masonry Pathway

The Masonry pathway spans three courses providing students with progressive training in residential and structural masonry construction. Students begin by learning to interpret measurements, drawings, and specifications, safely operating masonry tools, and lay and bond brick and block using proper mortar mixtures. As they advance, they apply reinforced masonry techniques, construct foundations, install metal components and openings, and develop an understanding of structural integration, climate effects, and quality control standards. Through this pathway, students gain industry-recognized skills and credentials that prepare them for careers such as brick mason, block mason, masonry technician, construction laborer, and masonry contractor.

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

The Plumbing pathway spans four courses designed to build students' skills from foundational plumbing practices to advanced system installation. Students learn to read and apply construction drawings, install and test DWV and water distribution systems, and work with a variety of piping materials including copper, cast iron, steel, and plastic. As they advance, they gain experience installing complete water service systems, plumbing fixtures, and appliances, while safely handling gas and fuel. This pathway prepares students for careers such as plumber, pipefitter, plumbing apprentice, plumbing technician, and residential or commercial service plumber.

Plumbing I

Course Number: IC51

Recommended Maximum Enrollment: 20

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

Prerequisite: None

Description: Explore the fundamental principles of plumbing while discovering career opportunities within the trade. Gain hands-on experience using common plumbing hand and power tools safely and effectively. Locate, join, assemble, and install various types of pipe, tubing, and fittings used throughout the industry. Gain the knowledge and skills for careers in the Plumbing pathway.

* 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: Use basic plumbing math to measure and cut pipe and fittings accurately for a variety of plumbing tasks. Install and maintain basic drain, waste, and vent (DWV) systems used in plumbing systems. Assemble and install water distribution systems and connect common plumbing fixtures such as sinks, toilets, and tubs. Gain the knowledge and skills for careers in the Plumbing pathway.

* 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: Read and interpret commercial plumbing drawings to install drain, waste, and vent (DWV) systems. Use plumbing math to calculate accurate offsets for DWV systems. Install and test DWV systems using air and water to ensure proper performance and compliance. Gain the knowledge and skills for careers in the Plumbing pathway.

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

Plumbing IV

Course Number: IC54

Recommended Maximum Enrollment: 20

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

Prerequisite: IC53 Plumbing III Honors

Description: Install and test water distribution systems using air and water to ensure compliance with code standards. Select and install common plumbing fixtures, valves, and components for proper system function. Install and wire a water heater safely to meet electrical and plumbing code requirements. Gain the knowledge and skills for careers in the Plumbing pathway.

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

Welding Pathway

The Welding Technology pathway spans three courses providing students with progressive training in welding processes and metal fabrication. Students begin by developing strong safety practices, performing thermal cutting tasks, and learning proper metal preparation techniques. As they advance, they interpret blueprints and welding symbols, inspect and analyze weld defects, and produce high-quality welds in multiple positions using processes such as shielded metal arc welding (SMAW), flux-cored arc welding (FCAW), and gas metal arc welding (GMAW). Through this pathway, students gain industry-recognized skills and credentials that prepare them for careers such as welder, welding technician, pipe welder, fabrication specialist, and structural steel worker.

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.

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.

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.

Woodworking Pathway

The Woodworking pathway spans two courses providing students with foundational and advanced training in woodworking and cabinetmaking. Students develop a strong understanding of health and safety practices while learning to safely operate hand tools, portable power tools, and stationary machinery used in the industry. As they progress, they build skills in material selection, surface preparation, finishing techniques, and the design, layout, and construction of cabinet assemblies. This pathway prepares students for careers such as cabinetmaker, carpenter, furniture builder, woodworking technician, and manufacturing production specialist.

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

This Automotive Body Repair pathway spans four courses, starting with foundational shop safety, tools, and equipment and progressing through advanced hands-on non-structural repair and refinishing skills. Students learn to work safely with hazardous materials, perform trim and hardware removal/replacement, complete non-structural metal repairs including small dent removal, and use body filler, sanding, and surface-prep techniques to restore damaged panels. The pathway also develops skills in primer and topcoat preparation, plastic repair, minor paint repairs, and environmentally safe refinishing practices while supporting attainment of industry credentials. Careers aligned with this pathway include auto body/collision repair technician, non-structural repair technician, automotive refinishing/painter, paint-prep technician, and body shop or collision center apprentice.

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 Honors

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 Honors

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 Honors

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

The Automotive Service pathway spans four courses progressing from entry-level shop skills to advanced repair and diagnostic work. Students build hands-on knowledge in shop safety, tools and equipment use, vehicle lifting, inspections, and essential maintenance such as oil and filter service and 12-volt battery replacement. Through advancement, technical skills are mastered in drivetrain and brake service, electrical testing with a digital multimeter, tire inspection/repair/balancing, suspension and steering service, and research-based diagnosis using service information, bulletins, recalls, trouble codes, and module data. By the end of the pathway, content expands into basic system diagnosis and heating/air conditioning fundamentals while students work toward industry credentials aligned to careers such as automotive service technician, lube/maintenance technician, brake and suspension technician, tire technician, and entry-level diagnostic technician.

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

The Global Logistics and Supply Chain Management pathway spans four courses, providing students with a progression from foundational concepts to advanced applications in global logistics. Students develop innovative and critical thinking skills as they solve authentic logistics problems and explore how businesses manage the movement of goods across complex global supply chains. Throughout the pathway, learners gain knowledge in sourcing raw materials, transportation methods, warehousing, distribution networks, and balancing cost with efficiency using models such as just-in-time. This pathway prepares students for careers such as logistics coordinator, supply chain analyst, operations manager, transportation planner, and procurement specialist.

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

The Early Childhood Development and Services pathway progressively builds student knowledge from foundational theory to advanced classroom application. Students gain knowledge of developmental theories, the cultural and environmental influences on young children, and the importance of early relationships in supporting healthy growth across physical, social, emotional, and cognitive domains. Through hands-on internship experiences, students develop skills in curriculum planning, creating developmentally appropriate learning environments, guiding behavior, supporting diverse learners, and fostering creativity through play and the arts. This pathway prepares students for careers such as early childhood teacher, early intervention specialist, early childhood assistant, child life specialist, family support specialist, and other roles in early childhood education and services.

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: Develop knowledge and skills to understand how children learn and grow through observation and using those insights to guide curriculum decisions. Learn to plan and teach engaging, developmentally appropriate experiences while applying positive strategies for supporting children's behavior. Participate in a hands-on internship within the early childhood classroom and reflect on how teaching practices impact children's learning and behavior. 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

The Teaching/Training pathway allows students to progress from foundational knowledge to hands-on classroom practice. Students examine the history and structure of the education system, the role and responsibilities of teachers, curriculum development, and the characteristics of effective 21st-century schools. Students develop skills in lesson planning, instructional strategies, classroom management, and analyzing the impact of teaching on student achievement. Through real-world field experience aligned with state standards, students apply pedagogical knowledge and prepare for careers such as elementary or secondary teacher, teaching assistant, instructional coach, or other roles in education and training.

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/Co-requisite: 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
- Fundamentals of Healthcare
- Health Informatics
- Medical Assisting
- Pre-Nursing

Biomedical Technology Pathway

The Biomedical Technology pathway introduces students to the scientific, ethical, and technological foundations of modern healthcare research, including biomedical innovation, animal care and use in research, and the challenges facing today's scientific community. Students explore cell biology, cancer development, infectious and emerging diseases, forensic science, and medical breakthroughs such as organ transplantation to understand how research drives advancements in patient care. Through investigative learning and real-world case studies, learners build analytical and problem-solving skills that prepare them for future study and careers in biomedical research, laboratory science, biotechnology, and related health professions.

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: Diagnose musculoskeletal and movement disorders by analyzing patient medical data, modeling muscle and bone function, and designing personalized rehabilitation solutions. Conduct neuroscience and endocrine research by dissecting brain structures, running *C. elegans* experiments, and designing open-ended investigations into nervous and hormonal regulation. Evaluate cardiopulmonary and immune function in extreme environments by performing EKGs, spirometry, pathogen analysis, and applying data to real-world adventure medicine scenarios. Gain the knowledge and skills for careers in the Biotechnology Research and Development pathway.

Biomedical Technology

Course Number: HB11

Recommended Maximum Enrollment: 30

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

Prerequisite: HU44 Medical Anatomy and Physiology 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: HU32 Essential Healthcare Practices 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

The Biotechnology Research and Development pathway through Project Lead the Way (PLTW) introduces students to the scientific principles, laboratory techniques, and safety practices that define modern biotechnology and biomedical science. Through hands-on investigations involving DNA, raw materials, and biotech materials, learners build skills in research methods, scientific documentation, and standard laboratory operating procedures (SLOP). Progressing into advanced studies, students enhance their laboratory expertise and explore career opportunities in biomedical research, pharmaceuticals, agricultural biotechnology, and related STEM fields.

PLTW Principles of Biomedical Sciences

Course Number: HP70

Recommended Maximum Enrollment: 20

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

Prerequisite: None

Description: Analyze crime scene and autopsy evidence by documenting scenes, conducting toxicology and tissue examinations, and synthesizing forensic data to determine cause and manner of death. Diagnose patient conditions by collecting vital signs, interpreting clinical tests, evaluating genetic and physiological data, and formulating evidence-based plans for patient care. Investigate outbreaks and emergencies by tracing infectious agents, designing containment strategies, stabilizing patients in the field, and modeling emergency response systems. Gain the knowledge and skills for careers in the Biotechnology Research and Development 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: Diagnose musculoskeletal and movement disorders by analyzing patient medical data, modeling muscle and bone function, and designing personalized rehabilitation solutions. Conduct neuroscience and endocrine research by dissecting brain structures, running *C. elegans* experiments, and designing open-ended investigations into nervous and hormonal regulation. Evaluate cardiopulmonary and immune function in extreme environments by performing EKGs, spirometry, pathogen analysis, and applying data to real-world adventure medicine scenarios. Gain the knowledge and skills for careers in the Biotechnology Research and Development pathway.

PLTW Medical Interventions

Course Number: HP72

Recommended Maximum Enrollment: 20

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

Prerequisite: HP71 PLTW Human Body Systems

Description: Diagnose infectious diseases by applying bioinformatics tools, analyzing patient samples, and designing outbreak-prevention strategies based on real-world epidemiological practices. Evaluate genetic risks by performing DNA extraction, PCR, restriction analysis, and gel electrophoresis to inform evidence-based recommendations in a simulated genetic counseling scenario. Design cancer detection, prevention, and treatment solutions by conducting lab investigations, modeling prosthetic technologies, and proposing personalized or nanotechnology-based medical innovations. Gain the knowledge and skills for careers in the Biotechnology Research and Development pathway.

PLTW Biomedical Innovation Honors

Course Number: HP73

Recommended Maximum Enrollment: 20

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

Prerequisite: HP72 PLTW Medical Interventions

Description: Design an efficient emergency medicine delivery system by analyzing real-world ER workflows and applying biomedical knowledge to propose improved clinical care solutions. Conduct a full experimental study by developing a testable research question, collecting and analyzing physiological data, and presenting scientifically valid conclusions. Engineer an innovative biomedical device or intervention by researching existing solutions, prototyping a new design, and pitching the concept to an authentic audience. Gain the knowledge and skills for careers in the Biotechnology Research and Development pathway.

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: Define open-ended engineering, biomedical, or computer science problems by conducting research, validating problem need, and developing justified project proposals. Design innovative solutions through iterative concept generation, analysis, and application of STEM principles while collaborating with mentors and industry experts. Prototype and test solutions by creating physical or virtual models, implementing unbiased test plans, collecting data, and evaluating performance against design requirements. Present and defend their final engineered solution through professional technical communication, stakeholder review, and preparation for college and career pathways.

Counseling and Mental Health Pathway

The Counseling and Mental Health pathway spans two sequential courses that build from foundational interpersonal development to advanced understanding of mental health theory and practice. Students examine healthy relationships, family systems, and lifespan development while developing effective communication skills essential for supporting individual well-being. The pathway progresses to the study of brain function, classification of mental health disorders, and major counseling theories and treatment approaches. Students gain knowledge and applied skills aligned with careers such as mental health counselor, school counselor, social worker, psychologist, psychiatric technician, and other behavioral health professionals.

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

The Food and Nutrition pathway spans three progressive courses that develop foundational food preparation skills, advanced nutrition knowledge, and applied food science and industry practices. Students build competencies in food preparation, kitchen safety and sanitation, meal planning, and nutrient requirements across the lifespan, while examining the impact of food systems on the environment, economy, and society. The pathway integrates food science principles, product development, packaging design, and entrepreneurial planning using the Lean Canvas Business Model, leading to industry credentials in food protection management. Career pathways aligned with this program include dietitian, nutritionist, food safety manager, food scientist, product development specialist, food service manager, and food entrepreneur.

Foods I - Fundamentals

Course Number: FS01

Recommended Maximum Enrollment: 20*

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

Prerequisite: None

Description: Explain where food comes from and how it is used. Apply knowledge of nutrients to food choices and safe food preparation skills. Understand the functions of ingredients in cooking and baking. Gain the knowledge and skills for careers in Food and Nutrition Sciences.

*For safety 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: FS01 Foods I – Fundamentals

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: FS01 Foods I – Fundamentals 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

The Health Informatics pathway prepares students to understand, analyze, and apply healthcare data through exploration of how information is collected, organized, and used to improve patient and population outcomes. Students learn to work with databases, digital tools, and emerging technologies, such as app design, health registries, data analytics, and clinical decision-support systems, to solve real-world challenges in quality, safety, efficiency, and public health. Through hands-on design, problem solving, and technology-driven scenarios, learners develop the technical, analytical, and ethical competencies required for careers in health information management, data analysis, digital health innovation, and biomedical informatics.

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.

Fundamentals of Healthcare Pathway

The Healthcare Fundamentals pathway provides an introduction to health science by building foundational knowledge of healthcare systems, medical terminology, and the history of medicine. Students begin to explore the structure and function of the human body and the interaction of major body systems that maintain health. Learners develop essential skills in infection control, vital sign measurement, patient documentation, and basic therapeutic techniques that support patient safety and wellness. Emphasis is placed on career exploration and the development of technical and employability skills needed for success in healthcare settings.

Foundations of Healthcare

Course Number: HU31

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.

Essential Healthcare Practices

Course Number: HU32

Recommended Maximum Enrollment: 30

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

Prerequisite: HU31 Foundations of Healthcare

Description: Explore human body systems and their functions. Demonstrate proper infection control practices to maintain a safe environment for patients and healthcare providers. Safely collect and accurately document vital signs and patient information to create a comprehensive record of health. Practice healthcare skills and therapeutic techniques that promote patient recovery and wellness. Gain the knowledge and skills for careers in the Healthcare Fundamentals pathway.

Medical Assisting Pathway

The Medical Assisting pathway prepares students for careers in healthcare by integrating clinical and administrative competencies with essential employability skills. Students develop knowledge of anatomy and physiology, patient care, medical law and ethics, and patient education while gaining hands-on experience in clinical procedures, appointment scheduling, and front office coordination. Emphasis is placed on teamwork, organization, time management, and decision-making to support effective patient care and healthcare operations. This pathway equips learners with industry-relevant skills and credentials, leading to careers such as medical assistant, clinical medical assistant, or medical office specialist.

Medical Anatomy and Physiology

Course Number: HU44

Recommended Maximum Enrollment: 30

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

Prerequisite: None

Description: Investigate the functions of the human body and how its structures work together.

Explore how major body systems support movement, protect the body, balance internal conditions, and process food and waste. Examine how the body's communication systems detect changes, respond to the environment, and help all systems work together to sustain life. Gain the knowledge and skills for careers in the Healthcare and Human Services Career Cluster.

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: Diagnose musculoskeletal and movement disorders by analyzing patient medical data, modeling muscle and bone function, and designing personalized rehabilitation solutions.

Conduct neuroscience and endocrine research by dissecting brain structures, running C. elegans experiments, and designing open-ended investigations into nervous and hormonal regulation. Evaluate cardiopulmonary and immune function in extreme environments by performing EKGs, spirometry, pathogen analysis, and applying data to real-world adventure medicine scenarios. Gain the knowledge and skills for careers in the Biotechnology Research and Development pathway.

Medical Assisting and Non-Practicum Honors

Course Number: HU45

Recommended Maximum Enrollment: 16

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

Prerequisite: HU44 Medical Anatomy and Physiology OR HP71 PLTW Human Body Systems.

Students must be at least 16 years old, have completed HU44 Medical Anatomy and Physiology, 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 365 days of course completion to receive a valid credential.

Medical Assisting and Practicum Honors

Course Number: HU46

Recommended Maximum Enrollment: 16

Hours of Instruction: 270 (block) 300 (regular)

Prerequisite: HU44 Medical Anatomy and Physiology OR HP71 PLTW Human Body Systems.

Students must be at least 16 years old, have completed HU44 Medical Anatomy and Physiology, 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 365 days of course completion to receive a valid credential.

Pre-Nursing Pathway

The Pre-Nursing pathway prepares students for nursing and other healthcare careers by combining the study of medical anatomy and physiology and foundational nurse aide training. Students examine how the human body's structures and systems work together to sustain life while developing essential skills in patient and resident care, communication, teamwork, and safe clinical practice. Aligned with North Carolina Nurse Aide I standards, the pathway provides classroom, laboratory, and clinical experiences that help students gain healthcare knowledge and hands-on skills. This pathway equips students with industry-recognized credentials and prepares them for careers such as nurse aide, home health aide, or for continued education in nursing and other healthcare professions.

Medical Anatomy and Physiology

Course Number: HU44

Recommended Maximum Enrollment: 30

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

Prerequisite: None

Description: Investigate the functions of the human body and how its structures work together. Explore how major body systems support movement, protect the body, balance internal conditions, and process food and waste. Examine how the body's communication systems detect changes, respond to the environment, and help all systems work together to sustain life. Gain the knowledge and skills for careers in the Healthcare and Human Services Career Cluster.

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: Diagnose musculoskeletal and movement disorders by analyzing patient medical data, modeling muscle and bone function, and designing personalized rehabilitation solutions. Conduct neuroscience and endocrine research by dissecting brain structures, running *C. elegans* experiments, and designing open-ended investigations into nervous and hormonal regulation. Evaluate cardiopulmonary and immune function in extreme environments by performing EKGs, spirometry, pathogen analysis, and applying data to real-world adventure medicine scenarios. Gain the knowledge and skills for careers in the Biotechnology Research and Development pathway.

Nursing Fundamentals and Non-Practicum Honors

Course Number: HN42

Recommended Maximum Enrollment: 10*

Hours of Instruction: 270 (block) 300 (regular)

Prerequisite: HU44 Medical Anatomy and Physiology

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 Pre-Nursing 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 lab and 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: HU44 Medical Anatomy and Physiology **

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 Pre-Nursing 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 lab and 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: HU44 Medical Anatomy and Physiology **

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 Pre-Nursing 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.

***This course is an add-on endorsement to HN43 Nursing Fundamentals.

Public Health Fundamentals

Course Number: HN45

Recommended Maximum Enrollment: 20*

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

Prerequisite: HU44 Medical Anatomy and Physiology **

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 Pre-Nursing 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.

***This course is an add-on endorsement to HN43 Nursing Fundamentals.

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

The Emergency Management pathway prepares students to understand the structure and operations of public safety systems, including the coordination of personnel, agencies, and resources during critical incidents. Learners develop foundational and advanced skills in emergency operations center functions, rapid needs assessment, hazard mitigation, and effective communication across multi-agency response teams. Through scenario-based activities and leadership-focused training, students gain the competencies needed for careers in public safety, homeland security, disaster response, and emergency management services.

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 date the grade is entered for 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: Gather 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 Honors

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 Honors

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

The Emergency Medical Technology pathway introduces students to the knowledge and skills required to care for patients of all ages in the pre-hospital environment, emphasizing the structure of emergency medical systems and the vital role of Emergency Medical Services (EMS) professionals. Learners build a foundational understanding of anatomy, physiology, and the assessment and treatment of medical and traumatic emergencies while practicing core responder and EMT-level skills. Through hands-on training and real-world scenarios, students develop clinical readiness and professional competencies that prepare them for an advanced EMS education, certification opportunities, and careers in emergency medical services.

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 date the grade is entered for 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 date the grade is entered for the course in Continuum. (Continuum is the name of the course database from NCOEMS.)

Firefighter Technology Pathway

The Firefighter Technology pathway prepares students with the foundational, intermediate, and advanced skills required for modern firefighting and emergency response. Learners build competency in fire behavior, personal protective equipment, communications, ventilation, ladders, water supply, search and rescue, and basic emergency medical care while progressing toward complex operations such as HAZMAT response, mayday procedures, fire prevention, and traffic incident management. Through hands-on training and scenario-based practice, students develop the technical expertise, safety awareness, and teamwork essential for firefighting careers and further public safety training.

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

The Junior Reserve Officers Training Corps pathway equips students with the knowledge and skills needed to succeed in both military and civilian leadership roles. Through a focus on self-discovery, students develop strong character, integrity, and personal accountability while learning how to effectively lead diverse teams in a global workforce. The pathway emphasizes civic responsibility and encourages active engagement in community, government, and societal issues. Students build decision-making skills that promote positive social, emotional, and physical well-being, preparing them for both personal and professional success. By exploring the role of the military and other service organizations, learners gain a deeper appreciation for service, leadership, and teamwork. Upon completion, students are well-prepared to pursue post-secondary education and a wide range of career pathways in leadership, public service, and beyond.

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

The Law and Justice pathway introduces students to the foundations of the criminal justice system, including the history of law enforcement, policing responsibilities, crime classification, and the legal process. Learners develop essential professional skills in communication, conflict resolution, courtroom procedures, and the operation of public safety equipment, while also gaining knowledge in private security, crime prevention, threat assessment, and physical security operations. Through practical experiences and scenario-based learning, students build the competencies needed for careers in law enforcement, security services, corrections, and broader public safety fields.

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: Gather 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 Honors

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

The Public Safety pathway provides students with foundational knowledge of careers in firefighting, emergency medical services, law enforcement, and 9-1-1 telecommunications while building essential entry-level skills across these fields. Learners engage in hands-on activities that mirror real public safety roles, including basic emergency response, community emergency response team (CERT) functions, and communication skills used in emergency dispatch. Through exploration, skill development, and career planning, students gain the awareness and competencies needed to pursue future training, certification, and employment within the public safety sector.

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

AP Computer Science Pathway

The AP Computer Science Principles pathway spans courses progressing from an introduction to foundational computing concepts through advanced exploration of how digital systems power communication and data storage across industries. Students develop knowledge in programming, data analytics, cybersecurity, and the principles behind artificial intelligence (AI), while building critical thinking, computational problem-solving, collaboration, and ethical decision-making skills needed to navigate and lead in a constantly evolving tech landscape. Through real-world applications, learners examine how computing drives innovation and addresses complex challenges and opportunities within communities and economies. This pathway prepares students for careers such as software developer, data analyst, cybersecurity specialist, AI engineer, and IT systems analyst, while equipping them with transferable digital skills applicable across all Career Clusters.

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: 0A06

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.

Cisco Network Engineering Pathway

The Cisco Network Engineering pathway builds from foundational networking concepts to advanced configuration and troubleshooting of enterprise-level data networks. Students explore the devices, protocols, and infrastructure that enable digital communication, developing hands-on skills in building local area networks, configuring routers and switches, implementing IP addressing schemes, and applying network management and monitoring tools. Emphasizing cybersecurity, access control, data transmission, and system reliability, learners strengthen problem-solving skills essential to designing secure and efficient digital systems that power communication and data storage across industries. This pathway prepares students for careers such as network engineer, network administrator, cybersecurity analyst, IT support specialist, systems engineer, and infrastructure technician within the Digital Technology and Computer Science Career Cluster.

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

The Computer Engineering pathway helps students develop foundational through advanced skills in computer hardware, operating systems, and technical support. Students install, configure, and maintain computer systems and mobile devices while troubleshooting real-world hardware, software, network, and security issues across Windows, macOS, and Linux environments. Emphasizing cybersecurity, system reliability, and critical IT support functions, learners identify vulnerabilities, protect devices and network connections, and apply industry-standard practices to ensure secure and efficient digital operations. This pathway prepares students for careers such as computer support specialist, IT technician, systems support analyst, network support technician, cybersecurity technician, and help desk specialist within the Digital Technology and Computer Science Career Cluster.

Computer Engineering Technology I Honors

Course Number: CI01

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

The Computer Science Principles pathway consists of courses which span introductory through advanced coursework, beginning with foundational programming in JavaScript or Python using the Minecraft platform and extending to AP-level exploration of algorithms, large data sets, and global computing impacts. Students develop the knowledge and skills to design and code complex, interactive programs using variables, data types, selection and branching, iteration loops, modularity, and error handling, while exploring how digital systems store, transmit, and secure data. Emphasizing artificial intelligence (AI), data analytics, and cybersecurity, learners strengthen critical thinking, creativity, ethical reasoning, and problem-solving skills needed to navigate and lead in a constantly evolving tech landscape. This pathway drives innovation across industries and prepares students for careers such as software developer, data analyst, cybersecurity specialist, AI engineer, game developer, and computer systems analyst, while equipping them with transferable digital competencies applicable across all Career Clusters.

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: 0A06

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

The Data Science pathway introduces students to foundational concepts in data organization, data analysis, and data visualization while preparing them for careers in the rapidly growing field of data science. Students learn to collect, structure, and interpret data using a variety of technology tools to uncover patterns and insights. They compose data structures and apply database relationships to solve complex, real-world data questions. As they advance, students build SAS programs to address common data analysis challenges and create custom formats, reports, and tables to communicate findings effectively. Emphasis is placed on synthesizing data to develop clear, compelling stories that support informed decision-making. This pathway equips students with the technical, analytical, and communication skills needed for further study and careers in data science and analytics.

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.

Data Analytics

Course Number: CS32

Recommended Maximum Enrollment: 25

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

Prerequisite: CS30 Introduction to Data Science

Description: Explore how businesses and organizations use data to solve problems and make informed decisions. Develop skills in collecting, cleaning, organizing, and analyzing data using industry-relevant tools such as spreadsheets, SQL, R, or Python. Create professional data visualizations to communicate findings clearly and apply ethical and responsible data practices used in today's workforce. 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

The Network Administration pathway provides foundational networking concepts to advanced network security and optimization practices. Students deploy ethernet and wireless solutions, configure networking services, and explore physical and cloud connectivity while monitoring systems to ensure business continuity. Emphasizing cybersecurity, threat mitigation, troubleshooting, and performance optimization, learners harden networks against attacks and maintain secure, reliable digital communication systems. This pathway prepares students for careers such as network administrator, systems administrator, IT infrastructure specialist, network security technician, cloud support technician, and information technology specialist within the Digital Technology and Computer Science Career Cluster.

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

The Network Security pathway provides foundational cybersecurity concepts to advanced threat detection and response in enterprise and hybrid environments. Students secure and monitor networked systems, identify vulnerabilities, and analyze security events while developing skills to protect devices, cloud platforms, mobile technologies, and IoT systems from emerging threats. Emphasizing risk management, incident response, compliance standards, and defense strategies aligned with industry and U.S. Department of Defense guidelines, learners strengthen the critical thinking and technical expertise required to safeguard digital communication and data storage systems. This pathway prepares students for careers such as cybersecurity analyst, information security specialist, security operations center (SOC) technician, network security engineer, cyber defense analyst, and IT security consultant within the Digital Technology and Computer Science Career Cluster.

Cybersecurity I Honors

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 Honors

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.

AP Cybersecurity

Course Number: 0A04

Recommended Maximum Enrollment: 30

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

Prerequisite: None

Description: AP Cybersecurity is a broad introduction to the field that offers students the opportunity to earn college credit. Developed in partnership with college faculty and industry leaders, this course aligns with the National Initiative for Cybersecurity Education Workforce Framework.

Python Programming Pathway

The Python Programming pathway provides foundational to advanced coursework that prepares students to develop digital systems for communication and data storage using critical technologies such as artificial intelligence (AI), data analytics, cybersecurity, and Internet of Things (IoT) applications. Students gain hands-on experience designing, writing, debugging, and running Python programs while building expertise in control structures, functions, data types and collections, file processing, modular design, object-oriented programming, and error handling to create secure, reliable solutions. Through data storytelling, visualization, and ethical problem-solving practices, learners strengthen the technical, analytical, and innovation skills necessary to navigate and lead in a constantly evolving tech landscape. This pathway equips students with transferable digital competencies applicable across all career clusters and prepares them for careers such as Python developer, software engineer, data analyst, cybersecurity analyst, IoT developer, and AI programmer.

Python Programming I Honors

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 Honors

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: 0A06

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.

Robotics Pathway

The Robotics pathway prepares students for careers in robotics, automation, emerging and advanced technology by combining engineering design, programming, and hands-on construction. Students use the engineering design process to design robotic systems and build working robots using motors, gears, and electrical components. They write code to perform basic autonomous tasks and use sensors to help robots detect and respond to their surroundings. As their skills progress, students construct advanced mechanisms such as robotic arms, lifts, and drivetrains while integrating electronics and control systems to improve performance and precision. They program increasingly complex autonomous routines that allow robots to operate independently without remote control. Through troubleshooting and experimentation, students develop the technical knowledge and problem-solving skills essential for careers in robotics and related engineering fields.

Robotics I

Course Number: CA21

Recommended Maximum Enrollment: 20

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

Prerequisite: None

Description: Design robotic systems using the engineering design process. Build and program robots to perform basic autonomous tasks. Troubleshoot electrical and mechanical components through hands-on experimentation. Gain the knowledge and skills for careers in the Robotics pathway.

Robotics II

Course Number: CA22

Recommended Maximum Enrollment: 20

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

Prerequisite: CA21 Robotics I

Description: Construct advanced robotic mechanisms including arms and drivetrains. Code autonomous routines using sensors and control systems. Integrate electronics and tuning techniques to improve robot performance. Gain the knowledge and skills for careers in the Robotics pathway.

Unmanned Aircraft Systems Pathway

This Drone Technology pathway spans three courses, progressing from introductory recreational piloting to advanced professional UAS operations, mapping, and entrepreneurship. Students build core knowledge of drone systems, FAA safety and legal requirements, airspace and weather analysis, mission planning, and industry-standard flight procedures through hands-on manual, GPS-assisted, and autonomous flight experiences. By the end of the pathway, learners can plan and execute drone missions, create sectional charts, and mission documentation, program basic autonomous flights, and produce 2D/3D maps and models using mapping software, while also developing a business plan for a drone services company. Careers aligned with this pathway include FAA Part 107 commercial drone pilot, drone mapping/GIS technician, public safety drone operator (police/fire/EMS), aerial imaging/photography specialist, and UAS operations or flight support technician.

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 Honors

Course Number: ID11

Recommended Maximum Enrollment: 15

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

Prerequisite: ID10 Drone Technology Fundamentals

Description: Explore the fast-growing world of drone (UAS) operations and aviation technology through teamwork, leadership activities, and real-world flight experiences. Build career-ready skills while learning how drones are operated safely and legally in professional settings. FAA drone laws, airspace and weather analysis, mission planning, and industry-standard flight procedures are emphasized. Manual and GPS-assisted flight operations prepare learners for advanced coursework, FAA Part 107 certification, and high-demand careers in aviation, technology, and public safety.

Drone Technology II Honors

Course Number: ID12

Recommended Maximum Enrollment: 15

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

Prerequisite: ID11 Drone Technology I Honors

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
- Business Management
- Entrepreneurship
- Office Administration
- Project Management

Business Ethics and Law Pathway

The Business Ethics and Law pathway guides students from foundational ethical reasoning to applied legal analysis in modern business contexts. Students develop an understanding of business laws, ethical decision-making, contracts, ownership structures, digital citizenship, and the spirit and intent of the law as it applies to real-world business practices. Throughout the pathway, learners build critical thinking, legal analysis, and critical thinking skills to evaluate complex ethical and legal issues affecting organizations and consumers. This pathway aligns with careers such as business manager, legal assistant, compliance officer, entrepreneur, human resources specialist, and corporate ethics or policy advisor.

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.

Business Management Pathway

The Business Management pathway builds from foundational business principles to advanced management practices. Students gain knowledge in business operations, ethics, finance, marketing, human resources, technology, and managerial decision-making through real-world scenarios. Throughout the pathway, learners develop leadership, problem-solving, teamwork, and critical-thinking skills while exploring how managers plan, organize, and control organizational resources. This pathway prepares students for careers such as business manager, operations supervisor, human resources coordinator, project manager, retail manager, and entrepreneur.

AP Business with Personal Finance

Course Number: 0A03

Recommended Maximum Enrollment: 30

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

Prerequisite: None

Description: AP Business with Personal Finance introduces students to the knowledge and skills they will need to grow their careers, manage money, and get a head start toward the most popular college major in the U.S. Developed in partnership with college faculty and industry leaders, the course offers students the opportunity to earn college credit.

* Students should be able to read a college-level textbook and to express themselves clearly in writing.

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 OR 0A03 AP Business with Personal Finance

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 business management.

IB Business Management

Course Number: BI50

Recommended Maximum Enrollment: 30

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

Prerequisite: BF10 Business Essentials OR 0A03 AP Business with Personal Finance

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.

Entrepreneurship Pathway

In the Entrepreneurship pathway students learn to conceptualize, launch, and operate a small business while developing an entrepreneurial mindset through feasibility studies, design thinking, and the Lean Canvas Business Model. Throughout the pathway, students build skills in channel management, pricing, product and service management, promotion, risk management, staffing, and strategic planning, culminating in the development of a comprehensive business plan with a SWOT analysis and action plan. This pathway prepares students for careers such as entrepreneur, small business owner, startup founder, business consultant, operations manager, and franchise owner.

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.

Office Administration Pathway

The Office Administration pathway progresses from foundational business knowledge to advanced office technology and productivity skills. Students develop essential competencies in business operations, workplace ethics, customer relations, and information management while gaining direct experience with industry-standard software. Throughout the pathway, learners build proficiency in creating professional documents, presentations, spreadsheets, and data visualizations using Microsoft Word, PowerPoint, and Excel. This pathway prepares students for careers such as administrative assistant, office manager, executive assistant, data entry specialist, customer service representative, and clerical support professional.

AP Business with Personal Finance

Course Number: 0A03

Recommended Maximum Enrollment: 30

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

Prerequisite: None

Description: AP Business with Personal Finance introduces students to the knowledge and skills they will need to grow their careers, manage money, and get a head start toward the most popular college major in the U.S. Developed in partnership with college faculty and industry leaders, the course offers students the opportunity to earn college credit.

* Students should be able to read a college-level textbook and to express themselves clearly in writing.

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

The Project Management pathway guides students through the complete project life cycle, from initial concept to final delivery. Students gain hands-on experience using project management principles, tools, and software while applying the processes of initiating, planning, executing, monitoring and controlling, and closing projects. Throughout the pathway, learners develop skills in scope, time, cost, quality, risk, communication, and stakeholder management, along with teamwork and problem-solving abilities. This pathway aligns with careers such as project coordinator, project manager, operations manager, construction manager, event planner, and business analyst.

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:

- Digital and Social Media Marketing
- Marketing Management
- Sales
- Sport and Event Marketing

Digital and Social Media Marketing Pathway

The Digital and Social Media Marketing pathway spans two engaging courses that provide students with a comprehensive progression from foundational concepts to advanced application of digital marketing strategies. Students will develop skills in creating and managing social media content, analyzing marketing campaigns, using industry tools, and interpreting data to improve campaign performance. Throughout the pathway, learners will practice ethical, safe, and responsible digital communication while developing real-world marketing plans. Career opportunities aligned with this pathway include social media manager, digital marketing specialist, marketing analyst or strategist, digital advertising coordinator, and content creation.

Digital and Social Media Marketing I

Course Number: MM21

Recommended Maximum Enrollment: 30

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

Prerequisite: None

Description: Discover career paths and opportunities in digital and social media marketing while building the skills needed to succeed in the field. Explore how businesses use digital and social media tools to reach and engage consumers and examine how different marketing strategies help them achieve their goals. Practice ethical, safe, and responsible approaches to promoting products and brands online. Gain the knowledge and skills for careers in digital and social media marketing.

Digital and Social Media Marketing II

Course Number: MM22

Recommended Maximum Enrollment: 25

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

Prerequisite: MM21 Digital and Social Media Marketing I

Description: Analyze real-world digital and social media marketing campaigns to determine how businesses apply strategic marketing concepts. Create a digital marketing implementation plan and campaign using industry tools and platform-appropriate content. Interpret and analyze data from campaign activities to assess effectiveness and recommend improvements. Gain the knowledge, skills, and industry credential for careers in digital and social media marketing.

Marketing Management Pathway

The Marketing Management pathway provides students with a solid foundation in marketing principles and advanced strategic application. Throughout the pathway, students learn to implement dynamic marketing processes, understand core marketing functions and their impact on business operations, and apply the marketing mix to real-world business scenarios. Students develop skills in marketing research, data analysis, marketing communications, and the creation of comprehensive marketing plans. This pathway prepares students for careers such as marketing specialist, advertising coordinator, market research analyst, social media manager, sales representative, and brand manager.

Marketing I

Course Number: MM51

Recommended Maximum Enrollment: 25

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

The Sales pathway is designed to build foundational and advanced selling skills. Students explore careers in sales and customer service, learn to recommend products that meet customer needs, and develop effective communication skills through public speaking and interactive role-play experiences. As they progress, students enhance their personal branding, critical thinking, improvisation, and customer service abilities while mastering the full selling process. This pathway prepares students for careers such as sales representative, account executive, retail manager, customer service manager, business development specialist, and entrepreneur.

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

The Sport and Event Marketing pathway explores the sport and event industries while developing knowledge of branding, promotion, and marketing strategies, as well as analyzing marketing data to support decision-making. Throughout the pathway, students apply these concepts to design and create comprehensive plans and proposals for unique events, while also evaluating financial and economic impacts. This pathway prepares students for careers such as sports marketing coordinator, event planner, athletic director, promotions manager, sponsorship coordinator, and sports agent.

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

The 3D Modeling and Animation pathway focuses on creating and sharing artistic and design work that informs, entertains, and inspires. Part of the Arts, Entertainment, and Design Career Cluster, students use industry-level software to create original 3D artwork and develop professional-quality digital content. They construct immersive scenes using physical materials, lighting, and virtual cameras while building and animating original 3D models. As their skills advance, students apply realistic materials and shaders to amplify digital models into lifelike creations. They bring characters to life through rigging and animation techniques and refine storytelling using lighting and camera movement on a digital stage. This pathway equips students with the technical knowledge, artistic skills, and creative confidence needed for careers in 3D modeling, animation, and related creative technologies.

3D Modeling and Animation I

Course Number: CD20

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Description: Create dynamic three-dimensional scenes using professional 3D modeling software. Add realism to 3D models through materials, textures, and lighting to bring objects and environments to life. Develop and animate complete virtual scenes using cameras and rendering tools to showcase artistic and technical design skills. Gain the knowledge and skills for careers in the 3D design and animation industry.

3D Modeling and Animation II Honors

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

The Adobe Graphic Design pathway builds from foundational visual design concepts to advanced digital and print publication production using industry-standard Adobe Creative Cloud tools. Students develop technical skills in Adobe Illustrator, Photoshop, and InDesign to create logos, vector graphics, enhanced digital images, and professional-quality print and multimedia publications for business and creative communication. Emphasizing design principles, typography, layout, branding, and visual storytelling, learners produce artistic and commercial work that informs, entertains, and inspires across multiple platforms while preparing for the Adobe Certified Professional credential. This pathway aligns with careers such as graphic designer, digital media specialist, publication designer, marketing designer, brand strategist, and creative services professional within the Arts, Entertainment, and Design Career Cluster.

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 Adobe Graphic Design pathway.

Adobe Video Design Pathway

The Adobe Video Design pathway begins with an honors-level foundation and advances to applied video production and digital media development. Students engage in preproduction, production, and postproduction processes while developing technical proficiency in Adobe Premiere Pro to capture, edit, and publish professional-quality audio and video content. Emphasizing legal, ethical, and editorial standards alongside cinematic storytelling and collaborative production planning, learners create news-style segments, interview features, and social media content designed for multiple platforms to inform, entertain, and inspire diverse audiences. This pathway prepares students for careers such as video editor, multimedia producer, broadcast technician, content creator, film production assistant, and digital media specialist within the Arts, Entertainment, and Design Career Cluster.

Adobe Video Design I Honors

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 Honors

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

The Fashion Merchandising pathway builds from foundational design and textile knowledge to advanced retail and brand strategy skills. Learn garment construction, textile selection, fashion terminology, and the influence of trends, the fashion cycle, and target consumers on product development and merchandising decisions. Apply retail math, analyze brand and consumer data, utilize digital tools, and create visual displays that maximize sales and profitability. This pathway prepares students for careers such as fashion merchandiser, retail buyer, visual merchandiser, fashion designer, brand representative, or retail manager.

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 textiles, construction, and merchandising. Use basic sewing skills to construct a quality garment from 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 brands in fashion and textile merchandising. Gain the knowledge and skills for careers in fashion, textiles, and merchandising.

Fashion and Textiles II - Merchandising

Course Number: FA09

Recommended Maximum Enrollment: 25

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

Prerequisite: FA07 Fashion 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 make management decisions. 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

The Fashion Design pathway guides students from foundational fashion concepts to advanced design applications. Develop skills in garment construction, textile selection, fashion terminology, and understanding trends, the fashion cycle, and target markets. Design and create a coordinated fashion collection, apply design principles, refine sewing techniques, and alter ready-to-wear garments for improved fit and function. This pathway prepares students for careers such as fashion designer, textile designer, seamstress or tailor, product developer, costume designer, or fashion entrepreneur.

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 textiles, construction, and merchandising. Use basic sewing skills to construct a quality garment from 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 brands in fashion and textile merchandising. Gain the knowledge and skills for careers in fashion, textiles, and merchandising.

Fashion and Textiles II - Design

Course Number: FA08

Recommended Maximum Enrollment: 20

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

Prerequisite: FA07 Fashion and Textiles I - Fundamentals

Description: Design a small, coordinated fashion collection utilizing design principles and appropriate textiles. Demonstrate new sewing skills to construct a quality garment from a commercial pattern. Make alterations to ready-to-wear clothing for better fit. Gain knowledge and skills for careers in fashion, textiles, and design.

Game Art Design Pathway

The Game Art Design pathway emphasizes creating and sharing artistic work that entertains, informs, and inspires across multiple platforms. Students use industry-standard software to create 3D artwork, construct immersive scenes with materials, lighting, and virtual cameras, and build and animate original 3D models for interactive environments. They develop foundational skills in visual storytelling, digital design, and real-time asset creation for games. As they advance, students explore game theory and apply production management skills while working in real-world inspired development teams. They design and build 3D game levels and interactive experiences using professional tools and workflows. This pathway prepares students for careers in game art, game design, environmental design, level design, and related creative technologies within the gaming, simulation, interactive 3D, and entertainment industries.

3D Modeling and Animation I

Course Number: CD20

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Description: Create dynamic three-dimensional scenes using professional 3D modeling software. Add realism to 3D models through materials, textures, and lighting to bring objects and environments to life. Develop and animate complete virtual scenes using cameras and rendering tools to showcase artistic and technical design skills. Gain the knowledge and skills for careers in the 3D design and animation industry.

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

The Interior Design pathway progresses from foundational design concepts to advanced digital applications. Discover the design thinking process, apply interior design principles, and develop visual communication skills to create functional and aesthetically pleasing spaces. Plan and arrange interiors to meet client needs, build a professional portfolio, and use industry-standard tools such as AutoDesk Revit to produce coordinated drawings, renderings, and 3D models. This pathway prepares students for careers such as interior designer, interior design assistant, CAD or BIM technician, space planner, or residential and commercial design consultant.

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 Practicum
- Hospitality and Tourism Management

Culinary Arts Applications Pathway

The Culinary Arts Applications pathway spans four progressive courses that move from foundational culinary techniques to advanced foodservice management and enterprise operations. Students develop technical proficiency in cooking methods, baking and pastry arts, garde manger, food preservation, menu planning, and regional and global cuisines while mastering industry-standard safety and sanitation practices. Through hands-on experience in a school-based enterprise, students apply operational planning, marketing, and management skills to real-world foodservice environments and earn industry-recognized certifications. Career pathways aligned with this program include chef, pastry chef, foodservice manager, caterer, restaurant entrepreneur, hospitality manager, and culinary operations supervisor.

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: Integrate professional practices in a working food service setting. Build safe and efficient preparation skills in the culinary setting. Practice creating and plating visually appealing baked goods and cold dishes while delivering excellent customer service to guests. The food service setting for this course is offered in an inspected commercial kitchen lab. 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 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 Practicum 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. The food service setting for this course is offered in an inspected commercial kitchen lab. 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 Practicum Pathway

The Culinary Arts Practicum pathway spans three progressive courses that integrate foundational culinary instruction with supervised industry experience. Students develop technical proficiency in food preparation, baking and pastry arts, garde manger, food preservation, safety and sanitation, and menu planning, then apply these competencies in a mentored foodservice practicum. The pathway emphasizes workplace readiness, operational management skills, and attainment of industry-recognized certifications to support career advancement. Career opportunities aligned with this pathway include line cook, pastry cook, catering assistant, restaurant supervisor, foodservice manager, and hospitality professional.

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 Practicum Honors

Course Number: FH12

Recommended Maximum Enrollment: 20*

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

Prerequisite: FH10 Culinary Arts and Hospitality I

Description: Integrate professional practices in a working food service setting. Build safe and efficient preparation skills in the culinary setting. Practice creating and plating visually appealing baked goods and cold dishes while delivering excellent customer service to guests. Food service settings for this course will be offered outside of the residential kitchen lab. Gain the knowledge and skills for careers in culinary arts and hospitality.

* For safety reasons and practicum 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 Practicum 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

The Hospitality and Tourism Management pathway spans two sequential courses that progress from industry exploration to applied management and leadership practices. Students examine the structure and economic, environmental, and societal impact of the hospitality and tourism sector while developing exceptional guest service competencies. The pathway advances to marketing strategy development, financial management, sales techniques, and leadership skills essential for supervisory and management roles, culminating in industry-recognized credentials. Career opportunities aligned with this pathway include hotel or resort manager, event planner, tourism director, marketing coordinator, travel services manager, and hospitality operations supervisor.

Hospitality and Tourism Management I

Course Number: FH31

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Description: Discover how the hospitality and tourism industry is organized. Explore the skills needed to support positive guest interactions and practice creating memorable guest experiences. Examine 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, while 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:

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

Agribusiness and Leadership Pathway

The Agribusiness and Leadership pathway connects on-farm production with global business strategy. Through a focus on financial management, marketing, and organizational leadership, students gain the tools necessary to navigate the modern agribusiness sector. This pathway serves as a launchpad for careers in agricultural marketing, public relations, and corporate agribusiness management.

Foundations of Agriculture

Course Number: AU10

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Description: Develop a foundational knowledge of agriculture to understand its importance on a local and global scale. Explore the areas of plant science, agricultural mechanics, animal science, and natural resources to understand how agricultural food and fiber products are produced, processed, and marketed. Connect research, innovation and technology to the importance of agriculture through its impact on society. 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 Agribusiness and Leadership pathway.

Agribusiness and Leadership

Course Number: AU31

Recommended Maximum Enrollment: 25

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

Prerequisite: AU10 Foundations of Agriculture

Description: Utilize fundamental business management concepts and economic principles to make informed, strategic decisions for businesses in the agriculture industry. Demonstrate communication, teamwork, professionalism, and critical thinking competencies necessary for success in any agriculture career. Execute agricultural sales and marketing strategies to achieve measurable business goals. Build leadership and employability skills through authentic experiences from Supervised Agricultural Experience (SAE), classroom instruction, and FFA participation.

Animal Science Pathway

This Animal Science pathway spans the entire spectrum of animal care, moving from foundational biology to large-scale livestock management and veterinary science. Students develop essential skills in animal nutrition, genetics, and disease control, while mastering the technical hands-on procedures required for animal husbandry and welfare. Through the instructional model of classroom learning, FFA, and work-based learning, students master the essential employability skills needed for high-demand careers in livestock management, veterinary science, and animal nutrition.

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 agriculture industry.

*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 Agriculture Career Cluster.

* 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

The Equine Science pathway provides students with a comprehensive foundation in horse anatomy, physiology, and specialized management practices. Learners develop hands-on technical skills in equine nutrition, healthcare, and facility design while gaining a deep understanding of the industry's economic impact. Participants gain the practical expertise and critical thinking necessary to ensure the health and performance of horses in various athletic and recreational settings. Students also master advanced concepts in genetics, reproduction, and injury prevention, preparing them for professional roles in veterinary medicine, stable management, or agricultural business.

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 Agriculture Career Cluster.

*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

The Food Products and Processing pathway spans foundational culinary and nutrition principles through advanced applications in food science and product development. Students develop core competencies in food preparation, safety and sanitation, meal management, and industry-standard food handling practices, then apply scientific principles to understand food composition, functionality, and processing from farm to table. The pathway emphasizes product innovation, packaging design, quality control, and industry credential attainment to prepare students for technical and commercial roles in the food sector. Career opportunities aligned with this pathway include food scientist, quality assurance technician, food processing specialist, product development technologist, packaging technologist, and food production manager.

Foods I - Fundamentals

Course Number: FS01

Recommended Maximum Enrollment: 20*

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

Prerequisite: None

Description: Explain where food comes from and how it is used. Apply knowledge of nutrients to food choices and safe food preparation skills. Understand the functions of ingredients in cooking and baking. Gain the knowledge and skills for careers in Food and Nutrition Sciences.

*For safety 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: FS01 Foods I – Fundamentals 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

The Plant Systems pathway immerses students in the biological and technical aspects of the horticulture industry through a sequence of specialized courses. Students begin by mastering plant anatomy and growth requirements before transitioning into advanced plant production, landscape design, and ornamental horticulture. Learners gain hands-on experience in hardscaping, site planning, and sustainable practices through the integrated Agricultural Education model of classroom instruction, FFA leadership, and work-based learning. By completing this pathway, students are equipped with the technical skills and creative problem-solving abilities needed for diverse careers such as botany, landscape architecture, and commercial plant production.

Horticulture I – Introduction to Plants Honors

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 the 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 Honors

Description: Design landscapes that meet client demands. Implement landscape installation and maintenance skills 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.

Horticulture II – Plant Production Honors

Course Number: AP42

Recommended Maximum Enrollment: 20*

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

Prerequisite: AP41 Horticulture I – Introduction to Plants Honors

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

The Power, Structural, and Technical Systems pathway equips students with the essential engineering and fabrication skills required for modern agricultural operations. Through a progression of hands-on courses, learners gain expertise in areas of metal fabrication, welding, and the structural design of agricultural facilities. Students also gain specialized technical expertise in the maintenance and repair of small internal combustion engines, focusing on both two-stroke and four-stroke systems. By completing this pathway, participants develop the mechanical aptitude and troubleshooting abilities necessary for high-demand careers in power equipment technology, structural welding, and heavy equipment mechanics.

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

The Sustainable Agriculture pathway moves students from investigating global ecological challenges to implementing high-tech, sustainable production solutions. These courses are centered around scientific advancements in agriculture and the distribution of agricultural products through sustainable practices to optimize global food systems. The content of the courses emphasizes ecological balance, resource conservation, and innovative production methods to meet the growing world demand for food and fiber. Students completing this pathway are prepared for careers such as agronomists, sustainability consultants, agriculture production managers, and food systems analysts.

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

The Clean Energy Technology pathway spans four courses that guide students from foundational concepts to advanced applications of clean energy systems. Students develop skills in applying engineering design processes to real-world problems involving technologies such as solar, wind, biofuels, fuel cells, and energy conservation systems. Throughout the pathway, learners use industry-standard simulation and modeling software, including GIS tools, to analyze energy resources, evaluate system performance, and understand the economic and environmental impacts of energy choices. This pathway prepares students for careers such as renewable energy technician, energy engineer, sustainability specialist, solar or wind energy technician, and energy analyst.

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

The Energy and Power pathway spans four courses that introduce students to the generation, distribution, and use of energy through hands-on, project-based learning. Students develop skills in systems thinking as they explore mechanical, thermal, chemical, electromagnetic, and nuclear energy, along with methods for measuring and controlling energy systems. Throughout the pathway, learners gain experience with power generation technologies, electrical and fluid systems, renewable and nonrenewable energy sources, and the environmental impacts of energy production. This pathway prepares students for careers such as energy technician, electrical engineer, power plant operator, renewable energy specialist, and energy systems engineer.

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

The Innovation in Science and Technology pathway engages students in a contextual, project-based learning environment that introduces and extends core concepts of science, technology, engineering, and mathematics through authentic, real-world applications. Students develop an understanding of the relationships among the physical, biological, and social worlds while exploring the distinction between science as a body of knowledge and technology as the application of that knowledge. Through hands-on projects, students apply scientific inquiry and the engineering design process to solve complex problems, analyze data, and make informed decisions. As they progress, students deepen their problem-solving strategies by examining emerging technologies, sustainability and environmental trends, systems thinking, and predictive analysis. Students integrate literacy and mathematics skills to measure, budget, and evaluate solutions while effectively using technology to complete projects. This pathway prepares students for the 21st-century workforce by fostering critical thinking, adaptability, and the ability to apply interdisciplinary knowledge to innovative and meaningful solutions.

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

The Natural Resources pathway provides students with a deep understanding of ecosystem management, wildlife conservation, and the importance of environmental sustainability. Through the integrated Agricultural Education model of classroom instruction, FFA leadership, and work-based learning, students acquire technical skills such as timber cruising, wildlife and fishery habitat support, and forest management planning. Learners also develop expertise in soil science, water quality analysis, and the protective regulations that govern our natural landscapes. By completing this pathway, participants are prepared for high-demand careers in forestry, park management, and environmental engineering.

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 Honors

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

The Solar Photovoltaics pathway provides students with comprehensive training in the design, installation, and maintenance of solar energy systems. Students develop an understanding of photovoltaic (PV) system components, electrical and mechanical design principles, system sizing, and site assessment procedures. They also gain hands-on experience installing PV arrays, monitoring system performance, maintaining proper documentation, and troubleshooting system issues. This pathway prepares students for careers such as solar PV installer, renewable energy technician, electrical technician, energy systems specialist, and solar service technician.

Solar Photovoltaics I

Course Number: IC71

Recommended Maximum Enrollment: 20*

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

Prerequisite: None

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

The Accounting pathway moves students from foundational accounting concepts to advanced financial and corporate accounting practices. Students develop knowledge of the accounting cycle, payroll, inventory valuation, financial statements, and ethical responsibilities while gaining hands-on experience with industry-standard accounting software. Throughout the pathway, learners build analytical, problem-solving, and fiscal management skills used to track, analyze, and report business financial information. This pathway prepares students for careers such as accountant, accounting clerk, payroll specialist, bookkeeper, financial analyst, and auditor.

Accounting I Honors

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 Honors

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

The Economics pathway builds from foundational business and economic principles to advanced, college-level economic analysis. Students develop an understanding of microeconomic and macroeconomic concepts, including markets, supply and demand, national income, economic growth, and the role of government in the economy. Throughout the pathway, learners strengthen analytical, quantitative, and critical-thinking skills by using graphs, data, and real-world scenarios to evaluate economic decision-making. This pathway aligns with careers such as economist, financial analyst, policy analyst, market research analyst, business consultant, and roles in government or finance.

AP Business with Personal Finance

Course Number: 0A03

Recommended Maximum Enrollment: 30

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

Prerequisite: None

Description: AP Business with Personal Finance introduces students to the knowledge and skills they will need to grow their careers, manage money, and get a head start toward the most popular college major in the U.S. Developed in partnership with college faculty and industry leaders, the course offers students the opportunity to earn college credit.

* Students should be able to read a college-level textbook and to express themselves clearly in writing.

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

The Financial Planning pathway progresses from foundational business principles to advanced personal and business financial planning strategies. Students develop knowledge in financial analysis, investing, wealth building, risk management, insurance, taxes, and ethical financial decision-making. Throughout the pathway, learners build practical skills by evaluating investment opportunities, creating financial plans, analyzing market trends, and understanding the impact of the global economy on financial decisions. This pathway prepares students for careers such as financial planner, investment advisor, financial analyst, wealth manager, loan officer, and risk management specialist.

Financial Planning I

Course Number: BF21

Recommended Maximum Enrollment: 30

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

Prerequisite: BF10 Business Essentials OR 0A03 AP Business with Personal Finance

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

Artificial Intelligence

Course Number: CA10

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Description: Explore how generative AI models process data and create text, images, and videos. Use prompts to design and improve AI-generated content for school and real world projects. Examine ethical, legal, and social issues connected to AI use while learning how to check for accuracy and bias. Gain the cross-cutting knowledge and skills for careers in any CTE career pathway.

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: 135 (block) 150 (regular)

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

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.

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 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.

IB Computer Science HL

Course Number: 0I03

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: 0I02

Recommended Maximum Enrollment: 30

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

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: 135 (block) 150 (regular)

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 Digital Society HL

Course Number: 0I05

Recommended Maximum Enrollment: 30

Hours of Instruction: 240

Prerequisite: None

Description: This course is designed for young people interested in exploring the impact and importance of digital systems and technologies in the contemporary world. Digital Society is intended to appeal to a broad range of students in the social studies, media, humanities, IT, and related subject areas. The course integrates concepts, content, and contexts through inquiry. HL students consider important contemporary challenges and digital interventions.

IB Digital Society SL

Course Number: 0I04

Recommended Maximum Enrollment: 30

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

Prerequisite: None

Description: This course is designed for young people interested in exploring the impact and importance of digital systems and technologies in the contemporary world. Digital Society is intended to appeal to a broad range of students in the social studies, media, humanities, IT, and related subject areas. The course integrates concepts, content, and contexts through inquiry.

IB Economics HL

Course Number: 4I02

Recommended Maximum Enrollment: 30

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

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: 135 (block) 150 (regular)

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: 135 (block) 150 (regular)

Prerequisite: None

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

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: 135 (block) 150 (regular)

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.

Introduction to IT Systems and Support

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 computer engineering.

PLTW Computer Science Essentials

Course Number: CS40

Recommended Maximum Enrollment:

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

Prerequisite: None

Description: This course introduces students to coding fundamentals through block-based programming language where they will have early success in creating usable apps. As students sharpen their computational thinking skills, they will transition to programming environments that reinforce coding fundamentals by displaying block programming and text-based programming side-by-side. Finally, students will learn the power of text-based programming as they are introduced to the Python programming language.

PLTW Cybersecurity

Course Number: CI35

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Description: Secure systems and servers by examining architecture, assessing vulnerabilities, detecting exploits, and strengthening firewalls, web services, and eCommerce platforms. Analyze network threats through packet inspection, topology exploration, operating system commands, process monitoring, and penetration testing to protect against malware. Apply advanced cybersecurity practices by encrypting data, performing digital forensics, tracing digital footprints, and solving simulated cybercrimes using professional tools. Gain the knowledge and skills for careers in the Digital Technology and Computer Science Career Cluster.

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 local needs that are not addressed by courses in this document, that PSU can apply to offer a Local Course Option (LCO). LCOs require thoughtful, advanced planning and intentional design. Each course must be formally submitted, reviewed, and approved as a new course or renewal prior to being advertised or offered to students. PSUs are encouraged to consult with their assigned CTE Regional Coordinator throughout the development and approval process.

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 OF TERMS USED IN THIS DOCUMENT

Career Clusters are smaller groupings of occupations used as an organizing tool for curriculum design and instruction. This approach helps students understand the relevance of their coursework and provides a clear framework for selecting electives that support their career goals.

Career Pathway Major courses provide aligned specificity in a Career Pathway and can include either an Advanced Studies course, Work-based Learning course, or a course with aligned content that deepens student expertise. The pathway concentrator course must be completed before enrollment in a career pathway major.

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 career pathways based on the set of common knowledge and skills required for career success. For information on a pathway's course progression, see the [NCCTE Course Management System](#).

Cluster Groupings are very broad categories which help guide learners toward clusters that match their personal interests, sense of purpose, and the positive impact they want to make on their communities.

Concentrators are students who have successfully completed a Concentrator course in an approved Career Pathway.

Concentrator courses are second- or third-level courses in the Career Pathway that builds upon technical skills acquired in a prerequisite course.

Foundational Prerequisite courses provide the fundamental knowledge and skills necessary for student success.

Industry-Recognized Credentials are 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. It provides evidence of authority, status, rights, and entitlement to privileges.

Maximum enrollment indicates the maximum number of students who can be enrolled in a course based on legal and safety requirements.

Prerequisite courses provide fundamental or intermediate knowledge and skills for student success in secondary and post-secondary education and careers in the Career Pathway and should be completed prior to enrolling in a concentrator pathway course.

Recommended maximum enrollment indicates the recommended maximum number of students who should be enrolled in a course based on best educational practice.

Supplemental Employability courses provide durable employability skills which are relevant across all career pathways. These skills are valued by employers and prepare students for career success in whichever path they choose.

Supplemental Technical courses provide knowledge and skills which, while not within the career pathway directly, contribute to the knowledge and skills valuable to careers in the pathway and may provide students with an advantage as they pursue a career or post-secondary education.