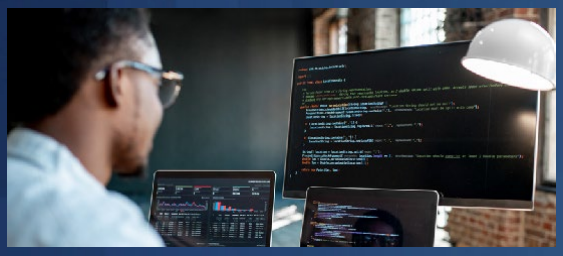
NORTH CAROLINA

CTE Course Inventory and Essential Standards

CAREER AND TECHNICAL EDUCATION **2022-2023**



Agricultural Education

Business, Finance, and Marketing Education

Career Development Education

Computer Science and Information Technology Education

Family and Consumer Sciences Education

Health Science Education

Trade, Technology, Engineering, and Industrial Education

North Carolina Department of PUBLIC INSTRUCTION

Learning that works for North Carolina CTE™

North Carolina
CAREER AND TECHNICAL EDUCATION
COURSE INVENTORY AND ESSENTIAL STANDARDS

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

For information, contact ctecurriculum@dpi.nc.gov

This document goes into effect in July 2022.

STATE BOARD OF EDUCATION

STATE BOARD OF EDUCATION VISION: Every public school student in North Carolina will be empowered to accept academic challenges, prepared to pursue their chosen path after graduating high school, and encouraged to become lifelong learners with the capacity to engage in a globally-collaborative society.

STATE BOARD OF EDUCATION MISSION: The mission of the North Carolina State Board of Education is to use its constitutional authority to guard and maintain the right of a sound, basic education for every child in North Carolina Public Schools.

ERIC DAVIS
Chair: Charlotte – At-Large

ALAN DUNCAN
Vice Chair: Greensboro – Piedmont-Triad Region

MARK ROBINSON
Lieutenant Governor: High Point – Ex Officio

DALE FOLWELL
State Treasurer: Raleigh – Ex Officio

CATHERINE TRUITT
Superintendent & Secretary to the Board: Cary

JILL CAMNITZ
Greenville – Northeast Region

REGINALD KENAN
Rose Hill – Southeast Region

AMY WHITE
Garner – North Central Region

OLIVIA OXENDINE
Lumberton – Sandhills Region

VACANT
Southwest Region

TODD CHASTEEN
Blowing Rock – Northwest Region

DONNA TIPTON-ROGERS
Brasstown – Western Region

J. WENDELL HALL
Ahoskie – At-Large

JAMES FORD
At-Large

The above State Board of Education information is a record of the board members at the time of this document's approval for publication.
For the current list of State Board Members, Vision and Mission Statements, go to https://stateboard.ncpublicschools.gov.

NC DEPARTMENT OF PUBLIC INSTRUCTION

Catherine Truitt, State Superintendent / 301 N. Wilmington Street / Raleigh, North Carolina 27601-2825

In compliance with federal law, the NC Department of Public Instruction administers all state-operated educational programs, employment activities and admissions without discrimination because of race, religion, national or ethnic origin, color, age, military service, disability, or gender, except where exemption is appropriate and allowed by law.

Inquiries or complaints regarding discrimination issues should be directed to:
Thomas Thomberlin, Director of Educator Recruitment and Support, NCDPI 6301 Mail Service Center, Raleigh, NC 27699/ Phone: (984) 236-2114 / Fax: (984) 236- 2099

Visit us on the Web: www.dpi.nc.gov

0720

TABLE OF CONTENTS

INTRODUCTION

CAREER AND COLLEGE READY

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

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

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

COURSE INVENTORY AND ESSENTIAL STANDARDS

The 2022 CTE Course Inventory and Essential Standards document was approved by the North Carolina State Board of Education in November 2021 and goes into effect for the 2022-2023 academic year. The document contains program area, course descriptions, and links to essential standards by course. This information was previously part of the Career and Technical Education Standard Course of Study Guide but has been revised as part of the North Carolina Department of Public Instruction Accountability and Curriculum Reform Effort with emphasis on Essential Standards. Public School Unit (PSU) CTE administrators work with individual schools to select appropriate courses from among those in this document.

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

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

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

1. **Courses Developed by the Department of Public Instruction**
   Courses developed by the state are designed to meet the needs/standards of business and industry. They include a blueprint of essential standards, supporting objectives, and relative objective weights. These courses provide a curriculum product and aligned Proof of Learning (POL). All products developed since 2006 are aligned using the Revised Bloom's Taxonomy.
2. **Courses Adapted by the Department of Public Instruction**
   In some cases, curriculum is available from multiple vendors and a blueprint is needed to direct the learning of students. An Adapted Course Blueprint is developed with essential standards, indicators, and relative essential standard weights. This type of blueprint is often used when an industry credential is available for the course.

3. **Courses Using Adopted Curriculum**
   In some cases, a sole source is recognized as a provider of curriculum in a specialty area, and the course is adopted fully from a third-party vendor. Materials for these courses are usually purchased by thePSU and typically include assessments.
4. **Courses Approved as Local Course Options**
   If a PSU recognizes needs that are not addressed by courses in the Course Inventory and Essential Standards, that PSU can request authorization to offer a Local Course Option. A Local Course Option requires considerable planning and preparation. Each local course must be approved before it is advertised and offered to students. More information about Local Course Options appears in Appendix A.

CAREER CLUSTERS™ AND PROGRAMS OF STUDY

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

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

Sixteen Career Clusters™

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

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

WORK-BASED LEARNING

All Career and Technical education courses in North Carolina offer work-based learning opportunities for students. Work-based learning opportunities for each course are identified with its course description.

- **Apprenticeship:** a system of skilled occupational training that combines practical work experiences with related academic and technical instruction.
- **Business and Industry Field Trip:** a short-term visit to a business or agency expands the learning opportunities for participating students.
- **Cooperative Education:** a method of instruction where technical classroom instruction is combined with paid employment that is directly related to the classroom instruction.
- **Entrepreneurial Experience:** involves students developing knowledge and proficiency in running a business. Students gain work-place skills and develop an understanding of how to manage a business and are responsible for all risks.
- **Internship:** a work-based learning experience where a student participates in the daily operations of a work site under the direct supervision of a business mentor. Students must pass the pathway concentrator course **and** internship course for the internship to count as a career pathway major course.
- **Job Shadowing:** a short-term (usually a half day) educational experience that introduces a student to a particular job or career by pairing the student with an employee of a business, industry, or agency.
- **Mentorship:** involves pairing a student (mentee or protégé) with a community professional (mentor) in a one-to-one relationship with the intent of providing first-hand experience in a career field/cluster of the student's choice.
- **School Based Enterprise:** a simulated or actual business conducted by a school that creates a student learning experience that creates direct links between the classroom learning and the world of work.
- **Service Learning:** a work-based learning strategy that combines community service with Career and Technical learning goals. Students provide volunteer service to public and non-profit agencies, as well as to civic, charitable, and governmental organizations in the local community.

WORK-BASED LEARNING IMPLEMENTATION

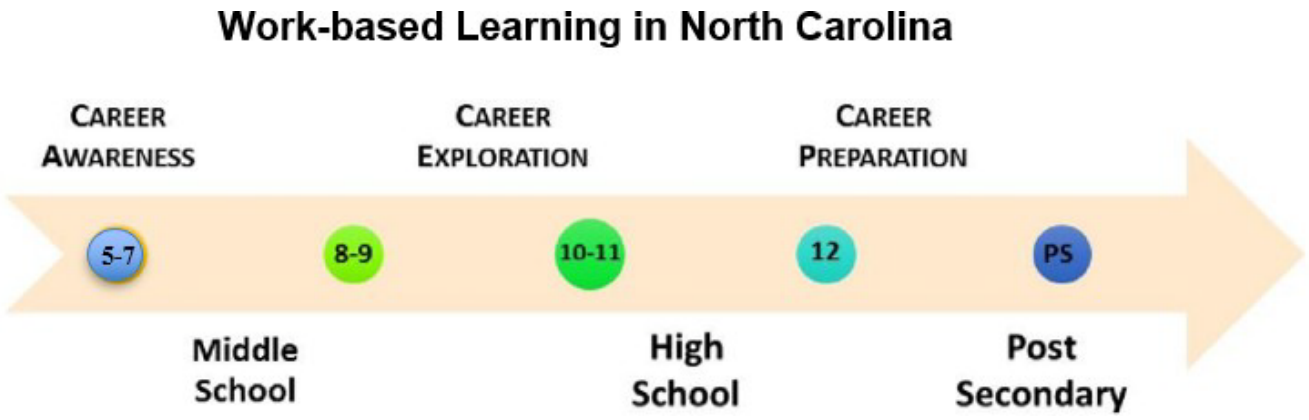
Building the bridge for work-based learning and the various pathways for career success involves many facets for many stakeholders. As we build a useable, interactive roadmap and guide for our youth, it is the primary goal of the Work-based Learning Guide to help stakeholders, educators, parents, students, business, and industry to have resources and tools that are easily navigated and understandable.

The first step to understanding work-based learning and the many career pathways is to understand how important each aspect of career development is for the stakeholder involved at that precise period of time of career awareness, exploration, and preparation.

Work-based Learning is an integral part of all Career and Technical courses in North Carolina to show curricular relevance to industry trends. The following Work-based Learning continuum offers the opportunity for students in middle through high school to experience the implementation of work-based learning in a variety of settings.

Work-based Learning settings include:

- Career Awareness in grades 5-7
- Career Exploration in grades 8-11
- Career Preparation in grades 12 and post-secondary



CAREER AWARENESS

Students will begin to understand how school relates to the “world of work“ through businesses, parents, and adults who “share and tell” their story about their profession and why they love their job.

During career awareness, middle school students will be given the opportunity to:

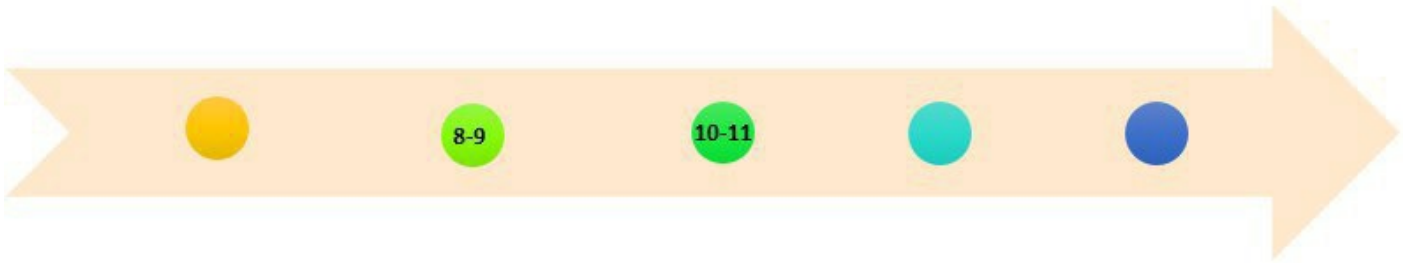
- understand how school relates to the world of work.
- become aware of different careers and career pathways.
- experience field trips to various businesses and industries.
- participate in community volunteer organizations and service-learning projects.
- embrace classroom assignments and project-based learning around specific industries.
- become involved in school-based business entrepreneurship projects.
- hear guest speakers from industry experts.
- visit theme-specific high schools that are of interest to them via class tours and open houses.

The Students@Work is a project of the North Carolina Business Committee for Education in partnership with the North Carolina Department of Public Instruction. The goal is for North Carolina businesses to help middle school students in their community see the opportunities that exist in the workplace.

Other opportunities for developing career awareness include:

- Job shadowing
- Classroom visits
- Field trips to various business and industry
- Assignments aligned with career exploration and discovery
- Job visits with parent/guardian for the day

CAREER EXPLORATION

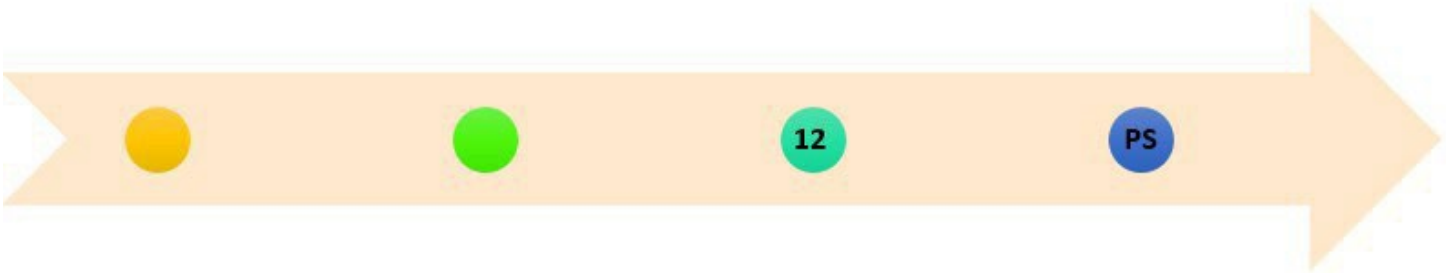


Students will develop an in-depth understanding of the working world with an understanding of the importance of career discovery. Course work and project-based learning support discovery of various careers in numerous occupations as well as the needed educational foundation and prerequisite needed to be successful in a specific career pathway.

During career exploration, middle and high school students (8-11) will:

- understand how school relates to the world of work.
- research and design a career interest.
- take an inventory assessment to help align specific educational courses and career goals.
- develop an understanding of various occupations within a specific career theme/pathway.
- become aware of how specific skills are needed to be successful in the work world.
- research, design and develop a plan for post-secondary training and education for a specific career pathway.

CAREER PREPARATION



Students will develop and possess the needed skills for college and career readiness via classroom academic and work-based skills needed in the world. Students will develop soft skills, relationship building tools, teamwork development, successful communication and business attributes sought from employers.

During career preparation, high school students (12 to post-secondary) will:

- develop needed skill-building aptitudes sought from all employers.
- know and understand the function and the skills needed to be successful in a specific career.
- be able to seek resources to find a specific career/job.
- have the core knowledge to be successful in a particular career pathway.
- understand and possess the appropriate work attitude, characteristics and professionalism needed for a successful work placement.
- develop an understanding of various occupations within a specific career theme/pathway.
- become aware of how specific skills are needed to be successful in the work world.
- research and design a career interest inventory that will help align their courses and career goals.
- develop career and educational goals that align with their selected career pathway.
- follow and utilize post-secondary training opportunities and education to design their own career pathway.
- apply for a specific job or work-based learning experience via employment protocol methods utilizing the following: cover letters, resumes, interviewing skills, application forms, and thank you/follow-up letters.

AGRICULTURAL EDUCATION
PROGRAM DESCRIPTION

Agricultural education provides systematic instruction to students in the areas of agriculture, food, and natural resources. Through these subjects, agricultural educators teach students a wide variety of skills, including science, math, communications, leadership, management, and technology. Agricultural education prepares students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber, and natural resources systems.

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

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

Career pathways that students may pursue include:

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

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

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

Agricultural Mechanics I

Course Number: AS31

Recommended Maximum Enrollment: 20*

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

Prerequisite: None

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: OSHA 10-Hour General Industry (Agriculture) Certificate
Certified Welders per Welding Code AWS D1.1
National Safe Tractor and Machinery Operation Certification

Description: This course develops knowledge and technical skills in the broad field of agricultural machinery, equipment, and structures. The primary purpose of this course is to prepare students to handle the day-to-day problems and repair needs they will encounter in their chosen agricultural career. Topics include agricultural mechanics safety, agricultural engineering career opportunities, hand/power tool use and selection, electrical wiring, fencing, paints and preservatives, basic metal working, basic agricultural construction skills related to plumbing, carpentry, basic welding, and leadership development. English language arts, mathematics, and science are reinforced.
* Course enrollment limited to 20 to ensure safety in laboratory settings.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Agricultural Mechanics II

Course Number: AS32

Recommended Maximum Enrollment: 20

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

Prerequisite: AS31 Agricultural Mechanics I

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: OSHA 10-Hour General Industry (Agriculture) Certification
Certified Welders per Welding Code AWS D1.1
National Safe Tractor and Machinery Operation Certification

Description: In this course, the topics of instruction emphasized are non-metallic agricultural fabrication techniques, metal fabrication technology, safe tool and equipment use, human resource development, hot/cold metal working skills and technology, advanced welding and metal cutting skills, working with plastics, plumbing, concrete and masonry, agricultural power and advanced career exploration/decision making. English language arts, mathematics, and science are reinforced.
*Course enrollment limited to 20 to ensure safety in laboratory settings.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Agricultural Mechanics II - Small Engines

Course Number: AS33

Recommended Maximum Enrollment: 20

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

Prerequisite: AS31 Agricultural Mechanics I

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: North Carolina Competency Certification

Description: This course is provided for the upper-level agricultural mechanics student who wishes to apply the basic knowledge of small engines acquired through on-line Briggs and Stratton training modules delivered by the agricultural education teacher in a shop setting. The course is intended to provide students with experiential learning opportunities as they perform "hands-on" skills specified in the curriculum under the direct supervision of the agriculture teacher. This "learning to do" philosophy will enable students to understand curriculum content so that they may pass the Briggs and Stratton Competency Exam and receive certification from Briggs and Stratton. English, language arts, mathematics, and science are reinforced.
*Course enrollment limited to 20 to ensure safety in laboratory settings.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Agricultural and Environmental Biotechnology

Course Number: AY12
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization
Aligned Industry Credential: None
Description: Students engage in hands on activities to analyze the science of plants, food, and animals in agricultural biotechnology. Analyzing components of industrial biotechnology and evaluating environmental biotechnology applications reinforce the concepts. Work-based learning opportunities and leadership development engage students in the development of their career development plan.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Agriculture and Our Social and Economic Well-Being

Course Number: AY25
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization (FFA)
Aligned Industry Credential: None
Description: Students learn the importance of agriculture to social and economic well-being. Students interpret how agriculture supports life and how advances in the industry have helped society. A focus on agriculture careers and skills needed to be successful guide students through their work-based learning opportunities and leadership development.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Agriscience Applications

Course Number: AU10

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: NC Hunter Safety Course
National Safe Tractor and Machinery Operation Certification
Certified Welders per Welding Code AWS D1.1

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Animal Science I

Course Number: AA21

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: NC Beef Quality Assurance
Youth for the Quality Care of Animals (YQCA) Certification

Description: This course focuses on animal physiology, breeding, nutrition, health, and best management practices in preparation for an animal science career. Leadership development and employability skills are integral to the course and are delivered through authentic experiences. English language arts, mathematics, and science are reinforced in this class.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Animal Science II – Companion Animal

Course Number: AA23

Recommended Maximum Enrollment: 25

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

Prerequisite: AA21 Animal Science I

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: Canine Care and Training Program (CCTP)

Description: This course focuses on animal welfare, safe handling practices, nutrition, digestion, breeding, grooming, care, classification, and the history of the companion animal industry. Leadership development and employability skills are integral to the course and are delivered through authentic experiences. English language arts, mathematics, and science are reinforced in this class.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Animal Science II – Food Animal

Course Number: AA22

Recommended Maximum Enrollment: 25

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

Prerequisite: AA21 Animal Science I

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: NC Beef Quality Assurance
Youth for the Quality Care of Animals (YQCA) Certification
National Beef Quality Assurance Cow/Calf Certification
National Beef Quality Assurance Feedyard Certification

Description: This course focuses on animal anatomy, physiology, digestion, reproduction, housing and facilities, management, and genetics of the food animal industry. Leadership development and employability skills are integral to the course and are delivered through authentic experiences. English language arts, mathematics, and science are reinforced in this class.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Drone Technology Fundamentals

Course Number: ID10

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

Drone Technology I

Course Number: ID11

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

Drone Technology II

Course Number: ID12

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

Equine Science I

Course Number: AA31

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: None

Description: This course focuses on the basic scientific principles and processes related to equine physiology, breeding, nutrition, and care in preparation for a career in the equine industry. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Equine Science II

Course Number: AA32

Recommended Maximum Enrollment: 25

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

Prerequisite: AA31 Equine Science I

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: Equine Management and Evaluation Certification

Description: The course focuses on more advanced applications of feeding, breeding, and management - practices involved in the horse industry. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Exploring Agricultural Issues

Course Number: AY23

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: None

Description: Students bridge their understanding of science and research within the agricultural industry and technology. Gaining an understanding of current issues and challenges affecting the agricultural industry and economy helps mold students into advocates in their community. Work-based learning opportunities and leadership development engage students in the development of their career development plan.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Animal and Plant Science

Course Number: AY21
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization
Aligned Industry Credential: None
Description: Students gain an understanding of the fundamentals of the animal and plant science industry. Through hands-on activities, students understand the importance of animal/plant product uses, animal welfare and care practices, and basic plant physiology. Work-based learning opportunities and leadership development engage students in the development of their career development plan.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Environmental and Natural Resources

Course Number: AY20
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization
Aligned Industry Credential: None
Description: Students gain understanding of the relationship between natural resources and the production of food and fiber, including the role of alternative energy in the agricultural industry. An emphasis on environmental stewardship within the agricultural industry as it impacts plant and animal production helps students engage in practicing strategies for effectively using resources in the agricultural industry. Work-based learning opportunities and leadership development engage students in the development of their career development plan.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Food and Agricultural Products

Course Number: AY22
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization
Aligned Industry Credential: None
Description: Students become informed consumers of food and agricultural products by understanding the processes to provide safe agricultural products for consumption. Processes covered include converting agricultural products into food and fiber products and the marketing and labeling principles that help consumers. Work-based learning opportunities and leadership development engage students in the development of their career development plan.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Fundamentals of the Agricultural Science Program

Course Number: AY24
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization
Aligned Industry Credential: None
Description: Students learn the importance of stewardship which is emphasized through hands-on experiences. Students learn appropriate safety procedures for the various agricultural education learning environments. Students implement foundational work-based learning experiences and develop leadership skills and life skills through agriculture and community settings.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Fundamentals of Biotechnology

Course Number: AY10

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: None

Description: Students are introduced to common terminology and mathematical concepts used in the biotechnology industry. An emphasis on laboratory safety and infection control will help students understand methods used for protecting the safety of biotech workers and the public. Through the use of scientific inquiry and problem solving, students will investigate cellular design and DNA. Work-based learning opportunities and leadership development will engage students in the development of their career development plan.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Horticulture I

Course Number: AP41

Recommended Maximum Enrollment: 20

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

Prerequisite: None

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: None

Description: This course provides instruction on the broad field of horticulture with emphasis on the scientific and technical knowledge for a career in horticulture. Topics in this course include plant growth and development, plant nutrition, media selection, basic plant identification, pest management, chemical disposal, customer relations, and career opportunities. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Horticulture II

Course Number: AP42

Recommended Maximum Enrollment: 20

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

Prerequisite: AP41 Horticulture I

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Horticulture II - Landscaping

Course Number: AP44

Recommended Maximum Enrollment: 20

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

Prerequisite: AP41 Horticulture I

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Introduction to Biotechnology

Course Number: AY11
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization
Aligned Industry Credential: None
Description: Students understand basic theories and historical developments in biotechnology. Students learn concepts and examples of biotechnology while discussing historical applications of biotechnology and notable figures in history who contributed to concepts in biotechnology. The analysis and discussion of careers in biotechnology, biomanufacturing, and bioinformatics in both agriculture and healthcare help show students possible pathways for their future. Each student develops a career development plan that will help them demonstrate the leadership skills they learn through program activities.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Natural Resources I

Course Number: AN51
Recommended Maximum Enrollment: 25
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization
Aligned Industry Credential: NC Hunter Safety Course
Description: This course provides an introduction to environmental studies, which includes topics of instruction in renewable and non-renewable natural resources, history of the environment, personal development, water and air quality, waste management, land use regulations, soils, meteorology, fisheries, forestry, and wildlife habitat. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Natural Resources II

Course Number: AN52

Recommended Maximum Enrollment: 25

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

Prerequisite: AN51 Natural Resources I

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: NC Hunter Safety Course

Description: This course covers instruction in best management practices in methods of environmental monitoring and conservation, air and water regulations, sampling methodologies, prescribing conservation techniques, and wildlife and forestry management. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Project Management I

Course Number: CS11

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

Project Management II

Course Number: CS12

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

Sustainable Agriculture Production I

Course Number: AU21

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: None

Description: This course focuses on the increasingly complex world of producing enough food and fiber to meet the growing world demand and at the same time maintain ecological balance and conserve our natural resources. Students will explore implementing environmentally sound practices in agricultural production to satisfy the needs of a growing population for today and tomorrow. A breadth of topics including crop and animal production, natural resource management, agroforestry, food safety, and the farm-to-fork continuum will set the educational stage for this course. Leadership development and employability skills are integral to the course and are delivered through authentic experiences. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Sustainable Agriculture Production II

Course Number: AU22

Recommended Maximum Enrollment: 25

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

Prerequisite: AU21 Sustainable Agriculture Production I

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: Certified Level Beekeeper

Description: Sustainable Agriculture Production II further investigates food production through practice and application of principles and knowledge established in Sustainable Agriculture Production I. An emphasis on proven methods employed to sustain a growing population are woven into all facets of the course. Students gain knowledge of 21st century agriculture through further exploration of renewable energy, precision agriculture, biotechnology, and breeding programs. Students discover cultivation of bees, aquaponics, mushrooms, vermicomposting and commodities of their choice while applying food safety and industry standards for sustainable production. Students also acquire foundations of leadership, business, and marketing principles necessary for competitive sustainable agricultural companies, and individuals in the workforce are also reinforced in this course. Leadership development and employability skills are integral to the course and are delivered through authentic experiences. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Veterinary Assisting

Course Number: AA41

Recommended Maximum Enrollment: 15

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

Prerequisite: AA22 Animal Science II – Food Animal or AA23 Animal Science II - Companion Animal (Designed for 11th or 12thgrade students with an interest in animal medicine) or AA32 Equine Science II

Aligned Career Technical Student Organization: North Carolina FFA Association and National FFA Organization

Aligned Industry Credential: Elanco Veterinary Medical Applications Certification
Certified Veterinary Assistant

Description: This course provides instruction for students desiring a career in animal medicine. Topics include proper veterinary practice management and client relations, pharmacy and laboratory procedure, advanced animal care, and surgical/radiological procedures. Applied mathematics, science and writing are integrated throughout the curriculum. Advanced FFA leadership will be infused throughout the curriculum to develop the student's ability to work with the public. All aspects of this course will feature hands-on skill sets designed to enhance experiential learning. English language arts, mathematics, and science are reinforced. Work-based learning strategies appropriate for this course are cooperative education, internship, mentorship, service-learning job shadowing and supervised agricultural experience. FFA competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace readiness skill through authentic experiences.
Students who wish to take the Veterinary Assisting Exam developed by Texas Veterinary Medical Association to be a Certified Veterinary Assistant (CVA) Level 1 should complete an additional 500 hours of supervised agricultural experience (SAE) during their three animal science courses. Two hundred SAE hours focus on the care and management of animals; will be substantiated by records and conducted under the direct supervision of the agricultural teacher. Hours may be earned any time during the year including summer months. An additional 300 hours of supervised agricultural experience (worked based learning) will be conducted as an internship program in animal medicine under the supervision of a licensed veterinarian or certified veterinary technician who will attest that participating students have mastered a standard set of skills used in animal medicine as identified by the cooperating teacher. Hours may be earned any time during the year including summer months.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

CTE Advanced Studies

Course Number: WB01 (AGNR)

Recommended Maximum Enrollment: 25

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This culminating course is for juniors and seniors who have earned two technical credits, one of which is a completer course, in one Career Pathway. The Advanced Studies course must augment the content of the completer course and prepare students for success in transitioning to postsecondary education and future careers. Students work under the guidance of a teacher with expertise in the content of the completer course in collaboration with community members, business representatives, and other school-based personnel. The four parts of the course include writing a research paper, producing a product, developing a portfolio, and delivering a presentation. Students demonstrate their abilities to use 21st century skills. Competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace readiness skills through authentic experiences.

CTE Apprenticeship

Course Number: WB02 (AGNR)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: Students who participate in apprenticeships or pre-apprenticeships through Apprenticeship NC and the North Carolina Department of Labor can also earn CTE credit while they earn hours and experience toward an adult apprenticeship leading to a completed journeyman certificate.

CTE Career and College Promise

Course Number: Various

Recommended Maximum Enrollment: Varies

Hours of Instruction: Does not apply

Prerequisite: None

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

Aligned Industry Credential: None

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

CTE Entrepreneurial Experience

Course Number: WB04 (AGNR)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This course involves students developing knowledge and proficiency in running a business. Students gain work-place skills, develop an understanding of how to manage a business, and are responsible for all risks.

CTE Internship

Course Number: WB03 (AGNR)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: A CTE Internship allows for additional development of career and technical competencies within a general career field. Internships allow students to observe and participate in daily operations, develop direct contact with job personnel, ask questions about particular careers, and perform certain job tasks. This activity is exploratory and allows the student to get hands-on experience in a number of related activities. The teacher, student, and the business community jointly plan the organization, implementation, and evaluation of an internship, regardless of whether it is an unpaid or paid internship.

BUSINESS, FINANCE, AND MARKETING EDUCATION
PROGRAM DESCRIPTION

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

Career pathways that students may pursue include:

- Accounting
- Economics
- Entrepreneurship
- Financial Planning
- General Management
- Marketing Management
- Project Management
- Sales
- Sport and Event Marketing
- Travel and Tourism

Future Business Leaders of America (FBLA) inspires and prepares students to become community-minded business leaders in a global society through relevant career preparation and leadership experiences. FBLA programs focus on leadership development, which includes essential soft skills; academic competitions; educational programs in which members create career portfolios, enhancing their knowledge with world-recognized skills certifications; and access to select college scholarships.

An Association for Marketing Education Students (DECA), the Career and Technical Student Organization for marketing students, complements the class and work experiences by allowing students to develop practical presentation, decision making, and leadership skills. Work-based learning experiences, including Cooperative Education, are strongly encouraged to add relevancy to classroom instruction.

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

Accounting I

Course Number: BA10

Recommended Maximum Enrollment: 30

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

Prerequisite: None

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

Aligned Industry Credential: Intuit QuickBooks Certified User

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Accounting II

Course Number: BA20

Recommended Maximum Enrollment: 25

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

Prerequisite: BA10 Accounting I

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

Aligned Industry Credential: Intuit QuickBooks Certified User

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Business Essentials

Course Number: BF10

Recommended Maximum Enrollment: 30

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: This course will introduce students to realistic business and finance principles by examining fundamental economic concepts, the business environment, and primary business activities. Through workplace scenarios and problem-based learning, students will explore business ethics, customer relations, economics, financial analysis, human resources management, information management, marketing, operations, and business technology.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Business Law

Course Number: BB30

Recommended Maximum Enrollment: 30

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

Prerequisite: None

Aligned Career Technical Student Organization: Future Business Leaders of America (FBLA)

Aligned Industry Credential: None

Description: This course is designed to acquaint students with the basic legal principles common to all aspects of business and personal law. Business topics include contract law, business ownership including intellectual property, financial law, and national and international laws. Personal topics include marriage and divorce law, purchasing appropriate insurance, renting and owning real estate, employment law, and consumer protection laws. Social studies and English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Business Management I

Course Number: BB40

Recommended Maximum Enrollment: 30

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

Prerequisite: BF10 Business Essentials

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

Aligned Industry Credential: None

Description: This course is designed to introduce students to core management concepts. The experience includes how managers plan, organize, staff, and direct the business's resources that enhance the effectiveness of the decision-making process. Students will work through ethical dilemmas and problem-solving situations with customer service while applying academic and critical-thinking skills. English language arts is reinforced.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Business Management II

Course Number: BB42

Recommended Maximum Enrollment: 25

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

Prerequisite: BB40 Business Management I

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

Aligned Industry Credential: None

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Drone Technology Fundamentals

Course Number: ID10

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

Drone Technology I

Course Number: ID11

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

Drone Technology II

Course Number: ID12

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

Entrepreneurship I

Course Number: ME11

Recommended Maximum Enrollment: 30

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

Prerequisite: None

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

Aligned Industry Credential: Venture Entrepreneurial Expedition

Description: In this course, students evaluate the concepts of going into business for themselves and working for or operating a small business. They become acquainted with channel management, pricing, product/service management, and promotion. Emphasis is on the exploration of feasible ideas of products/services, research procedures, business financing, marketing strategies, and access to resources for starting a small business. Students will be introduced to the Lean Canvas Business Model (LCBM) throughout the course. English language arts and social studies are reinforced

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Entrepreneurship II

Course Number: ME12

Recommended Maximum Enrollment: 25

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

Prerequisite: ME11 Entrepreneurship I

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

Aligned Industry Credential: Entrepreneurship and Small Business Certification Exam
Venture Entrepreneurial Expedition

Description: In this course, students continue the development of a business idea and develop an understanding of pertinent decisions to be made for business positioning, financing, staffing, and profit planning. Students acquire in-depth understanding of business regulations, risks, management, and marketing and will develop a business plan. English language arts, mathematics, and social studies are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Exploring Business Activities

Course Number: BY12

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

Description: Students learn the basics of business activities and various careers. A variety of business-related fields are introduced including finance, management, information technology, marketing, and entrepreneurship.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Business and Entrepreneurship

Course Number: BY10
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)
Aligned Industry Credential: None
Description: Students learn the principles of business and the concepts of entrepreneurship. A focus on the necessary characteristics for being an entrepreneur will aid students in developing their career and life plan. Students learn the procedures and requirements for starting and running a business.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Business Procedures and Leadership

Course Number: BY13
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)
Aligned Industry Credential: None
Description: Students are introduced to a variety of business procedures and basics of leadership. Students learn life-long career success building skills like business etiquette, ethics and how to seek, gain, and maintain employment. Students also learn leadership skills including communication, team building, collaboration, and other desirable traits.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Economic Systems

Course Number: BY11

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

Description: Students are introduced to the basics of economics. Students compare the types of economic systems and learn about the United States economic system. The curriculum covers such concepts as supply and demand, the stock market, e-commerce, and the Federal Reserve.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Fashion Merchandising

Course Number: MI21

Recommended Maximum Enrollment: 30

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: This course is designed to simulate a comprehensive experience of the business of fashion. The experience should bring alive the economics, distribution, promotion, and retail of fashion, and essential strategies of promoting and selling fashion. Upon completion of the course, students should be ready for entry-level fashion retail work or post-secondary education. English, mathematics, social studies, and technology are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Financial Planning I

Course Number: BF21

Recommended Maximum Enrollment: 30

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

Prerequisite: BF10 Business Essentials

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

Aligned Industry Credential: None

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Financial Planning II

Course Number: BF22

Recommended Maximum Enrollment: 25

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

Prerequisite: BF21 Financial Planning I

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

Aligned Industry Credential: None

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Hospitality and Tourism

Course Number: MH42

Recommended Maximum Enrollment: 30

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

Prerequisite: MM51 Marketing or BF10 Business Essentials or MH31 Sport and Event Marketing I

Aligned Career Technical Student Organization: An Association for Marketing Education Students (DECA)

Aligned Industry Credential: Certified Guest Service Professional (CGSP)

Description: In this course, students acquire understanding of the economic impact and marketing strategies for hospitality and tourism destinations. Emphasis is on destination complexity, customer relations, economics, legal and ethical responsibilities, safety and security, and tourism promotion. English, language arts, mathematics, social studies, and technology are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

IB Business Management

Course Number: BI50

Recommended Maximum Enrollment: 30

Hours of Instruction: 150

Prerequisite: BF10 Business Essentials

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

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Marketing

Course Number: MM51

Recommended Maximum Enrollment: 30

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

Prerequisite: None

Aligned Career Technical Student Organization: An Association for Marketing Education Students (DECA)

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Marketing Applications

Course Number: MA52

Recommended Maximum Enrollment: 25

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

Prerequisite: MM51 Marketing or MI21 Fashion Merchandising

Aligned Career Technical Student Organization: An Association for Marketing Education Students (DECA)

Aligned Industry Credential: Customer Service and Sales Certification
Fundamental Marketing Concepts

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Project Management I

Course Number: CS11

Recommended Maximum Enrollment: 30

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

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Project Management II

Course Number: CS12

Recommended Maximum Enrollment: 25

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

Prerequisite: CS11 Project Management I

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

Aligned Industry Credential: PMI Project Management Ready Certification

Description: This course will develop advanced project management skills. Through project-based learning, students will understand how to use the framework of initiating, planning, executing, monitoring and controlling, and closing a project in authentic situations. The facilitating concepts of quality management, human resources, communication management, risk management, procurement management, and stakeholder management will be examined during this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Sales I

Course Number: MI31
Recommended Maximum Enrollment: 25
Hours of Instruction: 135-150
Prerequisite: None
Aligned Career Technical Student Organization: An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)
Aligned Industry Credential: None
Description: This course teaches students the basic knowledge around the sales profession. Students will explore careers in selling, personal branding, communication skills, customer service, buying behavior, technology, product knowledge, and the selling process. Project-based learning, English language arts, and social studies are reinforced.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Sales II

Course Number: MI32
Recommended Maximum Enrollment: 25
Hours of Instruction: 135-150
Prerequisite: MI31 Sales I
Aligned Career Technical Student Organization: An Association for Marketing Education Students (DECA); Future Business Leaders of America (FBLA)
Aligned Industry Credential: None
Description: This course teaches students the art of selling and will build on the content from the MI31 Sales I course. Students will further develop their personal brand and will continue to work on communication and customer service skills in addition to learning about pre- and post-sales activities. Students will use role plays to engage in the selling process and will learn to think on their feet. Project-based learning, English language arts, mathematics, and social studies are reinforced.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Sport and Event Marketing I

Course Number: MH31

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: In this course, students are introduced to sport and event industries. Students will develop an understanding of marketing, branding, promotion, media, and marketing data as they relate to the sport and event industries.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Sport and Event Marketing II

Course Number: MH32

Recommended Maximum Enrollment: 25

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

Prerequisite: MH31 Sport and Event Marketing I

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

Aligned Industry Credential: None

Description: In this course, students will apply their knowledge of promotion and marketing for the sport and event industries. The topics to be covered are the marketing environment, promotional activities, communications, product-mix strategies, and financial and economic impacts.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

CTE Advanced Studies

Course Number: WB13 (BMA), WB21 (FINA), WB53 (MRKT)

Recommended Maximum Enrollment: 25

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This culminating course is for juniors and seniors who have earned two technical credits, one of which is a completer course, in one Career Pathway. The Advanced Studies course must augment the content of the completer course and prepare students for success in transitioning to postsecondary education and future careers. Students work under the guidance of a teacher with expertise in the content of the completer course in collaboration with community members, business representatives, and other school-based personnel. The four parts of the course include writing a research paper, producing a product, developing a portfolio, and delivering a presentation. Students demonstrate their abilities to use 21st century skills. Competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace readiness skills through authentic experiences.

CTE Apprenticeship

Course Number: WB14 (BMA), WB22 (FINA), WB54 (MRKT)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: Students who participate in apprenticeships or pre-apprenticeships through Apprenticeship NC and the North CarolinaDepartment of Labor can also earn CTE credit while they earn hours and experience toward an adult apprenticeship leading to a completed journeyman certificate.

CTE Career and College Promise

Course Number: Various

Recommended Maximum Enrollment: Varies

Hours of Instruction: Does not apply

Prerequisite: None

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

Aligned Industry Credential: None

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

CTE Entrepreneurial Experience

Course Number: WB16 (BMA), WB24 (FINA), WB56 (MRKT)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This course involves students developing knowledge and proficiency in running a business. Students gain work-place skills, develop an understanding of how to manage a business, and are responsible for all risks.

CTE Internship

Course Number: WB15 (BMA), WB23 (FINA), WB55 (MRKT)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: A CTE Internship allows for additional development of career and technical competencies within a general career field. Internships allow students to observe and participate in daily operations, develop direct contact with job personnel, ask questions about particular careers, and perform certain job tasks. This activity is exploratory and allows the student to get hands-on experience in a number of related activities. The teacher, student, and the business community jointly plan the organization, implementation, and evaluation of an internship, regardless of whether it is an unpaid or paid internship.

CAREER DEVELOPMENT EDUCATION
PROGRAM DESCRIPTION

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

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

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

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

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

Six Essential Employability Skills

Meeting the goal to provide a career and college-ready NC workforce through the K-12 pipeline, CTE will provide a consistent and 'common language' for identification of these "essential employability skills" when working with students. NC DPI Staff researched and cross-referenced twelve subsequent national and state resources, including departments of education. NC's six "essential employability skills" aligned with organizations such as, and not limited to, the U.S. Department of Labor, National Association of College and Employers (NACE), Perkins Collaborative Resource Network (PCRN) Employability Skills, and SkillsUSA Framework (Personal Skills and Workplace Skills). The six common "essential employability skills" identified are:

- Communication
- Ethics
- Problem Solving
- Professionalism
- Resource Management
- Teamwork

Career Management

Course Number: CC45

Recommended Maximum Enrollment: 30

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

Prerequisite: None

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

Aligned Industry Credential: Conover Credential Workplace Readiness
Express Employment Professionals Career Preparedness Certification
Microburst Soft Skills for Success

Description: This course prepares students to locate, secure, keep, and change careers. Emphasis is placed on self-assessment of characteristics, interests, and values; education and career exploration; evaluation of career information and creation of a career plan. Based on the National Career Development Guidelines, skills learned in this course include, but are not limited to communications, interpersonal skills, problem solving, personal management and teamwork. English language arts is reinforced. Student participation in Career and Technical Student Organization (CTSO) competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace readiness skills through authentic experiences.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Exploring Careers and Employment

Course Number: EY11
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: None
Aligned Industry Credential: None
Description: Students experience an orientation to career planning and future employment success. Emphasis is placed on understanding the world-of-work, skills needed for employment success, and the career planning and preparation process. Based on the National Career Development Guidelines, skills reinforced include, but are not limited to communications, personal management, and teamwork.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Personal Characteristics and Careers

Course Number: EY10
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: None
Aligned Industry Credential: None
Description: Students experience an orientation to self-awareness and the world-of-work. Emphasis is placed on self-awareness and how interests, attitudes, values, learning styles, skills, and personality influence career choices. Based on the National Career Development Guidelines, skills reinforced include, but are not limited to communications, personal management, and teamwork.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

IB Personal and Professional Skills

Course Number: 0I00

Recommended Maximum Enrollment: 30

Hours of Instruction: 150

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

COMPUTER SCIENCE AND INFORMATION TECHNOLOGY EDUCATION
PROGRAM DESCRIPTION

Computer Science and Information Technology (CSIT) is focused on building linkages in information technology occupations for entry level, technical and professional careers related to the design, development, support and management of hardware, software, multimedia, and systems integration services. Students will demonstrate knowledge of and proficiency in data representation and abstraction; effectively design, develop, and test algorithms; demonstrate knowledge of digital devices, systems, and networks; and demonstrate an understanding of the role computer science plays and its impact in the modern world. The program works in coordination with the Computer Science and Technology Division and aligns to the NC CS K-12 standards where applicable.

Career pathways that students may pursue include:

- Adobe Academy
- Cisco Network Engineering
- Computer Engineering
- Computer Science Principles
- Data Science
- Digital Design and Animation
- Game Art Design
- Network Administration
- Network Security
- Python Programming
- Swift Develop

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

Students may pursue more than one intracurricular CTSO.

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

SkillsUSA is the premier student leadership organization in the country with over 300,000 members nationwide. SkillsUSA-NC offers many activities to enrich our students, advisors, and professional members throughout the year. The activities include professional and leadership development conferences, competitions that measure both technical and employability skills, and opportunities for scholarships, employment, networking, and competitive skills. Leadership events are held for regional, state, national, andinternational levels.

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

Adobe Digital Design I

Course Number: II43

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: Adobe Certified Professional 2020 or above Dreamweaver

Description: This course is a project-based course that develops career and communication skills in Webdesign using Adobe tools. This course is aligned to the Adobe Dreamweaver certification. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Adobe Video Design I

Course Number: II45

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: Adobe Certified Professional 2020 or above Premiere Pro

Description: This course is a project-based video course that develops career and communication skills in video production using Adobe tools. This course is aligned to the Adobe Premiere certification. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Adobe Visual Design I

Course Number: II41

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: Adobe Certified Professional 2020 or above Photoshop
Adobe Certified Professional 2020 or above Illustrator

Description: In this course, students develop skills that lay the foundation for photography and producing print-ready communications: graphic design principles, visual comps, illustration, print production development, shared project management skills such as interviewing and project scheduling, peer review, and redesign. Project activities focus on developing effective communications that can be deployed in print, web, or video. Students develop a variety of images, such as raster-based graphics, logos, advertisements, posters, and illustrations. They produce design documents and visual comps that clients review. Students culminate the semester with a portfolio project, reflect on the skills and topics covered thus far, and begin exploring the career areas that interest them in visual design. This course is aligned to the Adobe Certified Associate Photoshop and Adobe Certified Associate Illustrator certification. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Adobe Visual Design II

Course Number: II42

Recommended Maximum Enrollment: 25

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

Prerequisite: II41 Adobe Visual Design I

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

Aligned Industry Credential: Adobe Certified Professional 2020 or above InDesign

Description: This course builds on student design and development skills by focusing on longer print production projects as well as more in-depth content and advanced techniques for graphics and layout development. Students continue to produce rich print communications as they focus on effective graphic design, project management, design specifications, and iterative development. Students develop graphic design and print production skills that solve specific communication challenges to meet client and audience needs. This course is aligned to the Adobe Certified Associate InDesign certification, and also integrates Adobe Photoshop and Adobe Illustrator skills. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Advanced Game Art and Design

Course Number: TS32

Recommended Maximum Enrollment: 25

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

Prerequisite: TS31 Game Art and Design

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

Aligned Industry Credential: None

Description: This course is a continuation in the study of game design. Emphasis is placed on working collaboratively as a team and creating 3-D game-ready assets and environments. Students will recognize roles in a game development team, create and pitch an original game idea and understand production management in a team environment. They will gain understanding of higher-level game design concepts such as interface design, flow, and affordance. They will utilize current industry standard AAA game engines to produce a finished multilevel game. Lastly students will produce a postmortem and update their work in their game design portfolio.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Apple: Everyone Can Code I - Puzzles

Course Number: CY13
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)
Aligned Industry Credential: None
Description: This course is a guide to Swift Playgrounds that reinforces problem-solving strategies and critical-thinking skills through over 45 hours of flexible activities. Each chapter helps students build on what they already know, experiment with new coding concepts, apply their understanding, and creatively communicate how coding impacts their lives.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Apple: Everyone Can Code II - Adventures

Course Number: CY14
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY13 Apple: Everyone Can Code I - Puzzles
Aligned Career Technical Student Organization: Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)
Aligned Industry Credential: None
Description: This course is approximately 45 hours of hands-on activities that let students experiment with hardware features and event-driven programming to express their creative ideas through code.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Artificial Intelligence I

Course Number: BN41

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: This course explores the foundations of Artificial Intelligence in society and the workplace, including programming, data science, mathematical reasoning, and real-world applications of Artificial Intelligence. Students will learn the foundational skills to understand how to interact and develop Artificial Intelligence solutions in various settings. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Business Essentials

Course Number: BF10

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

Cisco Network Engineering Technology I

Course Number: II11

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: This course introduces the architecture, structure, functions, components, and models of the internet and other computer networks. The principles and structure of IP addressing and the fundamentals of ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. This course uses the Cisco Introduction to Networks curriculum and must be conducted using the Cisco Networking Academy connection. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Cisco Network Engineering Technology II

Course Number: II12

Recommended Maximum Enrollment: 25

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

Prerequisite: II11 Cisco Network Engineering Technology I

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

Aligned Industry Credential: Cisco Certified Technician (CCT) Routing and Switching

Description: This course describes the architecture, components, and operations of routers and switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. This course uses the Cisco Routing and Switching Essentials curriculum and must be conducted using the Cisco Networking Academy connection. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Coding in Minecraft - Introductory

Course Number: CY30

Recommended Maximum Enrollment: 30

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

Description: Using the Minecraft platform, students will gain the skill of designing and developing algorithms. Students will also learn how to predict the outcome of running a series of statements; apply and understand the concept of iteration and selection. Finally, students will understand how to debug and resolve problems in algorithms. Mathematics and computer science standards are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Coding in Minecraft - Intermediate

Course Number: CY31
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY30 Coding in Minecraft - Introductory
Aligned Career Technical Student Organization: Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Using the Minecraft platform, students will learn how to code in block-based coding using MakeCode. They will learn how to apply and understand variable types, logic, comparison operators and iteration. Mathematics and computer science standards are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Coding in Minecraft - Advanced

Course Number: CY32
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY31 Coding in Minecraft - Intermediate
Aligned Career Technical Student Organization: Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Using the Minecraft platform, students will learn how to program in text-based coding using JavaScript. They will identify where code can be re-used, follow JavaScript code and predict the outcome. Students will identify and understand logic, comparison operators, iteration, and errors in JavaScript code. Mathematics and computer science standards are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

CompTIA IT Fundamentals

Course Number: BI12

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: CompTIA IT Fundamentals+

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-Based Learning descriptions can be found on page 3.**	

Computer Engineering Technology I

Course Number: II21

Recommended Maximum Enrollment: 25

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

Prerequisite: BI12 CompTIA IT Fundamentals

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

Aligned Industry Credential: CompTIA A+ 220-1101
CompTIA IT Fundamentals+

Description: This course is the first in a two-course series that introduces the skills required for entry level PC technicians. It includes objectives in the following four domains, a) PC Hardware, b) Networking c) Mobile devices d) Hardware and networking troubleshooting. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Computer Engineering Technology II

Course Number: II22

Recommended Maximum Enrollment: 25

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

Prerequisite: II21 Computer Engineering Technology I

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

Aligned Industry Credential: CompTIA A+ 220-1102

Description: This course is the second in a two-course series that introduces the skills required for entry level PC technicians. It includes objectives in the following five domains, a) Windows operating system, b) Other operating systems and technologies c) Security, d) Software troubleshooting, e) Operational procedures. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Computer Science I

Course Number: BP41

Recommended Maximum Enrollment: 30

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

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Computer Science II

Course Number: BP42

Recommended Maximum Enrollment: 30

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

Prerequisite: BP41 Computer Science I

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

Aligned Industry Credential: None

Description Computer Science II continues developing the concepts introduced in the prerequisite course, Computer Science I, introducing students to the foundational concepts of computer science and challenges them to explore how computing and technology can impact the world. More than a traditional introduction to programming, it is a rigorous, engaging, and approachable course that explores many of the foundational ideas of computing so all students understand how these concepts are transforming the world we live in. Strong communication skills are necessary and English language arts, mathematics, and computer science standards are reinforced.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Computer Science Discoveries I

Course Number: CY20

Recommended Maximum Enrollment: 30

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

Description: Students will use a problem-solving process to address a series of puzzles, challenges, and real-world scenarios. They will learn how computers input, output, store, and process information to help humans solve problems. Students will also learn how to create and share the content on their own web pages using HTML and CSS. They will also practice valuable programming skills such as debugging, using resources, and teamwork.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Computer Science Discoveries II

Course Number: CY21
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY20 Computer Science Discoveries I
Aligned Career Technical Student Organization: Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Students will build on their coding experience as they program animations, interactive art, and games in Game Lab. The course starts off with simple shapes and builds up to more sophisticated sprite-based games, using the same programming concepts and the design process computer scientists use daily. Students will also investigate the broader social impacts of computing. Through a series of design challenges, they will learn how to better understand the needs of others while developing a solution to a problem.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Computer Science Discoveries III

Course Number: CY22
Recommended Maximum Enrollment: 30
Hours of Instruction: 45
Prerequisite: CY21 Computer Science Discoveries II
Aligned Career Technical Student Organization: Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Students will explore the importance of data in solving problems and how computers help in this process. Students 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. Using App Lab and Adafruit's Circuit Playground, students will develop programs that utilize the same hardware inputs and outputs that are found in smart devices. Students also get to look at how a simple rough prototype can lead to a finished product.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Database Essentials

Course Number: BM40

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: Microsoft Office Specialist 2019 or above Access

Description: Students in Microsoft Imagine Academies benefit from world-class Microsoft curriculum and cutting-edge software tools to tackle real-world challenges in the classroom environment. In this class, students will learn how to create and work with a database and its objects by using the new and improved features in the most current version of Microsoft Access. Students will learn how to create, modify, and locate information as well as how to create programmable elements and share and distribute database information. Mathematics is reinforced.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Develop in Swift Fundamentals

Course Number: BL53

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: App Development with Swift Certified User

Description: Students build fundamental iOS app development skills with Swift. Students are supported in learning the core concepts and practices that Swift programmers use daily and build a basic fluency in Xcode source and UI editors. Students will be able to create iOS apps that adhere to standard practices, including the use of stock UI elements and layouts. Strong communication skills are necessary and English language arts, mathematics, and computer science standards are reinforced.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Develop in Swift Data Collections

Course Number: BL54

Recommended Maximum Enrollment: 25

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

Prerequisite: BL53 Develop in Swift Fundamentals

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

Aligned Industry Credential: None

Description: In this course, students will expand their knowledge and skills in Swift by extending their work in iOS app development, creating more complex and capable apps. Students will work with data from a server and explore new iOS APIs that allow for much richer app experiences—including displaying large collections of data in multiple formats. Students will have the opportunity to explore app design by brainstorming, planning, prototyping, and evaluating an app idea of their own.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Develop in Swift Explorations

Course Number: BL52

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: App Development with Swift Associate

Description: Students will explore key computing concepts in this course, building a solid foundation in programming with Swift. Students will learn about the impact of computing and apps on society, economies, and cultures while exploring iOS app development. The app design process allows students to develop critical app creation skills through converting prototypes into full apps and encouraging students to learn to code.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Digital Design and Animation I

Course Number: TS24

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: This course is an introductory level course focusing on the concepts and tools used by digital artists in a wide variety of creative careers including graphic design, film, and game design. Students work with professional-grade creative software packages to develop 2D and 3D digital graphics and audio/video media. Students use Adobe CC Suite, and digital 3D modeling with 3DS Max to build neededskills for subsequent course. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Digital Design and Animation II

Course Number: TS25

Recommended Maximum Enrollment: 25

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

Prerequisite: TS24 Digital Design and Animation I

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

Aligned Industry Credential: Autodesk Certified User 3DS Max
Autodesk Certified User Maya

Description: This course emphasizes the use of industry-standard digital technology and media to help students develop the artistic and technical skills necessary to plan, analyze, and create visual solutions to 21st Century communications problems. Students engage in digital art activities using professional-grade creative software packages to develop complex 2D and 3D digital graphics and audio/video media. Students apply Adobe CC Suite and 3DS Max skills to industry-related activities and projects, mirroring workplace scenarios. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Digital Literacy

Course Number: CY04
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Students learn critical digital literacy skills including how to evaluate content for accuracy, perspective, and motive. Students are helped to acknowledge the benefits of online communities and resources while guiding them to successfully navigate potential pitfalls in their digital lives. Through digital responsibility lessons, students take practical steps to protect their privacy and safety online.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Drone Technology I

Course Number: ID11
Please refer to the Trade, Technology, Engineering, and Industrial Education Program Area for the full course description.

Drone Technology II

Course Number: ID12
Please refer to the Trade, Technology, Engineering, and Industrial Education Program Area for the full course description.

Drone Technology Fundamentals

Course Number: ID10
Please refer to the Trade, Technology, Engineering, and Industrial Education Program Area for the full course description.

Entrepreneurship I

Course Number: ME11
Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

Entrepreneurship II

Course Number: ME12
Please refer to the Business, Finance, and Marketing Education Program Area for the full course description.

Foundations of Information Technology

Course Number: BI10

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: This introductory course provides students with the foundation to pursue further study in information technology. Emphasis is on network systems, information support and services, programming and software development, and interactive media. Mathematics is reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Game Art and Design

Course Number: TS31

Recommended Maximum Enrollment: 25

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

Prerequisite: TS24 Digital Design and Animation I

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

Aligned Industry Credential: None

Description: This course introduces students to techniques used in the electronic game industry. Students will focus on the principles used in game design including mathematical and virtual modeling. Emphasis is placed on areas related to art, history, ethics, plot development, storyboarding, programming, 2D Visual theory, and interactive play technologies. Students develop physical and virtual games using hands-on experience and a variety of software. Art, English language, arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

IB Computer Science HL

Course Number: 2I01
Recommended Maximum Enrollment: 30
Hours of Instruction: 240
Prerequisite: None
Aligned Career Technical Student Organizations: Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Students investigate in greater depth current issues in computer science that are not included in the syllabus.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

IB Computer Science SL

Course Number: 2I00
Recommended Maximum Enrollment: 30
Hours of Instruction: 150
Prerequisite: None
Aligned Career Technical Student Organizations: Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Students learn programming skills as a critical element of developing higher-level skills applicable to virtually all fields of study.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

IB Design Technology HL

Course Number: 3I07
Recommended Maximum Enrollment: 30
Hours of Instruction: 240
Prerequisite: None
Aligned Career Technical Student Organizations: Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)
Aligned Industry Credential: 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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

IB Design Technology SL

Course Number: 3I06
Recommended Maximum Enrollment: 30
Hours of Instruction: 150
Prerequisite: None
Aligned Career Technical Student Organizations: Future Business Leaders of America (FBLA), SkillsUSA, Technology Student Association (TSA)
Aligned Industry Credential: 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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

IB Information Technology in a Global Society

Course Number: BI05

Recommended Maximum Enrollment: 30

Hours of Instruction: 150

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Introduction to Computer Science

Course Number: BP01

Recommended Maximum Enrollment: 30

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: Students with limited or no experience in coding and computer programming will be introduced to core concepts of Computer Science. Students will understand the components of computers and computer programming, ethics in computer science, algorithms, variables, conditional statements, and more. The course will use a combination of making and designing using the revolutionary new micro:bit microcontroller board and the Arcade curriculum with Microsoft's easy and powerful MakeCode block-based coding environment. The Arcade curriculum will help students develop programming skills by creating and modding retro arcade games with Blocks and JavaScript in the MakeCode editor. This course is project-based with a maker philosophy at its core. The idea is that by making physical objects or games, students create a context for learning coding and computer science concepts. Mathematics is reinforced.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Introduction to Data Science

Course Number: BM21

Recommended Maximum Enrollment: 25

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

Prerequisite: BM20 Microsoft Excel

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

Aligned Industry Credential: None

Description: This course is designed for students to experience an introduction to the field of data science which includes data organization, visualization, and analysis, and the basic tools used. Students will learn what it takes to become a data scientist. Mathematics and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Introduction to Office Productivity

Course Number: CY02

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

Description: Students learn a foundational understanding of computer operations. Students learn to harness technology as a tool to create, problem solve, and collaborate with others. The curriculum covers topics and skills including computing basics, responsible usage, spreadsheet basics, presentation basics, and multimedia design.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Keyboarding and Basic Word Processing

Course Number: CY01

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

Description: Students develop a foundation for effective technology use by learning to type. The curriculum covers topics and skills including keyboard layout, ergonomic strategies, and keyboarding proficiency. Students also learn to use word processing software for basic document creation, design, editing, collaboration, and problem solving.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Microsoft Excel

Course Number: BM20

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: Microsoft Office Specialist 2019 or above Excel Expert
Microsoft Office Specialist 2019 or above Excel Core

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Microsoft Word and PowerPoint

Course Number: BM10

Recommended Maximum Enrollment: 30

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

Prerequisite: None

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

Aligned Industry Credential: Microsoft Office Specialist (MOS) 2019 or above Word
Microsoft Office Specialist (MOS) 2019 or above PowerPoint

Description: Students in the Microsoft Imagine Academy benefit from world-class Microsoft curriculum and software tools to tackle real-world challenges in the classroom environment. In the first part, students will learn to use the current version of Microsoft Word interface, commands, and features to create, enhance, customize, share, and create complex documents, and publish them. In the second part, students will learn to use the current version of Microsoft PowerPoint interface, commands, and features to create, enhance, customize, and deliver presentations. Art and English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Network Administration I

Course Number: BN20

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: This course is based on industry-validated skill standards. Topics include operating systems, networking, Windows server administration, and security. English language arts and mathematics are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Network Administration II

Course Number: BN22

Recommended Maximum Enrollment: 25

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

Prerequisite: BN20 Network Administration I

Aligned Career Technical Student Organization:

Future Business Leaders of America (FBLA); SkillsUSA, Technology Student Association (TSA)

Aligned Industry Credential: CompTIA Network+ N10-008

Description: This course is based on industry-validated skill standards. Topics of this course include networking security, administrator responsibilities, and documentation of work-based experiences. English language arts and mathematics are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Network Security I

Course Number: BN31

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Network Security II

Course Number: BN32

Recommended Maximum Enrollment: 25

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

Prerequisite: BN31 Network Security I

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

Aligned Industry Credential: CompTIA Security+

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Office Productivity Applications

Course Number: CY03

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

Description: Students deepen data literacy by learning to read, analyze, present, and access real-world information with spreadsheets and databases. The curriculum covers topics and skills including data collection and synthesis, data analysis, and data visualization. Mathematics standards are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Cybersecurity

Course Number: BC10

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-Based Learning descriptions can be found on page 3.**	

Project Management I

Course Number: CS11

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

Project Management II

Course Number: CS12

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

Python Programming I

Course Number: BP14

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	No		****Work-Based Learning descriptions can be found on page 3.**	

Python Programming II

Course Number: BP16

Recommended Maximum Enrollment: 25

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

Prerequisite: BP14 Python Programming I

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

Aligned Industry Credential: PCAP Python Certified Associate

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

SAS Base Programming

Course Number: BP20

Recommended Maximum Enrollment: 20

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

Prerequisite: None

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

Aligned Industry Credential: SAS Certified Specialist Programming Fundamentals Using SAS 9.4

Description: This course is the entry point for students to learn SAS programming. Students will learn how to plan and write SAS programs to solve common data analysis problems. Instruction provides practice running and debugging programs. The emphasis is placed on reading input data, creating lists and summary reports, defining new variables, executing code conditionally, reading raw data files and SAS data sets, and writing the results to SAS data sets. Mathematics is reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Informatics Computers, Networks and Databases

Course Number: BR11

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: This project-based-learning course engages students who are curious about informatics. In this course, students will learn how to use a design process to create systems that acquire, store, and communicate data for a variety of career fields. Students will work collaboratively in teams to design systems, solve problems, think critically, be creative and communicate with each other and business partners. Students will participate in real-world experiences such as designing an inventory system for a retail store, comparing stores in a company to project future sales, track customer buying habits and more.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Informatics Design for the Digital World

Course Number: BR12

Recommended Maximum Enrollment: 25

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

Prerequisite: BR11 SREB AC Informatics Computers, Networks, and Databases

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

Aligned Industry Credential: None

Description: This project-based-learning course engages students who are interested in applying the design process to create systems such as a cloud-based digital storage system for images. Students will design a system to automatically collect and report data on highway usage. They will apply a geospatial system to map a store and develop a database that studies shopping habits. Through these projects, students will learn about data management and logic-based queries by collecting data, using the Global Positioning System (GPS), and analyzing data utilizing a geographic information system (GIS). They will learn how to automate data collection to make processes more effective and efficient. Students will work collaboratively in teams and demonstrate their knowledge and skills by presenting new and innovative ideas, techniques and solutions to business and industry partners.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Informatics Databases in the Cloud

Course Number: BR13

Recommended Maximum Enrollment: 25

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

Prerequisite: BR12 SREB AC Informatics Design for the Digital World

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

Aligned Industry Credential: None

Description: This project-based-learning course is for students who successfully completed SREB AC Informatics Design for the Digital World and who want to tackle the more complex challenges that business and industry face. Students at this level will learn about Web technologies, cloud storage, information security, data, animation, introductory computer programming and database applications. Students will take more responsibility for their own learning, problem solving and thinking outside of the box. Real-world challenges will require higher levels of research, building, testing, analyzing, and improving systems. Students will develop solutions for real-world problems by designing a database for ticket sales; designing security for a database; creating a game with animation; reporting information based on population data in a community; and designing, building, and testing an application for a database.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Informatics Developing a Cloud Presence

Course Number: BR14

Recommended Maximum Enrollment: 25

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

Prerequisite: BR13 SREB AC Informatics Databases in the Cloud

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

Aligned Industry Credential: None

Description: Students in this capstone course will focus on the ethics of privacy, social networking, designing for clients and artificial intelligence through six authentic projects. Students will select a business partner and design, build, and test a Web presence for a company that will apply the concepts from the three priorcourses. Student teams will work collaboratively with a business partner to develop a proposal for the project with evaluation criteria. Once the business partner accepts the proposal, the student team will implement it by designing, planning, building the system, and testing and revising the system to meet the needs of the business.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

CTE Advanced Studies

Course Number: WB09 (AAVC), WB41 (INFO)

Recommended Maximum Enrollment: 25

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This culminating course is for juniors and seniors who have earned two technical credits, one of which is a completer course, in one Career Pathway. The Advanced Studies course must augment the content of the completer course and prepare students for success in transitioning to postsecondary education and future careers. Students work under the guidance of a teacher with expertise in the content of the completer course in collaboration with community members, business representatives, and other school-based personnel. The four parts of the course include writing a research paper, producing a product, developing a portfolio, and delivering a presentation. Students demonstrate their abilities to use 21st century skills. Competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace readiness skills through authentic experiences.

CTE Apprenticeship

Course Number: WB10 (AAVC), WB42 (INFO)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: Students who participate in apprenticeships or pre-apprenticeships through Apprenticeship NC and the North Carolina Department of Labor can also earn CTE credit while they earn hours and experience toward an adult apprenticeship leading to a completed journeyman certificate.

CTE Career and College Promise

Course Number: Various

Recommended Maximum Enrollment: Varies

Hours of Instruction: Does not apply

Prerequisite: None

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

Aligned Industry Credential: None

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

CTE Entrepreneurial Experience

Course Number: WB12 (AAVC), WB44 (INFO)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This course involves students developing knowledge and proficiency in running a business. Students gain work-place skills, develop an understanding of how to manage a business, and are responsible for all risks

CTE Internship

Course Number: WB11 (AAVC), WB43 (INFO)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: A CTE Internship allows for additional development of career and technical competencies within a general career field. Internships allow students to observe and participate in daily operations, develop direct contact with job personnel, ask questions about particular careers, and perform certain job tasks. This activity is exploratory and allows the student to get hands-on experience in a number of related activities. The teacher, student, and the business community jointly plan the organization, implementation, and evaluation of an internship, regardless of whether it is an unpaid or paid internship.

FAMILY AND CONSUMER SCIENCES EDUCATION
PROGRAM DESCRIPTION

Family and Consumer Sciences (FCS) provides the bridge needed by all students to deal with major societal issues such as work-and-family, health care, child and elder care, family and community violence and crime, global economics and politics, and technology usage. FCS Education is a catalyst to bring these issues into action-oriented, skill-building educational programs. The North Carolina FCS Education program provides a platform for students to transition into adult life by gaining a strong foundation of the knowledge and skills needed for successfully living and working in a diverse, global society.

Students develop personal effectiveness and industry-relevant technical skills as they explore and pursue career pathways aligned to the FCS Body of Knowledge and Family and Consumer Sciences National Standards 3.0.

Career pathways that students may pursue include:

- Apparel and Textile Production
- Counseling and Mental Health
- Culinary Arts Applications
- Culinary Arts Internship
- Early Childhood Development and Services
- Food and Nutrition
- Food Products and Processing Systems
- Human Services
- Interior Design
- Teaching and Training

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

Family, Career and Community Leaders of America (FCCLA) is an integral component of a quality FCS Education program. FCCLA provides teacher-developed and student-tested project-based learning strategies and materials that shift the responsibility for achieving CTE and FCS program outcomes to students. Through intracurricular chapter programs and projects, students further their understanding of FCS standards.

Apparel and Textile Production I

Course Number: FA31

Recommended Maximum Enrollment: 20

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

Prerequisite: None

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: None

Description: In this course students are introduced to the apparel and textile industry in the area of design, textiles and apparel engineering. Emphasis is placed on students applying these design and engineering skills to create and produce apparel products. Art, literacy, mathematics, and science are reinforced. *For safety reasons, enrollment is not to exceed 20 in this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Apparel and Textile Production II

Course Number: FA32

Recommended Maximum Enrollment: 20*

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

Prerequisite: FA31 Apparel and Textile Production I

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: Pre-Professional Assessment and Certification in Fashion, Textiles, and Apparel

Description: Students in this course will gain a deeper understanding of design principles, engineering, fabrication and global needs of an ever-changing apparel and textile industry. The course provides a major focus on textile design, textile science, product construction, global manufacturing, and the apparel/textile market while incorporating and scaffolding prerequisite concepts. Emphasis is placed on application of design and engineering skills used to create, produce, and prepare a product for market. Students will also gain the entrepreneurial skills, necessary for successful marketing and distribution of an apparel product. Art, literacy, mathematics, science, and social studies are reinforced throughout. * For safety reasons, enrollment is not to exceed 20 in this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Child Development

Course Number: FE60

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: None

Description: This course introduces students to responsible nurturing and basic application of child development theory, beginning with prenatal development up to children age 5. Areas of study include effects of family on individuals and society; prenatal development and care; understanding how children develop; and care of infants, toddlers, and preschoolers.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Counseling and Mental Health I

Course Number: FC13

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: None

Description: This course is designed to introduce students to the counseling and mental health field through understanding how to create healthy, respectful, and caring relationships across the lifespan. Emphasis is placed on understanding mental health, family and friend dynamics, effective communication, and healthy intrapersonal and interpersonal relationships. English/language arts, social studies, and technology are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Counseling and Mental Health II

Course Number: FC14

Recommended Maximum Enrollment: 25

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

Prerequisite: FC13 Counseling and Mental Health I

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: Pre-Professional Assessment and Certification in Family and Community Services

Description: Students in this course will gain a deeper understanding for the counseling and mental health field and factors that affect mental health. Emphasis is placed on understanding the human brain and psyche, theories of development, mental disorders, treatment options, and teen violence issues. Activities engage students in exploring various counseling and mental health careers, while building essential life literacy skills they can apply in their own lives to achieve optimal well-being. English/language arts, social studies, science, technology, interpersonal relationships are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Culinary Arts and Hospitality I

Course Number: FH10

Recommended Maximum Enrollment: 20*

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

Prerequisite: None

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: ANSI-Accredited Food Protection Manager Certification

Description: This course is designed to introduce students to the hospitality and food service industry by learning about components of professional practice and building basic knowledge and skills in food preparation, garde manger, baking, and food service operations. The introduction includes students learning food safety, breakfast cookery, salads and sandwiches, quick breads and cookies, and dining room service. Art, English language arts, mathematics, science, and social studies are reinforced.
***** For safety reasons, enrollment not to exceed 20 students.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Culinary Arts and Hospitality II Applications

Course Number: FH11

Recommended Maximum Enrollment: 20*

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

Prerequisite: FH10 Culinary Arts and Hospitality I

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: ANSI-Accredited Food Protection Manager Certification

Description: This course is designed for students to demonstrate their knowledge and skills in basic food preparation, garde manger, baking and foodservice operations by planning and executing the program's school-based enterprise. The experience includes students preparing and selling breakfast items, salads and sandwiches, and quick breads and cookies while applying safety, sanitation, and guest service skills. Arts, English and language arts, mathematics, science, social studies, and are reinforced.
***** For safety reasons, enrollment not to exceed 20 students.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	No
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-Based Learning descriptions can be found on page 3.**	

Culinary Arts and Hospitality II Internship

Course Number: FH12

Recommended Maximum Enrollment: 20*

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

Prerequisite: FH10 Culinary Arts and Hospitality I

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: ANSI-Accredited Food Protection Manager Certification

Description: This course is designed for students to demonstrate their knowledge and skills in basic food preparation, garde manger, baking and foodservice operations through mentored work experiences in the food service industry. The experience includes students preparing and selling breakfast items, salads and sandwiches, and quick breads and cookies while applying safety, sanitation, and guest service skills. Arts, English and language arts, mathematics, science, and social studies are reinforced.
***** For safety reasons, enrollment not to exceed 20 students.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	No
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	No
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Culinary Arts and Hospitality III

Course Number: FH13

Recommended Maximum Enrollment: 20*

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

Prerequisite: FH11 Culinary Arts and Hospitality II Applications OR FH12 Culinary Arts and Hospitality II Internship

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: Certified Fundamentals Cook (CFC)
Pre-Professional Assessment Certification in Culinary Arts
ProStart National Certificate of Achievement (COA)

Description: The course is designed for students to further develop their knowledge and skills through learning about advanced food preparation, garde manger, baking and pastry, and food service operations. The experience includes students learning cooking techniques, food preservation, yeast breads and pastries preparation, human relations management, menu planning, and food service purchasing and receiving. Arts, English and language arts, mathematics, science, and social studies are reinforced.

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadow**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-Based Learning descriptions can be found on page 3.**	

Culinary Arts and Hospitality IV Applications

Course Number: FH14

Recommended Maximum Enrollment: 20*

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

Prerequisite: FH13 Culinary Arts and Hospitality III

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: None

Description: This course is designed for students to demonstrate their knowledge and skills in advanced food preparation, garde manger, baking and pastry, and food service operations by planning and executing the program's school-based enterprise. The experience includes students preparing and selling a variety of meat, poultry, and seafood entrées served with accompaniments and sauces and yeast breads, desserts, and pastries, while applying human relations management, menu planning, and food service purchasing and receiving. Arts, English and language arts, mathematics, science, and social studies are reinforced.

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

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	No
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-Based Learning descriptions can be found on page 3.**	

Drone Technology I

Course Number: ID11

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

Drone Technology II

Course Number: ID12

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

Drone Technology Fundamentals

Course Number: ID10

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

Early Childhood Education I

Course Number: FE11

Recommended Maximum Enrollment: 20*

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

Prerequisite: Students must be 15 by September 1. FE60 Child Development

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: CPR/AED
First Aid
North Carolina Early Childhood Credential Equivalency (NCECC)

Description: This two-credit course prepares students to work with children in early childhood education settings. Topics of study include historical, theoretical, and philosophical foundations of the profession, the structure of early childhood programs, connecting appropriate learning activities and teaching strategies to developmental needs of children, inclusive environments, communicating expectations, setting limits, and guiding behavior, as well as personal growth in the field of child development. An internship makes up 50 percent of instructional time. Due to student participation in internships at early childhood centers that are licensed by the Division of Child Development and Early Education, students must be 15 years of age before September 1.

* For safety reasons and intern placement, enrollment should not exceed 20 in this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Early Childhood Education II

Course Number: FE12

Recommended Maximum Enrollment: 20*

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

Prerequisite: FE11 Early Childhood Education I

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: CPR/AED
First Aid
North Carolina Early Childhood Credential (NCECC) Equivalency

Description: This two-credit course provides advanced experiences in working with children from infancy to age 12 in early education and childcare settings. Areas of study include program planning and management, developmentally appropriate practice, procedures, and strategies for working with specialgroups of children, career development and professionalism. An internship makes up 50 percent of instructional time.
* For safety reasons and intern placement, enrollment should not exceed 20 in this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Exploring Apparel and Interior Design

Course Number: FY12

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

Aligned Career Technical Student Organization: Family, Career, and Community Leaders of America (FCCLA)

Aligned Industry Credential: None

Description: Students are introduced to the field of apparel with the elements of design, basic clothing construction, and the impact of marketing on clothing choices. Students also learn the basics of interior design, which includes the basic principles of design, managing living spaces, and learning how sustainable design impacts housing.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Childcare

Course Number: FY14
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: Family, Career, and Community Leaders of America (FCCLA)
Aligned Industry Credential: None
Description: This course introduces students to children's developmental ages and stages from birth to 7 years and related career opportunities. Through hands-on activities, students will practice basic care of infants, toddlers, and preschoolers and discuss proper nutrition. Students will understand how to prevent accidents and how to use positive guidance while working with children. Students will learn the importance of well-prepared and trained babysitters and how to prepare for the diverse responsibilities of being a babysitter.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Nutrition and Wellness

Course Number: FY11
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: Family, Career, and Community Leaders of America (FCCLA)
Aligned Industry Credential: None
Description: Students gain an understanding of the impact of choices on wellness by examining the current USDA Food Guidelines and nutritious meal planning and preparation. Students learn basic kitchen skills, safety, and sanitation.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Personal Finance and Hospitality

Course Number: FY13
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: Family, Career, and Community Leaders of America (FCCLA)
Aligned Industry Credential: None
Description: Students are introduced to the basics of personal finance through financial responsibility and decision-making. Students learn money and time management and are eligible to receive EVERFI's Vault certification. The hospitality curriculum covers the basics of foodservice and hospitality, exploring food safety and sanitation, as well as culinary arts. Through this course students are eligible to receive the NC eFoodHandlers certification.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Social and Emotional Skills

Course Number: FY10
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: Family, Career, and Community Leaders of America (FCCLA)
Aligned Industry Credential: None
Description: Students gain an understanding of social and emotional learning that includes communication skills, self-awareness, self-management, responsible decision-making, social awareness, interpersonal relationship skills, and careers in human services.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Fashion Merchandising

Course Number: MI21

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

Food and Nutrition I

Course Number: FN41

Recommended Maximum Enrollment: 20*

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

Prerequisite: FC11 Principles of Family and Human Services recommended

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: ANSI-Accredited Food Handler Certificate

Description: This course examines the nutritional needs of the individual. Emphasis is placed on fundamentals of food production, kitchen and meal management, food groups and their preparation, andtime and resource management. English language arts, mathematics, science, and social studies are reinforced.
*For safety and sanitation reasons, enrollment should not exceed 20 in this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Food and Nutrition II

Course Number: FN42

Recommended Maximum Enrollment: 20*

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

Prerequisite: FN41 Foods and Nutrition I

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: ANSI-Accredited Food Protection Manager Certification
Pre-Professional Assessment and Certification in Nutrition, Food, and Wellness

Description: In this course, students experience the intersection of nutrition science and food preparation, while building skills for an expanding range of career opportunities. Emphasis is placed on health and social responsibility while improving the way people eat. Students learn how to manage food safety; plan and prepare meals for a variety of consumers and clients; and explore the food system and global cuisines. English/language arts, social studies, mathematics, science, technology, interpersonal relationships are reinforced.
*For safety and sanitation reasons, enrollment should not exceed 20 in this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Food Science and Technology

Course Number: FN43

Recommended Maximum Enrollment: 25

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

Prerequisite: FN41 Food and Nutrition I

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: Food Safety and Science Certification
Pre-Professional Assessment and Certification in Food Science Fundamentals

Description: This course explores the food industry from the farm to the table using skills in food science, technology, engineering, and mathematics. Government regulations, emerging trends, biotechnology, and technological career opportunities from scientists to technicians will be presented. The student examines production, processing, preparation, preservation, and packaging principles along the farm to table continuum. The student begins to understand how food technology affects the food that he/she eats. English language arts, science, social studies, and mathematics are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Interior Design Fundamentals

Course Number: FI21

Recommended Maximum Enrollment: 25

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

Prerequisite: FC11 Principles of Family and Human Services recommended

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: None

Description: This course engages students in exploring various interior design professions, while building the content knowledge and technical skills necessary to provide a foundational knowledge of the design industry. Emphasis is placed on design thinking and utilization of the interior design process; human, environmental, and behavioral factors; color theory, elements, and principles of design; hand sketching/digital design techniques, space planning, selection of products and materials for residential interiors; client relationship building and design communication techniques. English/language arts, mathematics, science, art, and technology are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Interior Design Studio

Course Number: FI22

Recommended Maximum Enrollment: 25

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

Prerequisite: FI21 Interior Design Fundamentals

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: Pre-Professional Assessment and Certification in Interior Design Fundamentals

Description: This course prepares students for entry-level and technical work opportunities in the residential and non-residential interior design fields. Students deepen their understanding of design fundamentals and theory by designing interior plans to meet living space needs of specific individuals or families. Topics include application of design theory to interior plans and production, selection of materials, and examination of business procedures. Art and mathematics are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Interior Design Technology

Course Number: FI23

Recommended Maximum Enrollment: 20

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

Prerequisite: FI21 Interior Design Fundamentals

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: Autodesk Certified User Revit

Description: This course prepares students for entry-level and technical work opportunities in interior design. Students apply design skills through Autodesk Revit software to meet clients' needs using components found in residential and commercial spaces. Art and mathematics are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Principles of Family and Human Services

Course Number: FC11

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: Family, Career and Community Leaders of America (FCCLA)

Aligned Industry Credential: None

Description: Students learn life literacy skills and individual, family, and community systems in the context of the human services field. Emphasis is placed on human development, professional skills, diversity, analyzing community issues, and life management. Activities engage students in exploring various helping professions, while building essential life skills they can apply in their own lives to achieve optimal wellbeing. English/language arts, social studies, mathematics, science, technology, and interpersonal relationships are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Project Management I

Course Number: CS11

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

Project Management II

Course Number: CS12

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

Teaching as a Profession I

Course Number: FE21

Recommended Maximum Enrollment: 20

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

Prerequisite: None

Aligned Career Technical Student Organization: Family, Career, and Community Leaders of America (FCCLA)

Aligned Industry Credential: Basic School Age Care (BSAC)

Description: This course is designed to encourage students to consider teaching as a career. Students are exposed to the many facets of education through class discussion, observation, and participation in public school classrooms. Students will examine their aptitudes for teaching, learner needs and development, including students with exceptionalities, and the history, trends, and governance of education. English/language arts, social studies, mathematics, science, technology, and interpersonal relationships are reinforced.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-Based Learning descriptions can be found on page 3.**	

Teaching as a Profession II

Course Number: FE22

Recommended Maximum Enrollment: 20

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

Prerequisite: FE21 Teaching as a Profession I

Aligned Career Technical Student Organization: Family, Career, and Community Leaders of America (FCCLA)

Aligned Industry Credential: None

Description: This course is designed to encourage students to further pursue teaching as a career. Students learn about the importance of positive learning environments, curriculum development, and utilization of a variety of instructional strategies. Students are required to complete both Teaching as a Profession II and Teaching as a Profession Field Experience in the same year. Students are eligible for articulated university credit upon successful completion of the Teaching as a Profession pathway. English/language arts, social studies, mathematics, science, technology, and interpersonal relationships are reinforced.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-Based Learning descriptions can be found on page 3.**	

Teaching as a Profession Field Experience

Course Number: FE23

Recommended Maximum Enrollment: 20

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

Prerequisite: FE22 Teaching as a Profession II

Aligned Career Technical Student Organization: Family, Career, and Community Leaders of America (FCCLA)

Aligned Industry Credential: None

Description: In this course, students participate in guided and independent classroom leadership activities with mentoring from their cooperating teacher. The field experience provides students with the skills and tools that are an integral and complementary component of Teaching as a Profession I and II, which assist in developing pedagogical skills, knowledge, and characteristics necessary for effective teaching.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

CTE Advanced Studies

Course Number: WB05 (ARCH), WB09 (AAVC), WB17 (EDUC), WB33 (HOSP), WB37 (HUMA)

Recommended Maximum Enrollment: 25

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This culminating course is for juniors and seniors who have earned two technical credits, one of which is a completer course, in one Career Pathway. The Advanced Studies course must augment the content of the completer course and prepare students for success in transitioning to postsecondary education and future careers. Students work under the guidance of a teacher with expertise in the content of the completer course in collaboration with community members, business representatives, and other school-based personnel. The four parts of the course include writing a research paper, producing a product, developing a portfolio, and delivering a presentation. Students demonstrate their abilities to use 21st century skills. Competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace readiness skills through authentic experiences.

CTE Apprenticeship

Course Number: WB06 (ARCH), WB10 (AAVC), WB18 (EDUC), WB34 (HOSP), WB38 (HUMA)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: Students who participate in apprenticeships or pre-apprenticeships through NC Apprenticeship and the North CarolinaDepartment of Labor can also earn CTE credit while they earn hours and experience toward an adult apprenticeship leading to a completed journeyman certificate.

CTE Career and College Promise

Course Number: Various

Recommended Maximum Enrollment: Varies

Hours of Instruction: Does not apply

Prerequisite: None

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

Aligned Industry Credential: None

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

CTE Entrepreneurial Experience

Course Number: WB08 (ARCH), WB12 (AAVC), WB20 (EDUC), WB36 (HOSP), WB40 (HUMA)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This course involves students developing knowledge and proficiency in running a business. Students gain work-place skills, develop an understanding of how to manage a business, and are responsible for all risks.

CTE Internship

Course Number: WB07 (ARCH), WB11 (AAVC), WB19 (EDUC), WB35 (HOSP), WB39 (HUMA)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: A CTE Internship allows for additional development of career and technical competencies within a general career field. Internships allow students to observe and participate in daily operations, develop direct contact with job personnel, ask questions about particular careers, and perform certain job tasks. This activity is exploratory and allows the student to get hands-on experience in a number of related activities. The teacher, student, and the business community jointly plan the organization, implementation, and evaluation of an internship, regardless of whether it is an unpaid or paid internship.

HEALTH SCIENCE EDUCATION
PROGRAM DESCRIPTION

Health Science Education provides a comprehensive program to meet present and projected needs for the healthcare industry. Curriculum concepts incorporate technological advances to motivate students and prepare them to pursue a career as a future health professional. Emphasis is placed on the various domains of healthcare and related skills such as employability skills, prevention (wellness), diagnostics, therapeutics, and rehabilitation. Students are encouraged to pursue work-based learning opportunities that include job shadowing, internships, and apprenticeships to support their areas of interest in healthcare.

Career pathways that students may pursue include:

- Biomedical Technology
- Healthcare Professional
- PLTW Biotechnology Research and Development
- SREB AC Career Pathway – Health Informatics

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

Opportunities for expanded leadership and technical skills are available through membership in the intracurricular student organization HOSA- Future Health Professionals. This organization includes local, regional, state, and national levels and instills pride, commitment, and professionalism in its members in order to empower students to become leaders in the global health community.

Biomedical Technology

Course Number: HB11

Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: HU40 Health Science I or HP71 PLTW Human Body Systems
Aligned Career Technical Student Organization: HOSA - Future Health Professionals
Aligned Industry Credential: None
Description: This course challenges students to investigate current trends in health care. Topics include ethics, forensic medicine, infectious diseases, organ transplants, cell biology and cancer, and biomedical research. English language arts and science are reinforced in this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Drone Technology I

Course Number: ID11
Please refer to the Trade, Technology, Engineering, and Industrial Education Program Area for the full course description.

Drone Technology II

Course Number: ID12
Please refer to the Trade, Technology, Engineering, and Industrial Education Program Area for the full course description.

Drone Technology Fundamentals

Course Number: ID10
Please refer to the Trade, Technology, Engineering, and Industrial Education Program Area for the full course description.

Exploring Healthcare: Medical Terms and Body Systems in Biotechnology Careers

Course Number: HY12
Recommended Maximum Enrollment: 30
Hours of Instruction: 20-30
Prerequisite: None
Aligned Career Technical Student Organization: HOSA - Future Health Professionals
Aligned Industry Credential: None
Description: Students will gain an understanding of medical terminology, the nervous system and five senses, and careers related to Biotechnology.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Healthcare: Medical Terms and Body Systems in Diagnostic Service Careers

Course Number: HY11
Recommended Maximum Enrollment: 30
Hours of Instruction: 20-30
Prerequisite: None
Aligned Career Technical Student Organization: HOSA - Future Health Professionals
Aligned Industry Credential: None
Description: Students will gain an understanding of medical terminology, body systems (respiratory and circulatory) and careers related to Diagnostic Services.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Healthcare: Medical Terms and Body Systems in Therapeutic Service Careers

Course Number: HY10
Recommended Maximum Enrollment: 30
Hours of Instruction: 20-30
Prerequisite: None
Aligned Career Technical Student Organization: HOSA - Future Health Professionals
Aligned Industry Credential: None
Description: Students will gain an understanding of medical terminology, body systems (skeletal, muscular, and integumentary) and careers related to Therapeutic Services.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Foundations of Health Science

Course Number: HU10
Recommended Maximum Enrollment: 30
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
Aligned Career Technical Student Organization: HOSA - Future Health Professionals
Aligned Industry Credential: None
Description: This course is designed for students to acquire foundational knowledge pertinent to healthcare professionals. Topics include advancements in healthcare, medical terminology, mathematics used in healthcare, the domains of healthcare, and in-demand healthcare careers. Students will enhance their communication, leadership, and career decision-making skills. English language arts and mathematics are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Fundamentals of Gerontology

Course Number: HN44

Recommended Maximum Enrollment: 20*

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

Prerequisite: HU42 Health Science II

Aligned Career Technical Student Organization: HOSA

Aligned Industry Credential: Nurse Aide I – Geriatric Aide Endorsement**

**Students who are listed on the North Carolina Nurse Aide 1 Registry and successfully complete Fundamentals of Gerontology will receive an endorsement on the Nurse Aide 1 listing. Students who take Fundamentals of Gerontology and later (within two years of completing Fundamentals of Gerontology) become listed on the NC Nurse Aide I Registry as a Nurse Aide I, may receive the NAI geriatric endorsement from the North Carolina Division of Health Services Regulation (DHSR).

Description: Adapted from the NC Division of Health Service Regulation, this course is designed to assist future healthcare professionals understand the unique physical and psychological changes related to aging. Healthcare strategies to meet the needs of the aging population will be addressed. HN43 Nursing Fundamentals and Practicum is recommended as good preparation for this course. However, students may take HN44 Fundamentals of Gerontology before or after HN43 Nursing Fundamentals and Practicum. Clinical is optional for this course.

*Course enrollment limited to 20 to ensure safety in laboratory settings.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	No
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Health Science I

Course Number: HU40

Recommended Maximum Enrollment: 30

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

Prerequisite: None

Aligned Career Technical Student Organization: HOSA - Future Health Professionals

Aligned Industry Credential: First Aid

Description: This course is developed to focus on human anatomy, physiology, and human body diseases and disorders, and recognizing and responding to first aid emergencies. Students will learn about healthcare careers within the context of human body systems. Projects, teamwork, and demonstrations serve as instructional strategies that reinforce the curriculum content. English language arts and science are reinforced in this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Health Science II

Course Number: HU42

Recommended Maximum Enrollment: 20

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

Prerequisite: HU40 Health Science I OR HP71 PLTW Human Body Systems

Aligned Career Technical Student Organization: HOSA - Future Health Professionals

Aligned Industry Credential: Basic Life Support
OSHA 10-Hour Industry Certification (Healthcare)
Stop the Bleed

Description: This course developed to help students expand their understanding of the healthcare industry, including employability skills, safety and infection control procedures, and clinical skills used by allied health professionals. In addition, students will demonstrate their understanding of cardiovascular and respiratory systems by applying BLS CPR skills. Projects, teamwork, and demonstrations serve as instructional strategies to reinforce the curriculum content. English language arts and science are reinforced in this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

IB Sports Exercise and Health Science HL

Course Number: 3I10

Recommended Maximum Enrollment: 30

Hours of Instruction: 240

Prerequisite: None

Aligned Career Technical Student Organizations: HOSA - Future Health Professionals

Aligned Industry Credential: None

Description: Students deepen their knowledge and understanding necessary to apply scientific principles and analyze human performance.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

IB Sports Exercise and Health Science SL

Course Number: 3I08
Recommended Maximum Enrollment: 30
Hours of Instruction: 150
Prerequisite: None
Aligned Career Technical Student Organizations: HOSA - Future Health Professionals
Aligned Industry Credential: 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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Nursing Fundamentals and Non-Practicum

Course Number: HN42
Recommended Maximum Enrollment: 10*
Hours of Instruction: 270 (block) 300 (regular)
Prerequisite: HU42 Health Science II
Aligned Career Technical Student Organization: HOSA - Future Health Professionals
Aligned Industry Credential: None
Description: This course is designed for students interested in medical careers where personal care and basic nursing skills are used. This course is an enhanced adaptation of the North Carolina Division of Nursing Service Regulation (DHSR) Nurse Aide I (NA I) Curriculum. English and language arts mathematics, and science are reinforced. This course is for students that do not attend clinical. Students are enrolled in HN43 Nursing Fundamentals and Practicum when determined that they are unable to attend clinical. Students will then be transferred to HN42 Nursing Fundamentals and Non-Practicum.
* Enrollment is limited per North Carolina Board of Nursing (BON) Administrative Rule 21 NCAC36.0318(i), which requires the ratio of teacher to HN42 Nurse Aide students be 1:10 or less while in the clinical area. DHSR applies this 1:10 ratio to the classroom and laboratory training area.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	No
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-Based Learning descriptions can be found on page 3.**	

Nursing Fundamentals and Practicum

Course Number: HN43

Recommended Maximum Enrollment: 10*

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

Prerequisite: HU42 Health Science II

Aligned Career Technical Student Organization: HOSA - Future Health Professionals

Aligned Industry Credential: North Carolina Nurse Aide I

Description: This course is designed for students interested in medical careers where personal care and basic nursing skills are used. This course is an enhanced adaptation of the North Carolina Division of Health Service Regulation (DHSR) Nurse Aide I (NAI) curriculum and helps prepare students for the National Nurse Aide Assessment (NNAAP). Students who pass the NNAAP become listed on the NC NAI Registry. English language arts mathematics, and science are reinforced.
* Enrollment is limited per North Carolina Board of Nursing (BON) Administrative Rule 21 NCAC36.0318(i), which requires the ratio of teacher to HN43 Nurse Aide students be 1:10 or less while in the clinical area. DHSR applies this 1:10 ratio to the classroom and laboratory training area. HN43 Nursing Fundamentals is total Nurse Aide 1 training. Maximum enrollment for one teacher for one section of students is ten in HN43 Nursing Fundamentals.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	No
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Pharmacy Technician

Course Number: HH32

Recommended Maximum Enrollment: 20

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

Prerequisite: HU42 Health Science II OR HB11 Biomedical Technology

Aligned Career Technical Student Organization: HOSA - Future Health Professionals

Aligned Industry Credential: CPhT Certified Pharmacy Technician

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

PLTW Biomedical Innovations

Course Number: HP73

Recommended Maximum Enrollment: 20

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

Prerequisite: HP72 PLTW Medical Interventions

Aligned Career Technical Student Organization: HOSA - Future Health Professionals

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

PLTW Human Body Systems

Course Number: HP71

Recommended Maximum Enrollment: 20

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

Prerequisite: HP70 PLTW Principles of Biomedical Sciences

Aligned Career Technical Student Organization: HOSA - Future Health Professionals

Aligned Industry Credential: CPR/AED
First Aid

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Medical Interventions

Course Number: HP72

Recommended Maximum Enrollment: 20

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

Prerequisite: HP71 PLTW Human Body Systems

Aligned Career Technical Student Organization: HOSA - Future Health Professionals

Aligned Industry Credential: None

Description: This course allows students to investigate the interventions involved in the prevention, diagnosis,and treatment of disease. It is a “How-To” manual for maintaining overall health. English language arts and science are reinforced in this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Principles of Biomedical Sciences

Course Number: HP70

Recommended Maximum Enrollment: 20

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

Prerequisite: None

Aligned Career Technical Student Organization: HOSA - Future Health Professionals

Aligned Industry Credential: Stop the Bleed

Description: This course is designed for students to investigate the human body systems and various health conditions. They determine factors that lead to the death of a fictional person and investigate lifestyle choices.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Project Management I

Course Number: CS11

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

Project Management II

Course Number: CS12

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

Public Health Fundamentals

Course Number: HN45

Recommended Maximum Enrollment: 20*

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

Prerequisite: HU42 Health Science II

Aligned Career Technical Student Organization: HOSA - Future Health Professionals

Aligned Industry Credential: Nurse Aide I – Home Care Aide Endorsement**

** Students who are listed on the NC Nurse Aide I Registry and successfully complete Public Health Fundamentals will receive a Home Care Aide endorsement on the Nurse Aide I listing. Students, who successfully complete Public Health Fundamentals and later (within two years of completing HN45 Public Health Fundamentals) become listed on the NC Nurse Aide I Registry as a Nurse Aide I, may receive the NAI Home Care Aide endorsement.

Description: Adapted from the NC Division of Health Services Regulation, this course is designed to assist future healthcare professionals understand the unique challenges and strategies involved in the delivery of healthcare outside traditional facilities and without traditional supervision structure. This course is responsive to overwhelming need for community-based healthcare. HN43 Nursing Fundamentals is recommended as good preparation for this course. However, students may take HN45 Public Health Fundamentals before or after HN43 Nursing Fundamentals and Practicum.

* Course enrollment limited to 20 to ensure safety in laboratory settings.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	No
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Health Informatics I - Data and Use

Course Number: HV11

Recommended Maximum Enrollment: 20*

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

Prerequisite: None

Aligned Career Technical Student Organization: HOSA - Future Health Professionals, SkillsUSA

Aligned Industry Credential: 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.

* Course enrollment limited to 20 to ensure safety in laboratory settings.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Health Informatics II - Transforming Data

Course Number: HV12

Recommended Maximum Enrollment: 20*

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

Prerequisite: HV11 SREB AC Health Informatics I - Data and Use

Aligned Career Technical Student Organization: HOSA - Future Health Professionals, SkillsUSA

Aligned Industry Credential: None

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. Th e 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?

* Course enrollment limited to 20 to ensure safety in laboratory settings.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Health Informatics II - Transforming Information Honors

Course Number: HV13

Recommended Maximum Enrollment: 20*

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

Prerequisite: HV12 SREB AC Health Informatics II -Transforming Data

Aligned Career Technical Student Organization: HOSA - Future Health Professionals, SkillsUSA

Aligned Industry Credential: None

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.

*Course enrollment limited to 20 to ensure safety in laboratory settings.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Health Informatics IV - Problems and Solutions Honors

Course Number: HV14

Recommended Maximum Enrollment: 20*

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

Prerequisite: HV13 SREB AC Health Informatics II - Transforming Information Honors

Aligned Career Technical Student Organization: HOSA - Future Health Professionals, SkillsUSA

Aligned Industry Credential: None

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.
*Course enrollment limited to 20 to ensure safety in laboratory settings.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

CTE Advanced Studies

Course Number: WB29 (HLTH)

Recommended Maximum Enrollment: 25

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This culminating course is for juniors and seniors who have earned two technical credits, one of which is a completer course, in one Career Pathway. The Advanced Studies course must augment the content of the completer course and prepare students for success in transitioning to postsecondary education and future careers. Students work under the guidance of a teacher with expertise in the content of the completer course in collaboration with community members, business representatives, and other school-based personnel. The four parts of the course include writing a research paper, producing a product, developing a portfolio, and delivering a presentation. Students demonstrate their abilities to use 21st century skills. Competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace readiness skills through authentic experiences.

CTE Apprenticeship

Course Number: WB30 (HLTH)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: Students who participate in apprenticeships or pre-apprenticeships through Apprenticeship NC and the North CarolinaDepartment of Labor can also earn CTE credit while they earn hours and experience toward an adult apprenticeship leading to a completed journeyman certificate.

CTE Career and College Promise

Course Number: Various

Recommended Maximum Enrollment: Varies

Hours of Instruction: Does not apply

Prerequisite: None

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

Aligned Industry Credential: None

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

CTE Entrepreneurial Experience

Course Number: WB32 (HLTH)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This course involves students developing knowledge and proficiency in running a business. Students gain work-place skills, develop an understanding of how to manage a business, and are responsible for all risks.

CTE Internship

Course Number: WB31 (HLTH)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: A CTE Internship allows for additional development of career and technical competencies within a general career field. Internships allow students to observe and participate in daily operations, develop direct contact with job personnel, ask questions about particular careers, and perform certain job tasks. This activity is exploratory and allows the student to get hands-on experience in a number of related activities. The teacher, student, and the business community jointly plan the organization, implementation, and evaluation of an internship, regardless of whether it is an unpaid or paid internship.

TRADE, TECHNOLOGY, ENGINEERING, AND INDUSTRIAL EDUCATION
PROGRAM DESCRIPTION

Trade, Technology, Engineering, and Industrial Education (TTEI) programs provide students with the skills and conceptual knowledge needed for careers in industry, engineering, and design. Students can focus on industry certifications for careers immediately after graduation or develop skills and knowledge needed for higher level professional degrees in engineering and design fields.

Career pathways that students may pursue include:

- Advanced Manufacturing
- Automotive Services
- Carpentry
- Collision Repair
- Drafting Architectural
- Drafting Engineering
- Drone Technology
- Electrical Trades
- Emergency Management
- Emergency Medical Technology
- Firefighter Technology
- HVAC/R
- Law and Justice
- Masonry
- Metals Manufacturing
- PLTW Engineering
- Plumbing
- Public Safety
- Solar Photovoltaics
- SREB AC Career Pathway – Aerospace Engineering
- SREB AC Career Pathway – Automated Materials Joining
- SREB AC Career Pathway – Clean Energy Technology
- SREB AC Career Pathway – Energy and Power
- SREB AC Career Pathway – Global Logistics and Supply Chain Management
- SREB AC Career Pathway – Innovations in Science and Technology
- SREB AC Career Pathway – Integrated Production Technologies
- Technology Engineering and Design
- Welding
- Woodworking

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

Students may pursue more than one intracurricular CTSO.

SkillsUSA is the premier student leadership organization in the country with over 300,000 members nationwide. SkillsUSA-NC offers many activities to enrich our students, advisors, and professional members throughout the year. The activities include professional and leadership development conferences, competitions that measure both technical and employability skills, and opportunities for scholarships, employment, networking, and competitive skills. Leadership events are held for regional, state, national, and international levels.

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

Advanced Manufacturing I

Course Number: IM11
Recommended Maximum Enrollment: 15
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: None
Aligned Career Technical Student Organization: SkillsUSA
Aligned Industry Credential: Certified Production Technician (CPT) - Safety
Certified Production Technician (CPT) – Maintenance Awareness
OSHA 10-Hour General Industry (Manufacturing) Certification
Description: This course is the first part of a two-part sequence on the basic functional knowledge and skills needed in the advance manufacturing environment. This course covers introduction to manufacturing, safety, and equipment maintenance and is based upon the Manufacturing Skills Standards Council's (MSSC) Certified Production Technicians certification (CPT). CPT is recognized by manufacturers in NC and the USA as a fundamental certification needed by advanced manufacturing production workers. Topics included in this course include Introduction to Advanced Manufacturing, Communications, Production Teams, Training and Leadership, Safety Organization, Personal Protective Equipment, Fire and Electrical Safety, Work Area Safety, Hazardous Material Safety, Tool and Machine Safety, Material Handling Safety, Welding, Basic Electrical Circuits, Electrical Measurement, Electrical Power, Pneumatic, Power Systems, Hydraulic Power Systems, Lubrication Concepts, Bearings and Couplings, Belt Drives, Chain Drives, Machine Control Concepts, and Machine Automation. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Advanced Manufacturing II

Course Number: IM12

Recommended Maximum Enrollment: 15

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

Prerequisite: IM11 Advanced Manufacturing I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: Certified Production Technician (CPT)- Manufacturing Processes and Production
Certified Production Technician (CPT)- Quality Practices and Measurement

Description: This course is the second part of a two-part sequence on the basic functional knowledge and skills needed in the advance manufacturing environment. This course covers quality and processes and is based upon the Manufacturing Skills Standards Council's (MSSC) Certified Production Technicians certification (CPT). CPT is recognized by manufacturers in NC and the USA as a fundamental certification needed by advanced manufacturing production workers. Topics included in this course include periodic or statistically based internal quality audit activities, calibration of gages and other data collection equipment, continuous improvements, inspection materials and product/process, documentation of quality tests, communication of quality problems, corrective actions used to restore or maintain quality, record process outcomes and trends, fundamentals of blueprint reading, the use of common measurement systems and precision measurement tools, identifying customer needs, determining resources available for the production process, setting up and verifying equipment for the production process, team production goals, making job assignments, coordinating work flow with team members and other work groups, production and material requirements and product specifications, perform, monitor and document the process to make the product, document product and process compliance with customer requirements, and prepare final product for shipping or distribution.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Automotive Service Fundamentals

Course Number: IT11

Recommended Maximum Enrollment: 20*

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: S/P2- Automotive Service Safety
S/P2- Automotive Service Pollution Prevention

Description: This course introduces automotive safety, basic automotive terminology, system and component identification, knowledge and introductory skills in hand tools, shop equipment, basic servicing, and use of service information. Also careers and various job opportunities in the automotive repair industry will be discussed. As part of the ASE Education Foundation accreditation, topics are aligned to the Maintenance and Light Repair (MLR) requirements. English language arts and mathematics are reinforced.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Automotive Service I

Course Number: IT16

Recommended Maximum Enrollment: 20*

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

Prerequisite: IT11 Automotive Service Fundamentals

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: None

Description: This course develops automotive knowledge and skills in performing scheduled automotive maintenance, servicing, and basic testing of brakes, electrical systems, drivetrain, engine, HVAC and steering and suspension systems, emphasizing hands-on experience. As part of the ASE Education Foundation accreditation topics are aligned to the Maintenance and Light Repair (MLR) requirements. English language arts, science, and mathematics are reinforced.

*Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Automotive Service II

Course Number: IT17

Recommended Maximum Enrollment: 20

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

Prerequisite: IT16 Automotive Service I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: ASE Entry-Level Certification - Maintenance and Light Repair
ASE Entry-Level Certification - Brakes

Description: This course builds on the knowledge and skills introduced in Automotive Servicing I and develops advanced knowledge and skills in vehicle system repair and/or replacement of components in the brakes, electrical systems, drivetrain, engine, HVAC and steering and suspension systems, emphasizing hands-on experience. As part of the ASE Education Foundation accreditation, topics are aligned to the Maintenance and Light Repair (MLR) requirements. English language arts and mathematics are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Automotive Service III

Course Number: IT18

Recommended Maximum Enrollment: 20*

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

Prerequisite: IT17 Automotive Service II

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: ASE - Auto Maintenance and Light Repair (Test G1)
ASE Entry-Level Certification- Electrical/Electronic Systems

Description: This course builds on the skills and knowledge introduced in Automotive Service I and II. Building advanced automotive skills and knowledge in vehicle servicing, testing, repair, and diagnosis of brakes, electrical systems, drivetrain, engine, HVAC and steering and suspension systems, while emphasizing hands-on experience. As part of the ASE Education Foundation accreditation, topics are aligned to the Maintenance and Light Repair (MLR) requirements. English language arts and mathematics are reinforced.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Carpentry I

Course Number: IC21
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC00 Construction Core
Aligned Career Technical Student Organization: SkillsUSA
Aligned Industry Credential: NC NCCER - Carpentry I
Description: This course is designed for students to develop basic carpentry terminology and technical aspects of carpentry with emphasis on the development of introductory skills to include orientation to the trade, building materials, fasteners, and adhesives, hand and power tools, reading construction drawings, specifications, and layouts, floor system construction procedures, wall systems, and basic stair layout. English language arts and mathematics are reinforced.

* Due to potentially hazardous equipment, a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Carpentry II

Course Number: IC22
Recommended Maximum Enrollment: 20*
Hours of Instruction: 135 (block) 150 (regular)
Prerequisite: IC21 Carpentry I
Aligned Career Technical Student Organization: SkillsUSA
Aligned Industry Credential: NC NCCER - Carpentry II
Description: This course builds on skills mastered in Carpentry I and provides an emphasis on roof framing procedures, roofing applications, thermal and moisture protection, windows and exterior doors installation, exterior finishing, and the introduction to weatherization module. English language arts and mathematics are reinforced.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Carpentry III

Course Number: IC23

Recommended Maximum Enrollment: 20*

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

Prerequisite: IC22 Carpentry II

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - Carpentry III

Description: This course builds on skills mastered in Carpentry II and develops advanced technical aspects of carpentry with the emphasis on commercial drawing, cold-formed steel framing construction methods, drywall installations, drywall finishing procedures, doors and door hardware installation, and windows, door, floor, and ceiling trim procedures. English language arts and mathematics are reinforced.
* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Collision Repair Fundamentals

Course Number: IT30

Recommended Maximum Enrollment: 20

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: S/P2 Collision Repair and Refinish Safety
S/P2 Collision Repair and Refinish - Pollution Prevention

Description: This course is designed to introduce students to safety, basic collision repair terminology, system and component identification, knowledge and introductory skills in hand tools, shop equipment, basic servicing, and use of service information. Also, career and various job opportunities in the collision repair industry will be covered. English language arts and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Collision Repair I

Course Number: IT31

Recommended Maximum Enrollment: 20

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

Prerequisite: IT30 Collision Repair Fundamentals

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: None

Description: This course is designed to focus on non-structural repairs to automobiles. Using curriculum materials from the industry recognized I-CAR organization, students will learn about trim and hardware, material identification, steel cosmetic, straightening and plastic repair, moveable glass replacement, and bolted-on parts replacement. English language arts and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Collision Repair II- Non-Structural

Course Number: IT32

Recommended Maximum Enrollment: 20

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

Prerequisite: IT31 Collision Repair I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: I-CAR Platinum™ ProLevel® 1 for Non-Structural

Description: This course is designed to continues the focus on non-structural repairs to automobiles. Using curriculum materials from the industry recognized I-CAR organization, students will learn additional information about trim and hardware, material identification, steel cosmetic straightening and plastic repair, moveable glass replacement, and bolted-on parts replacement. English language arts and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Collision Repair II- Refinishing

Course Number: IT33

Recommended Maximum Enrollment: 20

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

Prerequisite: IT31 Collision Repair I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: I-CAR Platinum™ ProLevel® 1 for Refinishing
ASE Entry-Level Certification - Painting and Refinishing

Description: This course focuses on refinishing automobiles. Using curriculum from the industry recognized I-CAR organization, students will learn about repairing and priming vehicles and vehicle parts; use and maintain a spray gun; mix, store, and dispose of hazardous materials; understand the corrosion protection process; sand, buff, and detail a refinished vehicle. English, language arts, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Construction Core

Course Number: IC00

Recommended Maximum Enrollment: 20*

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - Construction Core
OSHA 10-Hour Construction Industry Certification

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

* Due to potentially hazardous equipment, a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Drafting I

Course Number: IC61

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: Autodesk Certified User AutoCAD

Description: This course introduces students to the use of simple and complex graphic tools used to communicate and understand ideas, concepts and trends found in the areas of architecture, manufacturing, engineering, science, and mathematics, sketching and computer assisted design (CAD) skills and techniques. English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Drafting II- Architectural

Course Number: IC62

Recommended Maximum Enrollment: 25

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

Prerequisite: IC61 Drafting I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: Autodesk Certified User Revit

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Drafting II - Engineering

Course Number: IV22

Recommended Maximum Enrollment: 25

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

Prerequisite: IC61 Drafting I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: Autodesk Certified User Inventor
Certified SolidWorks Associate (CSWA)

Description: This course teaches the development of knowledge and advanced skills in Engineering Drafting and Design. An understanding of 3D CAD concepts and terms, and the use of 3D CAD software such as INVENTOR or SolidWorks, are essential to this course, and the required method of producing finished drawings. Topics include cover advanced levels of Engineering Drafting and Design, Career Opportunities, Problem Solving, Manufacturing Processes, Parametric- Solid Modeling, Dimensioning and Tolerancing, Working Drawings, and 3D modeling. English language arts and mathematics are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Drafting III- Architectural

Course Number: IC63

Recommended Maximum Enrollment: 25

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

Prerequisite: IC62 Drafting II - Architectural

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: Autodesk Certified Professional Revit

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Drafting III- Engineering

Course Number: IV23

Recommended Maximum Enrollment: 25

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

Prerequisite: IV22 Drafting II - Engineering

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: Autodesk Certified Professional Inventor
Certified SolidWorks Professional (CSWP)

Description: This course teaches the development of knowledge and advanced skills in Engineering Drafting and Design. An understanding of 3D CAD concepts and terms, and the use of 3D CAD software such as INVENTOR or SolidWorks, are essential to this course, and the required method of producing finished drawings. Topics include cover advanced levels of Engineering Drafting and Design, Employment Requirements, Engineering Design Concepts and Principles, Advanced Manufacturing Processes, Advanced Parametric-Solid Modeling, Geometric Dimensioning and Tolerancing, Work Drawings and Assemblies, 3D Modeling, Sheet Metal Parts, and Professional Portfolio. English language arts and mathematics are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Drone Technology Fundamentals

Course Number: ID10

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: FAA Trust

Description: This course will provide students knowledge in the field of aviation related to drone technology. Students will also learn the skills needed to fly basic drones for recreational purposes. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Drone Technology I

Course Number: ID11

Recommended Maximum Enrollment: 15

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

Prerequisite: None

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

Aligned Industry Credential: CFR 14 Part 107 UAS Remote Pilot Certification
NCDOT NC UAS Operator Permit

Description: This course is designed to provide students basic information about the drone industry to gain an understanding of careers and skills in this field. FAA 14 CFR part 107 (The Small UAS Rule), officially known as "Part 107 Remote Pilot Certificate" is covered. The Small UAS rule adds a new part 107 to Title 14 Code of Federal Regulations (14 CFR) to allow for routine civil operation of small Unmanned Aircraft Systems (UAS) in the National Airspace System (NAS) and provide safety rules for those operations. This course is also designed for an introduction to basic flight of drones to include manual flight and flight and mapping software. Minimum 16 age requirement for enrollment by the end of the course due to FAA Part 107 U.S. Commercial Drone Pilot Certification testing age requirement. English language arts are reinforced.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Drone Technology II

Course Number: ID12

Recommended Maximum Enrollment: 15

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

Prerequisite: ID11 Drone Technology I

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

Aligned Industry Credential: NFPA 2400
Esri Drone2Map

Description: This course is designed to provide students, who have their FAA CFR 14 Part 107 (The Small UAS Rule), officially known as "Part 107 Remote Pilot Certificate" the knowledge and skills needed to be a commercial pilot in the Drone Industry. Entrepreneurship, Fleet management, and Drone software are included in this course. Students will fly a variety of mission types to include Construction, Agriculture, Public Safety, Power and Energy, and Cinematography. English language arts are reinforced.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Electrical Trades I

Course Number: IC41

Recommended Maximum Enrollment: 20*

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

Prerequisite: IC00 Construction Core

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - Electrical Trades I

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

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Electrical Trades II

Course Number: IC42

Recommended Maximum Enrollment: 20*

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

Prerequisite: IC41 Electrical Trades I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - Electrical Trades II

Description: This course builds on skills mastered in Electrical Trades I and provides an introduction to conductors and cables, construction drawings, residential electric services, test equipment usage, alternating current theory, grounding and bonding techniques, motors theory and application, and electric lighting to structures. English language arts, mathematics, and science are reinforced. Work-based learning strategies appropriate for this course include apprenticeship, cooperative education, internship, and job shadowing. This course helps prepare students for National Center for Construction Education and Research (NCCER) certification. SkillsUSA competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace readiness skills through authentic experiences.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Electrical Trades III

Course Number: IC43

Recommended Maximum Enrollment: 20*

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

Prerequisite: IC42 Electrical Trades II

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - Electrical Trades III

Description: This course builds on skills mastered in Electrical Trades II and the course content includes conduit bending techniques, pull and junction boxes, conductor installations, cable tray, conductor terminations and splices, circuit breakers and fuses, and control systems and fundamental concepts. The Weatherization Module is also included in the course as a "Supplemental" Module. Upon successful completion of this course, students should be prepared to enter the workforce as an electrical helper and/or continuing education towards degrees in Construction Management or Electrical Engineering. English language arts, mathematics, and science are reinforced.
* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Emergency Management I

Course Number: IP51

Recommended Maximum Enrollment: 25

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

Prerequisite: IP11 Public Safety I OR IP22 Emergency Medical Technology II OR IP32 Firefighter Technology II OR IP42 Law and Justice II

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC Emergency Management I Certification

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Emergency Management II

Course Number: IP52

Recommended Maximum Enrollment: 25

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

Prerequisite: IP51 Emergency Management I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC Emergency Management II Certification

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Emergency Medical Technology I

Course Number: IP21

Recommended Maximum Enrollment: 20*

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

Prerequisite: English II

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: Emergency Medical Responder (EMR)
National Incident Management System
Basic Life Support
Stop the Bleed

Description: This course is aligned to the Emergency Medical Responder certification (EMR) available from the North Carolina Office of Emergency Medical Services. The course includes clinical skills in each area as specified by NC OEMS for successful completion of this certification. Schools should use resources from the community to help deliver instruction to the students. English language arts are reinforced. Students must turn 17 prior to the end of the course to be enrolled in this course per NC OEMS requirements.
* Due to safety requirements as specified in the approved NCOEMS NCDPI educational plan, this course is limited to 20 students per teacher.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Emergency Medical Technology II

Course Number: IP22

Recommended Maximum Enrollment: 16*

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

Prerequisite: IP21 Emergency Medical Technology I and English III

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: Emergency Medical Technician - EMT

Description: This course is aligned to the Emergency Medical Technician certification (EMT) available from the North Carolina Office of Emergency Medical Services. The course includes clinical skills in each area as specified by NC OEMS for successful completion of this certification. Schools should use resources from the community to help deliver instruction to the students. English language arts are reinforced.

* Due to safety requirements as specified in the approved NCOEMS NCDPI educational plan, this course is limited to 16 students per teacher.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Engineering Design

Course Number: TE13

Recommended Maximum Enrollment: 25

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

Prerequisite: TE11 Technology Engineering and Design

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

Aligned Industry Credential: None

Description: This course focuses on how engineers apply their creativity, resourcefulness, mathematical, scientific, and technical knowledge, and skills in the creation or refinement of technological products/systems. A key approach will be the employment of a sophisticated, sequential, and iterative design and development process to solve authentic engineering tasks/problems. Students will be challenged to participate as members of engineering teams within a typical business organization. Independent and group work will be reflective of authentic engineering projects found in the designed world. Student performance within this structure will be assessed in numerous and diverse ways. It is important to note that measurement of student performance will be reflective of actual professional engineering evaluative processes currently used in this career field. Major topics, or chapters, will be included to organize instruction of appropriate standards and benchmarks and reflect contemporary engineering industry practices.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Engineering: Design and Engineering

Course Number: TY01
Recommended Maximum Enrollment: 25
Hours of Instruction: 20
Prerequisite: None
Aligned Career Technical Student Organization: Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Students will gain an understanding of design and engineering. Students apply the design process in the inventions or innovation of new products, processes, or systems.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Engineering: Design World

Course Number: TY03
Recommended Maximum Enrollment: 25
Hours of Instruction: 13
Prerequisite: None
Aligned Career Technical Student Organization: Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Students will gain an understanding of the design world. They learn about the core concepts of technology and the various approaches to solving problems, including engineering design and experimentation.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Engineering: Maintaining Technological Systems

Course Number: TY11

Recommended Maximum Enrollment: 25

Hours of Instruction: 19

Prerequisites: TY00 Engineering: Meeting Technology, TY01 Engineering: Design and Engineering, TY02 Engineering: Project Revive, TY03 Engineering: Design World, TY04 Engineering: Using Design and Creativity to Help Others, TY05 Engineering: Technology and Society

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

Aligned Industry Credential: None

Description: In this course, students will gain an understanding of how to maintain technological systems. Students will understand and interpret technical information from a variety of sources, including written, electronic, and human communication. Students will learn to apply technical information to evaluate, test, and problem-solve within systems.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Engineering: Meeting Technology

Course Number: TY00

Recommended Maximum Enrollment: 25

Hours of Instruction: 27

Prerequisite: None

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

Aligned Industry Credential: None

Description: In this course, students learn about the nature of technology and problem solving. Students are involved in activities and experiences where they learn about brainstorming, visualizing, modeling, constructing, testing, experimenting, and refining designs.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Engineering: Project Revive

Course Number: TY02
Recommended Maximum Enrollment: 25
Hours of Instruction: 39
Prerequisite: None
Aligned Career Technical Student Organization: Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Students will gain an understanding of Project Revive. Students will also develop skills in researching for information and communicating design information.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Engineering: Technological Systems and the Designed World

Course Number: TY13
Recommended Maximum Enrollment: 25
Hours of Instruction: 22
Prerequisites: TY00 Engineering: Meeting Technology, TY01 Engineering: Design and Engineering, TY02 Engineering: Project Revive, TY03 Engineering: Design World, TY04 Engineering: Using Design and Creativity to Help Others, TY05 Engineering: Technology and Society
Aligned Career Technical Student Organization: Technology Student Association (TSA)
Aligned Industry Credential: None
Description: In this course, students are prepared to address specific challenges within different types of technical systems. Systems included in this exploration include Communications, Construction, Manufacturing, Biomedical, and Power and Energy. Students engage in activities and experiences where they build and evaluate the designed world.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Engineering: Technological Systems and How They Work

Course Number: TY10

Recommended Maximum Enrollment: 25

Hours of Instruction: 17

Prerequisites: TY00 Engineering: Meeting Technology, TY01 Engineering: Design and Engineering, TY02 Engineering: Project Revive, TY03 Engineering: Design World, TY04 Engineering: Using Design and Creativity to Help Others, TY05 Engineering: Technology and Society

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

Aligned Industry Credential: None

Description: In this course, students will gain an understanding of technological systems and how they work by investigating systems through their function, design, and development. Students will understand what systems are, why they are developed, and how "systems thinking" can be used to describe them. Students will also engage in activities and experiences where they evaluate the impacts of technology through the lenses of culture, society, economics, and the environment.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Engineering: Technological Systems Interactions

Course Number: TY12

Recommended Maximum Enrollment: 25

Hours of Instruction: 15

Prerequisites: TY00 Engineering: Meeting Technology, TY01 Engineering: Design and Engineering, TY02 Engineering: Project Revive, TY03 Engineering: Design World, TY04 Engineering: Using Design and Creativity to Help Others, TY05 Engineering: Technology and Society

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

Aligned Industry Credential: None

Description: In this course, students are introduced to the idea of technological systems, addressing the issues of design, development constraints, functions, and processes within a system, and the interaction of two or more systems. Students will engage in activities and experiences where they build and evaluate technological systems.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Engineering: Technology and Society

Course Number: TY05
Recommended Maximum Enrollment: 25
Hours of Instruction: 15
Prerequisite: None
Aligned Career Technical Student Organization: Technology Student Association (TSA)
Aligned Industry Credential: None
Description: In this course, students will have opportunities to study the scope of technology and its impacts on society. Students are involved in activities and experiences where they learn about brainstorming, visualizing, modeling, constructing, testing, experimenting, and refining designs.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Engineering: Using Design and Creativity to Help Others

Course Number: TY04
Recommended Maximum Enrollment: 25
Hours of Instruction: 17
Prerequisite: None
Aligned Career Technical Student Organization: Technology Student Association (TSA)
Aligned Industry Credential: None
Description: In this course, students will gain an understanding of design and creativity used to help others. Students participate in engineering design activities to understand how criteria, constraints, and processes affect designs.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Automotive Service

Course Number: TY56

Recommended Maximum Enrollment: 30

Hours of Instruction: 30

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: None

Description: Students will gain an understanding of the automotive industry by exploring the various automotive systems and careers in the automotive industry.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Carpentry

Course Number: TY50

Recommended Maximum Enrollment: 25

Hours of Instruction: 30

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: None

Description: Students will explore key terminology, careers, and safety associated with working in the Construction Industry, more specifically in the Carpentry field. Knowledge gained in this course will help to spark interest in the Architecture and Construction Education pathway.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Electrical Trades

Course Number: TY52
Recommended Maximum Enrollment: 25
Hours of Instruction: 30
Prerequisite: None
Aligned Career Technical Student Organization: SkillsUSA
Aligned Industry Credential: None
Description: Students will explore key terminology, careers, and safety associated with working in the Construction Industry, more specifically in the Electrical Trades field. Knowledge gained in this course will help to spark interest in the Architecture and Construction Education pathway.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Masonry

Course Number: TY54
Recommended Maximum Enrollment: 25
Hours of Instruction: 30
Prerequisite: None
Aligned Career Technical Student Organization: SkillsUSA
Aligned Industry Credential: None
Description: Students will explore key terminology, careers, and safety associated with working in the construction industry; more specifically, in the masonry field. Knowledge gained in this course will help to spark interest in the Architecture and Construction Education pathway.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Exploring Safety and Tools in the Trades

Course Number: TY40

Recommended Maximum Enrollment: 30

Hours of Instruction: 15-20

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: None

Description: Students will explore key terminology used with common tools and safety associated with working in the various trades. Knowledge gained in this course will help to reinforce basic safety, identify basic tools, and spark interest in the various trades and in the aligned CTSO, SkillsUSA.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-Based Learning descriptions can be found on page 3.**	

Firefighter Technology I

Course Number: IP31

Recommended Maximum Enrollment: 20

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NCOSFM - Firefighter Technology I

Description: This course covers part of the NC Firefighter certification modules required for all Firefighters in North Carolina. The modules include Orientation, Communications, Health and Safety, PPE, Building Construction, Portable Extinguishers, Fire Behavior, Tools and Forcible Entry, and Loss Control. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Firefighter Technology II

Course Number: IP32

Recommended Maximum Enrollment: 20

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

Prerequisite: IP31 Firefighter Technology I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NCOSFM - Firefighter Technology II

Description: This course covers part of the NC Firefighter certification modules required for all firefighters in North Carolina. The modules include Ladders, Ventilation, Ropes and Knots, Search and Rescue, Water Supplies and Hose and Streams and Appliances, and Emergency Medical Care. This course prepares students for the North Carolina firefighter certification modules. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Firefighter Technology III

Course Number: IP33

Recommended Maximum Enrollment: 25

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

Prerequisite: IP32 Firefighter Technology II

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NCOSFM – Firefighter Technology III

Description: This course covers part of the NC Firefighter certification modules required for all firefighters in North Carolina. The modules include Rescue, Fire Detection and Suppression Systems, Fire and Life Safety Initiatives, Mayday, HM (HAZMAT) Ops, and TIMS. This course prepares students for the North Carolina firefighter certification modules. SkillsUSA competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace readiness skills through authentic experiences. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

HVAC/R I

Course Number: IL55

Recommended Maximum Enrollment: 20*

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

Prerequisite: IC00 Construction Core

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - HVAC/R I

Description: This course is designed for students to develop basic HVAC terminology and technical aspects of HVAC with emphasis on the development of introductory skills to include Intro to HVAC, Trade Mathematics, Basic Electricity, Intro to Heating, Intro to Cooling, Intro to Air Distribution Systems, Basic Copper and Plastic Piping Practices, Soldering and Brazing, and Basic Carbon Steel Piping Practices. English language arts and mathematics are reinforced.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

HVAC/R II

Course Number: IL56

Recommended Maximum Enrollment: 20*

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

Prerequisite: IL55 HVAC/R I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - HVAC/R II

Description: This course is designed for students to further develop skills mastered in HVAC/R I and provide an emphasis on Alternating Current, Compressors, Refrigerants and Oils, Leak Detection, Evacuation, Recovery and Charging, Metering Devices, Heat Pumps, and Basic Maintenance. English language arts and mathematics are reinforced.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

HVAC/R III

Course Number: IL57

Recommended Maximum Enrollment: 20*

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

Prerequisite: IL56 HVAC/R II

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER – HVAC/R III

Description: This is designed for students to further develop skills mastered in HVAC/R II and develop advanced technical aspects of plumbing with the emphasis on Chimneys, Vents, and Flues, Sheet Metal Duct Systems, Fiberglass and Flexible Duct Systems, Commercial Airside Systems, Air Quality Equipment, and Introduction to Hydronic Systems. The Introduction to Weatherization module is also included in this course. English language arts and mathematics are reinforced.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Law and Justice I

Course Number: IP41

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: National Law Enforcement Certification SPSS

Description: Students desiring to pursue a career in Law and Justice will examine the basic concepts of law related to citizens' rights and officers' responsibilities to maintain a safe society. This course is aligned to an industry recognized certification in Basic Law Enforcement Knowledge for those desiring a career in Law enforcement. The course discusses the history and development of law enforcement in the United States, components of the criminal justice system, including the roles and responsibilities of the police, courts, and corrections, and classification and elements of crimes. Students will receive instruction in critical skill areas including communicating with diverse groups, conflict resolution, the use of force continuum, report writing, operation of police and emergency equipment, and courtroom testimony. Career planning and employability skills will be emphasized. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Law and Justice II

Course Number: IP42

Recommended Maximum Enrollment: 25

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

Prerequisite: IP41 Law and Justice I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: Certified Protection Officer (CPO)

Description: This course emphasizes "need-to-know" information for protection officers throughout the security industry and is aligned to the International Federation of Protection Officers (IFPO) certification as a Certified Protection Officer (CPO). Course content includes: Foundations in Law Enforcement and Protective Services. Communications in Law Enforcement and Protective Services, Protection Officers Functions, Crime Prevention and Physical Security, Safety and Fire Protection, Information Protection, Deviance Crime and Violence, Risk and Threat Management, Procedures in Investigations, Legal Aspects of Security, Procedures for Officer Safety and Used of Force, and Procedures for Relations with Others. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Manufacturing Robotics I

Course Number: IM14

Recommended Maximum Enrollment: 20*

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

Prerequisite: IM11 Advanced Manufacturing I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: FCR-01 FANUC Certified Robot - Operator 1

Description: This course is designed to teach students about robotics in manufacturing, including how to program, operator, and maintain a robot used in the manufacturing environment. This course prepares students for FCR-01 FANUC Certified Robot - Operator 1 assessment through NOCTI. English language arts are reinforced.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Masonry I

Course Number: IC11

Recommended Maximum Enrollment: 20*

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

Prerequisite: IC00 Construction Core

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - Masonry I

Description: This course covers basic masonry terminology and develops technical aspects of the masonry industry with emphasis on the development of introductory skills to include the introduction to masonry, masonry tools and equipment, measurement, drawings and specifications, mortar procedures, and masonry units and installation techniques. Mathematics and English language arts are reinforced.
* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Masonry II

Course Number: IC12

Recommended Maximum Enrollment: 20*

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

Prerequisite: IC11 Masonry I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - Masonry II

Description: This course builds on skills mastered in Masonry I and provides an emphasis on residential plans and drawing interpretation, residential masonry, grout and other reinforcement processes, metalwork in masonry, and the introduction to weatherization. English language arts and mathematics are reinforced.
* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Masonry III

Course Number: IC13

Recommended Maximum Enrollment: 20*

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

Prerequisite: IC12 Masonry II

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - Masonry III

Description: This course builds on skills mastered in Masonry II and provides an emphasis on advanced laying techniques, construction techniques and moisture control procedures, and construction, inspection,and quality control processes. Introductory skills for the Crew Leader are also introduced in this course.

* Due to potentially hazardous processes and equipment, a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Metals Manufacturing Technology I

Course Number: IM41

Recommended Maximum Enrollment: 20*

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NIMS Measurement, Materials, and Safety

Description: This course introduces various processes and job opportunities in manufacturing with emphasis on machining metal parts. Topics include safety, math, measurement, blueprint reading, layout, bench work, sawing, drilling, turning, and milling. This course is aligned and designed to prepare students for the National Institute for Metalworking Skills (NIMS) Measurement, Materials, and Safety credential. Mathematics and English language arts are reinforced.

* Due to potentially hazardous processes and equipment, a maximum enrollment of 20 is recommended.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Metals Manufacturing Technology II

Course Number: IM42

Recommended Maximum Enrollment: 20*

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

Prerequisite: IM41 Metals Manufacturing Technology I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NIMS Job Planning, Benchwork, and Layout

Description: This course introduces various processes in manufacturing with emphasis on machining metal parts. Topics include job planning, job management, layout, bench work. This course is aligned and designed to prepare students for the National Institute for Metalworking Skills (NIMS) Job Planning, Benchwork, and Layout credential. English language arts and mathematics are reinforced.

* Due to potentially hazardous processes and equipment, a maximum enrollment of 20 is recommended.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Metals Manufacturing Technology III

Course Number: IM43

Recommended Maximum Enrollment: 20*

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

Prerequisite: IM42 Metals Manufacturing Technology II

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NIMS Milling I

Description: This course introduces various processes in manufacturing with emphasis on machining metal parts. Topics include milling set up and operations, and quality control. This course is aligned and designed to prepare students for the National Institute for Metalworking Skills (NIMS) Milling I credential. English language arts and mathematics are reinforced.

* Due to potentially hazardous processes and equipment, a maximum enrollment of 20 is recommended.

Work-Based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-Based Learning descriptions can be found on page 3.**	

Plumbing I

Course Number: IL58

Recommended Maximum Enrollment: 20*

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

Prerequisite: IC00 Construction Core

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER – Plumbing I

Description: This course is designed for students to develop basic Plumbing terminology and technical aspects of plumbing with emphasis on the development of introductory skills to include Plumbing Safety, Plumbing Tools, Plumbing Math, Plumbing Drawings, Plastic Pipe and Fittings, Copper Tube and Fittings, Cast-iron Pipe and Fittings, Steel Pipe and Fittings, and Plumbing Fittings.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Plumbing II

Course Number: IL59

Recommended Maximum Enrollment: 20*

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

Prerequisite: IL58 Plumbing I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER – Plumbing II

Description: This course is designed for students to further develop skills mastered in Plumbing I and provide an emphasis on DWV Systems, Water Distribution Systems, Plumbing Math 2, Reading Commercial Drawings, Structural Penetrations, Insulating, and Firestopping, Installing and Testing DWV Piping, Installing Roof, Floor, and Area Drains, and Types of Valves. English language arts and mathematics are reinforced.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Plumbing III

Course Number: IL60

Recommended Maximum Enrollment: 20*

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

Prerequisite: IL59 Plumbing II

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER – Plumbing III

Description: This is designed for students to further develop skills mastered in Plumbing II and develop advanced technical aspects of plumbing with the emphasis on Installing and Testing Water Supply Piping, Installing Fixtures and Valves, Basic Electricity, Installing Water Heaters, and Fuel Gas Systems. The Introduction to Weatherization module is also included in this course. English language arts and mathematics are reinforced.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

PLTW Aerospace Engineering

Course Number: TP25

Recommended Maximum Enrollment: 25

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

Prerequisite: TP11 PLTW Introduction to Engineering Design or TP12 PLTW Principles of Engineering

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Civil Engineering and Architecture

Course Number: TP23

Recommended Maximum Enrollment: 25

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

Prerequisite: TP11 PLTW Introduction to Engineering Design or TP12 PLTW Principles of Engineering

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Computer Integrated Manufacturing

Course Number: TP22

Recommended Maximum Enrollment: 25

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

Prerequisite: TP11 PLTW Introduction to Engineering Design or TP12 PLTW Principles of Engineering

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

Aligned Industry Credential: None

Description: In this specialization Project Lead the Way (PLTW) Pathway to Engineering (PTE) course, students discover and explore manufacturing processes, product design, robotics, and automation, and then they apply what they have learned to design solutions for real-world manufacturing problems. Art, English language arts, mathematics and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Digital Electronics

Course Number: TP21

Recommended Maximum Enrollment: 25

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

Prerequisite: TP11 PLTW Introduction to Engineering Design or TP12 PLTW Principles of Engineering

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Engineering Design and Development

Course Number: TP31

Recommended Maximum Enrollment: 25

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

Prerequisite: TP21 PLTW Digital Electronics or TP22 PLTW Computer Integrated Manufacturing or TP23 PLTW Civil Engineering and Architecture or TP25 PLTW Aerospace Engineering or PLTW Environmental Sustainability

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Engineering Essentials

Course Number: TP13

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

PLTW Environmental Sustainability

Course Number: TP27

Recommended Maximum Enrollment: 25

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

Prerequisite: TP11 PLTW Introduction to Engineering Design or TP12 PLTW Principles of Engineering

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

Aligned Industry Credential: None.

Description: In this specialization Project Lead the Way (PLTW) Pathway to Engineering (PTE) course, students investigate and design solutions in response to real-world challenges related to clean and abundant drinking water, food supply, and renewable energy. Art, English language arts, mathematics, and science are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Gateway: App Creators

Course Number: TY22

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Gateway: Automation and Robotics

Course Number: TY21

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Gateway: Computer Science for Innovators and Makers

Course Number: TY23

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Gateway: Design and Modeling

Course Number: TY20

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Gateway: Energy and the Environment

Course Number: TY24

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Gateway: Flight and Space

Course Number: TY25

Recommended Maximum Enrollment: 25

Hours of Instruction: 45

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Gateway: Green Architecture

Course Number: TY28
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Students learn how to apply green concepts to the fields of architecture and construction. They explore dimensioning, measuring, and architectural sustainability and apply what they have learned to design affordable housing units using Autodesk's® 3D architectural design software.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Gateway: Magic of Electrons

Course Number: TY27
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Students examine the behavior and parts of atoms as well as the impact of electricity on the world around them. They learn skills in basic circuitry design and use what they know to propose designs such as a burglar alarm for an art museum.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Gateway: Medical Detectives

Course Number: TY29
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Students play the role of real-life medical detectives as they collect and analyze medical data to diagnose disease. They solve medical mysteries through hands-on projects and labs, measure and interpret vital signs, examine nervous system structure and function, investigate disease outbreaks, and explore how a breakdown within the human body can lead to dysfunction.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Gateway: Science of Technology

Course Number: TY26
Recommended Maximum Enrollment: 25
Hours of Instruction: 45
Prerequisite: None
Aligned Career Technical Student Organization: Technology Student Association (TSA)
Aligned Industry Credential: None
Description: Science impacts the technology of yesterday, today, and the future. Students apply the concepts of physics, chemistry, and nanotechnology to activities and projects, including making ice cream, cleaning up an oil spill, and discovering the properties of nanomaterials.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

PLTW Introduction to Engineering Design

Course Number: TP11

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

PLTW Principles of Engineering

Course Number: TP12

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Project Management I

Course Number: CS11

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

Project Management II

Course Number: CS12

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

Public Safety I

Course Number: IP11

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: National Incident Management System
Law and Public Safety Introductory Competency

Description: This course provides basic career information in public safety including corrections, emergency and fire management, security and protection, law enforcement, and legal services. FEMA certifications NIMS 100,200, 700, 800 are also a part of this course. Additionally, students will develop a personal plan for a career in public safety. The course includes skills in each area, using resources from the community to help deliver instruction to the students. English language arts are reinforced.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Public Safety II

Course Number: IP12

Recommended Maximum Enrollment: 25

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

Prerequisite: IP11 Public Safety I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: Community Emergency Response Team (CERT)
NECI 911 Basic Communications

Description: This course provides a deeper level of understanding of career information in public safety by focusing on the Community Emergency Response Team (C.E.R.T.) Certification. CERT is a Federal Emergency Management Administration (FEMA) developed certification that incorporates all areas of public safety. Additionally, FEMA ICS300 Intermediate Incident Command System is covered in this course.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Solar Photovoltaics I

Course Number: IC71

Recommended Maximum Enrollment: 20

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

Prerequisite: IC00 Construction Core

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - Solar Photovoltaics I

Description: This course is designed for students to develop solar photovoltaics terminology skills and technical aspects of the solar photovoltaics industry with emphasis on the development of introductory skills to include the introduction to solar photovoltaics, site assessment, and system design. "Sustainable Construction Supervisor" is also included in the course as a supplemental module. English language arts and mathematics are reinforced.

*Due to potentially hazardous processes and equipment, a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Solar Photovoltaics II

Course Number: IC72

Recommended Maximum Enrollment: 20

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

Prerequisite: IC00 Construction Core

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER - Solar Photovoltaics II

Description: This course is designed for students to further develop skills mastered in Solar Photovoltaics I and provide an emphasis on photovoltaics system installation, inspection, maintenance, and troubleshooting. “Weatherization” is also included in the course as a supplemental module. English language arts and mathematics are reinforced.

*Due to potentially hazardous processes and equipment, a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Fundamentals of Aerospace Technology

Course Number: TV16

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: This project-based learning course engages students who are curious about aviation and aerospace careers. Th is 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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Advanced Aerospace Technology

Course Number: TV17

Recommended Maximum Enrollment: 25

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

Prerequisite: TV16 SREB AC Fundamentals of Aerospace Technology

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

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Advanced Technology for Design and Production

Course Number: TR11

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: 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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Aeronautics Engineering Applications

Course Number: TV18

Recommended Maximum Enrollment: 25

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

Prerequisite: TV17 SREB AC Advanced Aerospace Technology

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

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Astronautics Engineering Applications

Course Number: TV19

Recommended Maximum Enrollment: 25

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

Prerequisite: TV18 SREB AC Aeronautics Engineering Applications

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

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC IST Nature of Science and Technology

Course Number: TR15

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: 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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC IST: Core Applications of Science and Technology

Course Number: TR16

Recommended Maximum Enrollment: 25

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

Prerequisite: TR15 SREB AC IST Nature of Science and Technology

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

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC IST: Impacts of Science and Technology

Course Number: TR17

Recommended Maximum Enrollment: 25

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

Prerequisite: TR16 SREB AC IST: Core Applications of Science and Technology

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

Aligned Industry Credential: None

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC IST: Creativity and Innovations

Course Number: TR18

Recommended Maximum Enrollment: 25

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

Prerequisite: TR17 SREB AC IST: Impacts of Science and Technology

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

Aligned Industry Credential: NI Certified LabVIEW Associate Developer (CLAD)

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

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Introduction to Automated Materials Joining

Course Number: IM71

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: 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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Applications in Automated Materials Joining

Course Number: IM72

Recommended Maximum Enrollment: 25

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

Prerequisite: IM71 SREB AC Introduction to Automated Materials Joining

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Advanced Concepts in Materials Joining

Course Number: IM73

Recommended Maximum Enrollment: 25

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

Prerequisite: IM72 SREB AC Applications in Automated Materials Joining

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Projects in Automated Materials Joining

Course Number: IM74

Recommended Maximum Enrollment: 25

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

Prerequisite: IM72 SREB AC Advanced Concepts in Materials Joining

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NI Certified LabVIEW Associate Developer (CLAD)

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Energy and Power Foundations

Course Number: TV21

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: 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 maintainprocesses 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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Energy Transmission and Distribution

Course Number: TV22

Recommended Maximum Enrollment: 25

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

Prerequisite: TV21 SREB AC Energy and Power Foundations

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

Aligned Industry Credential: None

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 travelsalong 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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Electronics and Control Systems

Course Number: TV23

Recommended Maximum Enrollment: 25

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

Prerequisite: TV22 SREB AC Energy Transmission and Distribution

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

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Advanced Science and Engineered Systems

Course Number: TV24

Recommended Maximum Enrollment: 25

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

Prerequisite: TV23 SREB AC Electronics and Control Systems

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

Aligned Industry Credential: NI Certified LabVIEW Associate Developer (CLAD)

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Clean Energy Technology I – Clean Energy Systems

Course Number: TV11

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: 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 thevarious forms of clean energy.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Clean Energy Technology II – Clean Energy Applications

Course Number: TV12

Recommended Maximum Enrollment: 25

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

Prerequisite: TV11 SREB AC Clean Energy Technology I – Clean Energy Systems

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

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Clean Energy Technology III – Clean Energy Strategies

Course Number: TV13

Recommended Maximum Enrollment: 25

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

Prerequisite: TV12 SREB AC Clean Energy Technology II – Clean Energy Applications

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

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Clean Energy Innovations

Course Number: TV14

Recommended Maximum Enrollment: 25

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

Prerequisite: TV13 SREB AC Clean Energy Technology III – Clean Energy Strategies

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

Aligned Industry Credential: NI Certified LabVIEW Associate Developer (CLAD)

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Systems of Advanced Technology

Course Number: TR12

Recommended Maximum Enrollment: 25

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

Prerequisite: SREB AC Advanced Technology for Design and Production

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

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Mechatronic Systems for Advanced Technology

Course Number: TR13

Recommended Maximum Enrollment: 25

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

Prerequisite: TR12 SREB AC Systems of Advanced Technology

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

Aligned Industry Credential: None.

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	No
Business and Industry Field Trip	No		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Design for the Production of Advanced Products

Course Number: TR14

Recommended Maximum Enrollment: 25

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

Prerequisite: SREB AC Mechatronic Systems for Advanced Production

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

Aligned Industry Credential: NI Certified LabVIEW Associate Developer (CLAD)

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Introduction to Logistics

Course Number: IK41

Recommended Maximum Enrollment: 25

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

Prerequisite: None

Aligned Career Technical Student Organization: An Association for Marketing Education Students (DECA), SkillsUSA

Aligned Industry Credential: 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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Functional Areas in Logistics

Course Number: IK42

Recommended Maximum Enrollment: 25

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

Prerequisite: IK41 SREB AC Introduction to Logistics

Aligned Career Technical Student Organization: An Association for Marketing Education Students (DECA), SkillsUSA

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Global Logistics Management

Course Number: IK43

Recommended Maximum Enrollment: 25

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

Prerequisite: IK42 SREB AC Functional Areas in Logistics

Aligned Career Technical Student Organization: An Association for Marketing Education Students (DECA), SkillsUSA

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

SREB AC Logistics and Supply Chain Management

Course Number: IK44

Recommended Maximum Enrollment: 25

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

Prerequisite: IK43 SREB AC Global Logistics Management

Aligned Career Technical Student Organization: An Association for Marketing Education Students (DECA), SkillsUSA

Aligned Industry Credential: None

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.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Technological Design

Course Number: TE12

Recommended Maximum Enrollment: 25

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

Prerequisite: TE11 Technology Engineering and Design

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

Aligned Industry Credential: None

Description: This course continues to apply the skills, concepts, and principles of design. The design fields of graphics, industrial design, and architecture receive major emphasis. Engineering content and professional practices are presented through practical application. Working in design teams, student apply technology, science, and mathematics concepts and skills to solve engineering and design problems. Students research, develop, test, and analyze engineering designs using criteria such as design effectiveness, public safety, human factors, and ethics. Art, English, Language Arts, Mathematics,and science are required.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Technology Engineering and Design

Course Number: TE11

Recommended Maximum Enrollment: 25

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

Prerequisite: None

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

Aligned Industry Credential: None

Description: This course prepares students to understand and apply technological concepts and processes that are the cornerstone for the high school technology program. Group and individual activitiesengage students in creating ideas, developing innovations, and engineering practical solutions. Technology content, resources, and laboratory/classroom activities apply student applications of science, mathematics, and other school subjects in authentic situations. This course focuses on the three dimensions of technological literacy knowledge, ways of thinking and acting, and capabilities with the goalof students developing the characteristics of technologically literate citizens. It employs teaching/learning strategies that enable students to explore and deepen their understanding of "big ideas" regarding technology and makes use of a variety of assessment instruments to reveal the extent of understanding.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	No		**Mentorship**	Yes
Cooperative Education	No		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Welding Technology I

Course Number: IM61

Recommended Maximum Enrollment: 20*

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: AWS SENSE Entry Welder Program - Thermal Cutting Process
OSHA10-Hour Construction Industry Certification
S/P2 - Welding Safety and Pollution Prevention

Description: This course covers basic industrial and construction welding practices, characteristics, and entry level skills. Topics include safety, tools and equipment, measurement, thermal cutting processes, base metal preparation and shielded metal arc welding (SMAW). Mathematics and science are reinforced.
* Per AWS, the trainee/instructor ratio for each course should be kept as low as possible. A reasonable figure would be fifteen (15) welding trainees to one (1) welding instructor. However, this ratio should never exceed the number of workstations in the laboratory. Twenty (20) welding personnel to one (1) instructor would be the maximum recommended acceptable ratio.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	No		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	No
Cooperative Education	No		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	No		****Work-based Learning descriptions can be found on page 3.**	

Welding Technology II

Course Number: IM62

Recommended Maximum Enrollment: 20*

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

Prerequisite: IM61 Welding Technology I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: AWS SENSE Entry Welding Program - Shielded Metal Arc Welding (SMAW)
Certified Welder per Welding Code AWS D1.1 (SMAW)

Description: This course introduces advanced welding and cutting practices used in industry and construction and emphasizes hands-on experience. Topics include safety, inspection, weld fit-up and testing, metal properties, and shielded metal (SMAW) arc welding. Mathematics and science are reinforced.
* Per AWS, the trainee/instructor ratio for each course should be kept as low as possible. A reasonable figure would be fifteen (15) welding trainees to one (1) welding instructor. However, this ratio should never exceed the number of workstations in the laboratory. Twenty (20) welding personnel to one (1) instructor would be the maximum recommended acceptable ratio.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Welding Technology III

Course Number: IM63

Recommended Maximum Enrollment: 20*

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

Prerequisite: IM62 Welding Technology II

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: AWS SENSE Entry Level Welder Program Gas Metal Arc Welding (GMAW)
AWS SENSE Entry Level Welder Program- Flux Cored Arc Welding (FCAW)
Certified Welder per Welding Code AWS D1.1 (GMAW)
Certified Welder per Welding Code AWS D1.1 (FCAW)

Description: This course is designed to continue the development of advanced welding and cutting practices used in industry and construction and emphasizes hands-on experience. Further emphasis is placed on topics covered in Welding Technology II, and more, such as safety, weld fit-up and testing, metal properties, gas metal arc welding (GMAW), and flux cored arc welding (FCAW. Mathematics and science are reinforced.

* Per AWS, the trainee/instructor ratio for each course should be kept as low as possible. A reasonable figure would be fifteen (15) welding trainees to one (1) welding instructor. However, this ratio should never exceed the number of workstations in the laboratory. Twenty (20) welding personnel to one (1) instructor would be the maximum recommended acceptable ratio.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	Yes		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Woodworking I

Course Number: IM21

Recommended Maximum Enrollment: 20*

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

Prerequisite: None

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: OSHA 10-Hour Construction Industry Certification

Description: This course introduces career information, employment opportunities, and skills required for work in the woodworking and cabinetmaking industry. Topics include the woodworking industries, health, and safety design and layout, materials, hand tools, power tools, portable and stationary, preparation, construction and assembly, and finishing. English language arts and mathematics are reinforced.

* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Woodworking II

Course Number: IM22

Recommended Maximum Enrollment: 20*

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

Prerequisite: IM21 Woodworking I

Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: Woodwork Career Alliance (WCA) Sawblade Certificate
OSHA 10-Hour Construction Industry Certification

Description: The course teaches the development of knowledge and advance skills in the woodworking and cabinetmaking industry. Emphasis is placed on advanced principles applied to the woodworking and cabinetmaking industry. Topics include advanced levels of the cabinetmaking industry, health and safety, design and layout, materials, hand tools, power tools, portable and stationary, preparation, construction and assembly, and finishing. English language arts and mathematics are reinforced.
* Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	Yes
Entrepreneurial Experiences	No		**Service Learning**	No
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

CTE Advanced Studies

Course Number: WB05 (ARCH), WB45 (LAW), WB49 (MANU), WB57 (STEM), WB61 (TRAN)

Recommended Maximum Enrollment: 25

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This culminating course is for juniors and seniors who have earned two technical credits, one of which is a completer course, in one Career Pathway. The Advanced Studies course must augment the content of the completer course and prepare students for success in transitioning to postsecondary education and future careers. Students work under the guidance of a teacher with expertise in the content of the completer course in collaboration with community members, business representatives, and other school-based personnel. The four parts of the course include writing a research paper, producing a product, developing a portfolio, and delivering a presentation. Students demonstrate their abilities to use 21st century skills. Competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace readiness skills through authentic experiences.

CTE Apprenticeship

Course Number: WB06 (ARCH), WB46 (LAW), WB50 (MANU), WB58 (STEM), WB62 (TRAN)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: Students who participate in apprenticeships or pre-apprenticeships through Apprenticeship NC and the North CarolinaDepartment of Labor can also earn CTE credit while they earn hours and experience toward an adult apprenticeship leading to a completed journeyman certificate.

CTE Career and College Promise

Course Number: Various

Recommended Maximum Enrollment: Varies

Hours of Instruction: Does not apply

Prerequisite: None

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

Aligned Industry Credential: None

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

CTE Entrepreneurial Experience

Course Number: WB08 (ARCH), WB48 (LAW), WB52 (MANU), WB60 (STEM), WB64 (TRAN)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: This course involves students developing knowledge and proficiency in running a business. Students gain work-place skills, develop an understanding of how to manage a business, and are responsible for all risks.

CTE Internship

Course Number: WB07 (ARCH), WB47 (LAW), WB51 (MANU), WB59 (STEM), WB63 (TRAN)

Recommended Maximum Enrollment: 20

Hours of Instruction: 120 minimum

Prerequisite: Two technical credits in one Career Pathway

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

Aligned Industry Credential: None

Description: A CTE Internship allows for additional development of career and technical competencies within a general career field. Internships allow students to observe and participate in daily operations, develop direct contact with job personnel, ask questions about particular careers, and perform certain job tasks. This activity is exploratory and allows the student to get hands-on experience in a number of related activities. The teacher, student, and the business community jointly plan the organization, implementation, and evaluation of an internship, regardless of whether it is an unpaid or paid internship.

APPENDIX A. LOCAL COURSE OPTIONS

LOCAL COURSE OPTIONS

If a Public School Unit (PSU) recognizes needs that are not addressed by courses in this document, that PSU can request authorization to offer a Local Course Option (LCO). A Local Course Option requires considerable advanced planning and preparation. Each local course must be approved before it is advertised and offered to students.

A Local Course Option should be used to:

- provide for innovation, but not duplication, of courses in the Course Inventory and Essential Standards.
- 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.

The request must be made and approved before the Local Course Option can be advertised and offered. Please consult the appropriate CTE Regional Coordinator for more information.

APPENDIX B. DEFINITIONS USED IN THIS DOCUMENT

Career Clusters™ are groupings of occupations used as an organizing tool for curriculum design and instruction. The Career Cluster approach makes it easier for students to understand the relevance of their required courses and helps them select their elective courses more wisely.

Career Pathway Major is one that provides aligned specificity in a Career Pathway and can include either an Advanced Studies course, Work-based Learning course, or a course with aligned content.

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

Certification is industry recognition or confirmation of subject knowledge or the ability to perform specific tasks. The focus is on assessing the attainment of current experience, knowledge, and skill base.

Foundational prerequisite provides fundamental knowledge and skills needed for student success in secondary and postsecondary education and careers in the Career Pathway.

Concentrator is a student who has successfully completed a Concentrator course in an approved Career Pathway.

Concentrator course is a second- or third-level course in the Career Pathway (CPPOS) that builds upon technical skills acquired in a prerequisite course.

Credential provides evidence of authority, status, rights, and entitlement to privileges. Typically, a credential is a paper document.

Curriculum partnering opportunities are developed by national organizations, foundations, consortia, industry, and other curriculum providers. Partnering opportunities are approved by the Division of Career and Technical Education. To be approvable, curriculum partnering opportunities must include a valid and reliable measure of technical attainment that meets the state timeline for federal reporting.

Field test course is complete with all components. The primary intent of the field test year is to collect reliability data on all assessment items before the items are divided into the classroom and secure assessment banks. A secondary intent of the field test year is to collect feedback from teachers about the blueprint weighting, unpacked content, and instructional activities and resources used in the course.

License is permission from a government authority to perform certain tasks.

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

Pilot course is used to test and evaluate student interest and feasibility of a new course before full-scale development and implementation of all course components. During the pilot course year, adjustments will be made to improve or enhance course materials. At some designated point, a decision will be made whether or not to continue or terminate the development of the course.

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