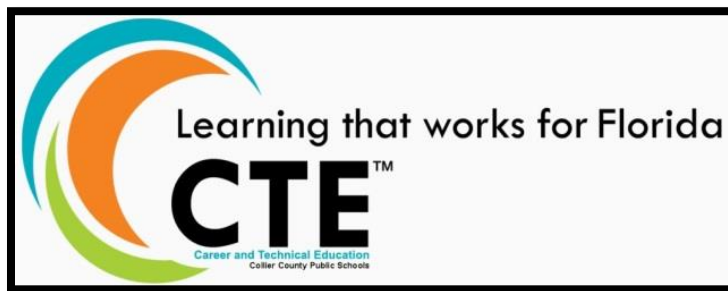
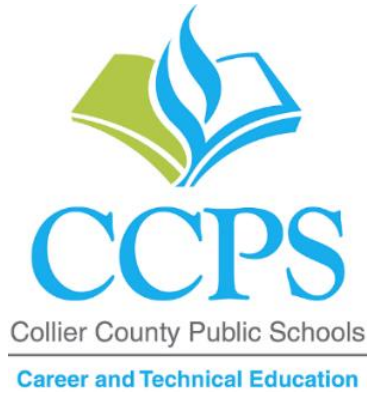


Career and Technical Education

Information Guide



2024-2025



www.collierschools.com

Dr. Leslie Ricciardelli
Superintendent of Schools

THE DISTRICT SCHOOL BOARD OF COLLIER COUNTY

Kelly Mason, Chair
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This report has been prepared by The District School Board of Collier County.
Additional copies, if available, may be obtained by writing:

The District School Board of Collier County
Dr. Martin Luther King, Jr. Administrative Center
5775 Osceola Trail
Naples, Florida 34109-0919

MISSION STATEMENT

CCPS will develop students' intellectual capacity and confidence in order to be successful lifelong learners with strong moral character who strive to reach their potential as productive members of American culture.

VISION STATEMENT

Inspire students to achieve academic excellence.

Annual Notice of Nondiscrimination for CTE Programs

The District School Board of Collier County offers the following career and technical programs to high school students wherein they may earn industry certification:

Aubrey Rogers High School: Accounting Applications, Biomedical Sciences, Computer Science Principles, Crime Scene Technology, Engineering Pathways, Entrepreneurship, Finance, Television Production Technology

Barron Collier High School: Biomedical Sciences, Computer Science Principles, Database Application and Programming, Digital Design, Engineering Pathways, Entrepreneurship, Marketing, Management and Entrepreneurial Principles, Television Production Technology

Everglades City School: Aquaculture, Culinary Arts

Golden Gate High School: Accounting Applications, Biomedical Sciences, Culinary Arts, Digital Design, Engineering Pathways, Entrepreneurship, Exercise Science, Finance, Medical Skills and Services, Television Production Technology

Gulf Coast High School: Applied Information Technology, Computer Science Principles, Culinary Arts, Database Application Development and Programming, Digital Design, Engineering Pathways, Entrepreneurship, Finance, Marketing, Management and Entrepreneurial Skills, Television Production Technology

Immokalee High School: Accounting Applications, Advanced Technology Applications, Aerospace Technologies, Applied Information Technology, Biomedical Sciences, Building, Trades and Construction Design Technology, Crime Scene Technology, Criminal Justice Operations, Digital Design, Engineering Pathways, Entrepreneurship, Finance, Journalism and Multimedia, Public Safety Telecommunication, Workplace Essentials, Workplace Applications

Lely High School: Accounting Applications, Aerospace Technologies, Applied Information Technology, Computer Science Principles, Criminal Justice Operations, Digital Design, Digital Media/Multimedia Design, Engineering Pathways, Entrepreneurship, Exercise Science, Finance, Public Safety Telecommunication, Television Production Technology, Workplace Technology Applications

Lorenzo Walker High School: Accounting Applications, Hospitality and Tourism Management, Workplace Essentials, Workplace Technology Applications

Naples High School: Biomedical Sciences, Computer Science Principles, Database Application Development and Programming, Digital Design, Early Childhood Education, Engineering Pathways, Entrepreneurship, Principles of Teaching, Television Production Technology

Palmetto Ridge High School: Building, Trades and Construction Design Technology, Computer Science Principles, Culinary Arts, Database Application Development and Programming, Digital Design, Digital Media/Multimedia Design, Early Childhood Education, Engineering Pathways, Entrepreneurship, Exercise Science, Medical Skills and Services, Television Production Technology, Workplace Essentials, Workplace Technology Applications

Career and technical programs are open to all students in the district.

The District School Board of Collier County does not discriminate on the basis of race, color, religion, national origin, sex (including sexual orientation and/or gender identity), disability, or age in the provision of educational opportunities or employment opportunities and benefits. The District School Board does not discriminate on the basis of sex or disability in the education programs and activities that it operates, pursuant to the requirements of Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, respectively. The right not to be discriminated against extends to both employees and students of the District and shall include equal access to designated youth organizations in conformity with the Boy Scouts of America Equal Access Act. The lack of English language skills would not be a barrier to participation in CTE programs, whether at the District's technical colleges or at its secondary schools. The following personnel should be contacted for inquiries about their rights or to learn how to file a complaint regarding discrimination.

Employees: For matters involving Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, Age Discrimination in Employment Act, Title VII, and Florida's Educational Equity Act, contact Ms. Valerie Wenrich, Chief Human Resource Officer, Human Resources, at (239) 377-0351, or at 5775 Osceola Trail, Naples, Florida 34109.

Students: For matters involving (a) Florida's Education Act and Federal Title VI (race, religion, national origin issues), contact Ms. Rhoderica Washington, Director, Teaching and Learning at (239) 377-0100, or at 5775 Osceola Trail, Naples, Florida 34109; and (b) Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, contact Ms. Jana Csenger, Coordinator of Psychological Services, at (239) 377-0521, or at 5775 Osceola Trail, Naples, Florida, 34109.

Title IX: For all Title IX related matters, whether involving employees and/or students, contact Ms. Valerie Wenrich, the District's Title IX Coordinator and Chief Human Resource Officer, Human Resources, at (239) 377-0351, or at 5775 Osceola Trail, Naples, Florida 34109.

For more information regarding career and technical education programs, please [click here](#).

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Collier County Career and Technical Education

Education is a function of both knowledge and the application of knowledge. Education that ties abstract ideas to practical applications also prepares students to use their minds, as well as preparing them to be citizens, parents, and members of a civilized culture. Career and Technical education and academic education are complementary rather than exclusive.

Career and technical education will provide experiences that complement and reinforce academic concepts that are particularly amenable to contextualized learning in distinct career areas and provide occupationally specific skills. The district offers career and technical programs that include but are not limited to:

- Job preparatory course designed to provide students with the competencies necessary for effective entry into an occupation
- Exploratory courses designed to give students initial exposure to skills and attitudes associated with a broad range of occupations in order to assist them in making informed decision regarding their future academic and occupational goals;
- Practical art courses are designed to teach students practical generic skills which, although applicable in some occupations, are not designed to prepare students for entry into an occupation;
- Career education instruction which is designed to strengthen and integrate basic academic skills and career/technical skills and occupational awareness;
- Accelerated career and technical programs such as career dual enrollment designed to enable high school students to earn elective credit toward graduation and postsecondary credit toward an A.S. degree or a technical certificate.

Any effort to recruit students to participate in a particular career and technical program shall follow applicable State and Federal laws regarding provision of information.

Career and technical education program offerings are available to middle and high school students without regard to race, color, national origin, sex, age, or disability. All programs and application forms for programs will contain a notice of nondiscrimination. The notice of nondiscrimination shall be part of the application forms provided to employers.

Procedures for program operation are in accordance with applicable labor laws are incorporated in the Florida Department of Education, Curriculum Frameworks, and Student Performance Standards.

How do Career and Technical Education courses count toward high school graduation?

Career and technical education courses can count in a variety of ways toward high school graduation. Most CTE courses are elective credits and fulfill that requirement for graduation. However, many CTE courses may also replace science credit toward graduation. These courses include Biomedical Science, Health Science, Agricultural Science, and Aerospace Technology programs. Many CTE courses count as Practical Arts courses and may be used to meet that requirement for graduation. Some CTE courses that include Information Technology Certifications may also meet the on-line course requirements toward graduation.

Selected industry certifications may also be used as either math or science credits toward high school graduation. These certifications are included in later sections of this guide under industry certifications.

Career and Professional Academies; Career-Themed Courses

The District offers career and professional academies and career-themed courses at the middle and high school levels. A “career and professional academy” is a research-based program that integrates a rigorous academic curriculum with an industry-specific curriculum aligned directly to priority workforce needs established by the regional workforce board or the Department of Economic Opportunity. Students completing career and professional academy programs must receive a standard high school diploma, the highest available industry certification, and opportunities to earn postsecondary credit if the academy partners with a postsecondary institution approved to operate in the state.

A “career-themed course” is a course, or a course in a series of courses, that leads to an industry certification identified in the Industry Certification Funding List pursuant to rules adopted by the State Board of Education. Career-themed courses have industry-specific curriculum aligned directly to priority workforce needs established by the regional workforce board or the Department of Economic Opportunity. Students completing a career-themed course will be provided opportunities to earn postsecondary credit if the credit for the career-themed course can be articulated to a postsecondary institution approved to operate in the state.

Each of the career and professional academies offered in the District's high schools provide rigorous and relevant career-themed courses that articulate to postsecondary-level coursework and provide students with the opportunity to receive a standard high school diploma, the opportunity to earn industry certification, the opportunity to attain the Florida Gold Seal Vocational Scholars award, and the opportunity to earn postsecondary credit.

Students who successfully complete the curriculum of the Career and Professional Academies that are established at the middle school level will have the opportunity to earn an industry certificate, high school credit, and participate in career planning, job shadowing, and business leadership development activities.

The District has forged partnerships with local businesses in the development of career and professional academies. These partnerships will help prepare students for the State's workforce needs, as well as help attract, expand, and retain targeted, high-value industry and jobs in the community.

The District's career and professional academies should increase student academic achievement and graduation rates through integrated academic and career curriculum. Each middle school career exploration program, middle and high school career and professional academies leading to industry certification, and high school graduation requirements are aligned.

Each career and professional academy and career-themed course at the high school level must:

- provide a rigorous standards-based academic curriculum integrated with a career curriculum; consider multiple styles of student learning; promote learning by doing through application and adaptation; maximize relevance of the subject matter; enhance each student's capacity to excel; and include an emphasis on work habits and work ethics;
- include one or more partnerships with postsecondary institutions, businesses, industry, employers, economic development organizations, or other appropriate partners from the local community. Such partnerships with postsecondary institutions shall be delineated in articulation agreements and include any career and professional academy courses or career-themed courses that earn postsecondary credit. Such agreements may include articulation between the secondary school and public or private two (2) year and four (4) year postsecondary institutions and technical centers. Such partnerships must provide opportunities for:
 - instruction from highly skilled professionals who possess industry-certification credentials for courses they are teaching;
 - internships, externships, and on-the-job training;
 - a postsecondary degree, diploma, or certificate;
 - the highest available level of industry certification;
 - maximum articulation of credits pursuant to F.S. 1007.23 upon program completion;
- promote and provide opportunities for students enrolled in a career and professional academy or a career-themed course to attain, at minimum, the Florida Gold Seal Vocational Scholars award pursuant to F.S. 1009.536;
- provide instruction in careers designated as high-skill, high-wage, and high-demand by the regional workforce development board, the chamber of commerce, economic development agencies, or the Department of Economic Opportunity;
- deliver academic content through instruction relevant to the career, including intensive reading and mathematics intervention required by F.S. 1003.428, with an emphasis on strengthening reading for information skills;
- offer applied courses that combine academic content with technical skills; and
- provide instruction resulting in competency, certification, or credentials in workplace skills, including, but not limited to, communication skills, interpersonal skills, decision-making skills, the importance of attendance and timeliness in the work environment, and work ethics.

Each career and professional academy at the middle school level must:

- Lead to careers in occupations designated as high-skill, high-wage, and high-demand in the Industry Certification Funding List approved under rules adopted by the State Board of Education.
- Integrate content from core subject areas.
- Integrate career and professional academy or career-themed course content with intensive reading and mathematics pursuant to F.S. 1003.428.
- Coordinate with high schools to maximize opportunities for middle school students to earn high school credit.
- Provide access to virtual instruction courses provided by virtual education providers legislatively authorized to provide part-time instruction to middle school students. The virtual instruction courses must be aligned to State curriculum standards for middle school career and professional academy courses or career-themed courses, with priority given to students who

have required course deficits.

- Provide instruction from highly skilled professionals who hold industry certificates in the career area in which they teach.
- Offer externships.
- Provide personalized student advisement that includes a parent-participation component.

Industry Certification in Industry Certified Career Education Programs

Secondary schools offering career-themed course and career and professional academies will enable students to earn industry certification in an industry that is:

- within an industry that addresses a critical local or Stateside economic need;
- linked to an occupation that is included in the workforce system’s targeted occupation list; or
- linked to an occupation that is identified as emerging.

To earn industry certification, the student must demonstrate the required proficiency on an assessment evaluated by an independent, third part certifying entity using predetermined standards for knowledge, skills, and competencies.

High School CTE Programs and Academy Directory (with Certifications offered)

School	Collier Career Academy Pathway	CTE Program	Potential Industry Certification or Technical Skill Attainments
Aubrey Rogers High School	Arts & Technology Academy	Computer Science Principles Television Production Technology	Information Technology Specialist Entrepreneurship and Small Business Project Management Institute Social Media Strategist
	Business Academy	Finance & Entrepreneurship	QuickBooks Certified User Entrepreneurship and Small Business Project Management Institute Social Media Strategist
	Engineering & Trades Academy	Engineering Pathways	Autodesk Certified User Engineering Core Certification Entrepreneurship and Small Business Project Management Institute
	Health Sciences Academy	Biomedical Sciences	Biotechnician Assistant Credentialing Exam Project Management Ready
	Law & Public Safety Academy	Crime Scene Technology	
Barron Collier High School	Arts & Technology Academy	Computer Science Principles Digital Design Television Production Technology	Adobe Certified Professional Entrepreneurship and Small Business Project Management Institute Autodesk Certified User Information Technology Specialist Social Media Strategist
	Business Academy	Finance & Entrepreneurship Marketing, Management and Entrepreneurial Principles	QuickBooks Certified User Entrepreneurship and Small Business Project Management Institute Social Media Strategist
	Engineering & Trades Academy	Engineering Pathways	Autodesk Certified User Engineering Core Certification Entrepreneurship and Small Business Project Management Institute
	Health Sciences Academy	Biomedical Sciences	Biotechnician Assistant Credentialing Exam Project Management Ready

Everglades City School		Agriscience	Agritechnology Certification Entrepreneurship and Small Business
		Culinary Arts	ServSafe Food Manager Entrepreneurship and Small Business
Golden Gate High School	Arts & Technology Academy	Television Production Technology	Adobe Certified Professional Entrepreneurship and Small Business Project Management Institute Autodesk Certified User Social Media Strategist
	Business Academy	Culinary Arts Finance & Entrepreneurship	QuickBooks Certified User Entrepreneurship and Small Business Project Management Institute Social Media Strategist
	Engineering & Trades Academy	Engineering Pathways	Autodesk Certified User Engineering Core Certification Entrepreneurship and Small Business Project Management Institute
	Health Sciences Academy	Exercise Science	Certified Medical Administrative Assistant Certified Patient Care Technician Certified Personal Trainer Entrepreneurship and Small Business
Gulf Coast High School	Arts & Technology Academy	Computer Science Principles	Information Technology Specialist Entrepreneurship and Small Business Project Management Institute
	Business Academy	Culinary Arts Marketing, Management and Entrepreneurial Principles	QuickBooks Certified User Entrepreneurship and Small Business Project Management Institute Social Media Specialist ServSafe Food Manager
	Engineering & Trades Academy	Engineering Pathways	Autodesk Certified User Engineering Core Certification Entrepreneurship and Small Business Project Management Institute
	Health Sciences Academy	Biomedical Sciences	Biotechnician Assistant Credentialing Exam Project Management Ready
		Digital Design	Adobe Certified Professional Entrepreneurship and Small Business Project Management Institute Autodesk Certified User Social Media Strategist
		Television Production Technology	Adobe Certified Professional Entrepreneurship and Small Business Project Management Institute Autodesk Certified User Social Media Strategist
Immokalee High School	Business Academy	Finance & Entrepreneurship	QuickBooks Certified User Entrepreneurship and Small Business Project Management Institute Social Media Specialist
	Engineering & Trades Academy	Applied Robotics Aviation Building, Trades and Construction Technologies	Autodesk Certified User Engineering Core Certification Entrepreneurship and Small Business Project Management Institute

		Engineering Pathways	FAA Private Pilot Small UAS Safety Certification
	Health Sciences Academy	Biomedical Sciences	Biotechnician Assistant Credentialing Exam Project Management Ready
	Law & Public Safety Academy	Crime Scene Technology Public Safety Telecommunication	911 Public Safety Telecommunicator Entrepreneurship and Small Business
		Journalism and Multimedia	Adobe Certified Professional Entrepreneurship and Small Business Project Management Institute Social Media Strategist
		Workplace Essentials	Information Technology Specialist Entrepreneurship and Small Business Project Management Institute Social Media Strategist
		Workplace Technology Applications	Information Technology Specialist Entrepreneurship and Small Business Project Management Institute Social Media Strategist
Lely High School	Arts & Technology Academy	Digital Design Digital Media & Multimedia Design Television Production Technology	Adobe Certified Professional Information Technology Specialist Entrepreneurship and Small Business Project Management Institute Social Media Strategist
	Business Academy	Finance & Entrepreneurship	QuickBooks Certified User Entrepreneurship and Small Business Project Management Institute Social Media Strategist
	Engineering & Trades Academy	Aviation Engineering Pathways	Autodesk Certified User Engineering Core Certification Entrepreneurship and Small Business Project Management Institute FAA Private Pilot License FAA Ground School Small UAS Safety Certification
	Health Sciences Academy	Exercise Science	Certified Medical Administrative Assistant Certified Patient Care Technician Certified Personal Trainer Entrepreneurship and Small Business
	Law & Public Safety Academy	Criminal Justice Operations Public Safety Telecommunication	911 Public Safety Telecommunicator NOCTI Criminal Justice Public Security Aide Certification Accredited Legal Professional
		Workplace Technology Applications	Information Technology Specialist Entrepreneurship and Small Business Project Management Institute Social Media Strategist
Lorenzo Walker High School (For Lorenzo)		Accounting Applications	QuickBooks Certified User Entrepreneurship and Small Business Project Management Institute Social Media Strategist
		Hospitality and Tourism Management	ServSafe Food Manager Entrepreneurship and Small Business

		Workplace Essentials	Information Technology Specialist Entrepreneurship and Small Business Project Management Institute Social Media Strategist
		Workplace Technology Applications	Information Technology Specialist Entrepreneurship and Small Business Project Management Institute Social Media Strategist
Naples High School	Arts & Technology Academy	Digital Design Television Production Technology	Adobe Certified Professional Information Technology Specialist Entrepreneurship and Small Business Project Management Institute Social Media Strategist
	Engineering & Trades Academy	Engineering Pathways	Autodesk Certified User Engineering Core Certification Entrepreneurship and Small Business Project Management Institute
	Health Sciences Academy	Biomedical Sciences	Biotechnician Assistant Credentialing Exam Project Management Ready
		Entrepreneurship	QuickBooks Certified User Entrepreneurship and Small Business Project Management Institute Social Media Strategist
Palmetto Ridge High School	Arts & Technology Academy	Digital Design Digital Media/Multimedia Design	Adobe Certified Professional Information Technology Specialist Entrepreneurship and Small Business Project Management Institute Social Media Strategist
	Business Academy	Culinary Arts Finance & Entrepreneurship	ServSafe Food Manager Entrepreneurship and Small Business QuickBooks Certified User Entrepreneurship and Small Business Project Management Institute
	Education Academy	Early Childhood Education	Child Development Associate Entrepreneurship and Small Business
	Engineering & Trades Academy	Building Trades and Construction Design Technology	NCCER Carpentry Level 1 Entrepreneurship and Small Business Project Management Institute
	Health Sciences Academy	Exercise Science	Certified Medical Administrative Assistant Certified Patient Care Technician Certified Personal Trainer Entrepreneurship and Small Business
		Computer Science Principles	Information Technology Specialist Entrepreneurship and Small Business Project Management Institute
		Workplace Essentials	Information Technology Specialist Entrepreneurship and Small Business Project Management Institute Social Media Strategist
		Workplace Technology Applications	Information Technology Specialist Entrepreneurship and Small Business Project Management Institute Social Media Strategist

Middle School CTE Programs

Each middle school offers a variety of courses that are aligned with high school and post-secondary career pathways. They are designed to provide students with a foundation for success and to increase interest in a variety of career fields. Students are encouraged to explore as many options as possible during the middle school years. With Career Education in mind, Middle School CTE programs are exploratory in nature and focused on connections to career possibilities. Students may earn industry certifications, earn high school credits, and meet additional graduation requirements. Programs are available in Business and Information Technology, Engineering Technology, Health Sciences, and Hospitality and Tourism.

Middle School CTE Program Directory

School	Courses	Potential Digital Tools and Industry Certifications
East Naples Middle School Feeder(s): Lely High, Naples High	<ul style="list-style-type: none"> • Integrated/Engineering Technology (PLTW) • Business/Computer Applications • Entrepreneurship 	Digital Literacy Level 1 Digital Literacy Level 2 Digital Literacy Level 3 Computing Fundamentals Coding in Minecraft Key Applications Living Online Microsoft Office Specialist Database Essentials Gaming Essentials Multimedia Essentials Programming and Logic Essentials Web Design Essentials Communications Essentials Computing Essentials Cybersecurity Essentials Spreadsheet Essentials Word Processing Essentials Fundamentals Digital Citizenship and Ethics Entrepreneurship and Small Business Adobe Certified Professional Social Media Strategist ServSafe Food Manager
Gulfview Middle School Feeder(s): Naples High	<ul style="list-style-type: none"> • Career Orientation • Integrated/Engineering Technology (PLTW) • Entrepreneurship 	
Manatee Middle School Feeder(s): Lely High	<ul style="list-style-type: none"> • Business/Computer Applications Technology • Integrated/Engineering Technology • Entrepreneurship 	
Cypress Palm Middle Feeder(s): Palmetto Ridge High	<ul style="list-style-type: none"> • Business/Computer Applications Technology • Integrated/Engineering Technology (PLTW) • Entrepreneurship • Health Science 	
Corkscrew Middle School Feeder(s): Palmetto Ridge High	<ul style="list-style-type: none"> • Business/Computer Applications • Integrated/Engineering Technology (PLTW) • Hospitality and Tourism • Entrepreneurship 	
Oak Ridge Middle Feeder(s): Gulf Coast High	<ul style="list-style-type: none"> • Business/Computer Applications Technology • Integrated/Engineering Technology (PLTW) • Entrepreneurship 	
North Naples Middle Feeder(s): Gulf Coast High	<ul style="list-style-type: none"> • Business/Computer Applications Technology • Integrated/Engineering Technology (PLTW) • Entrepreneurship 	
Pine Ridge Middle Feeder(s): Barron Collier High	<ul style="list-style-type: none"> • Hospitality and Tourism • Business/Computer Applications Technology • Integrated/Engineering Technology (PLTW) • Entrepreneurship 	
Golden Gate Middle Feeder(s): Golden Gate High	<ul style="list-style-type: none"> • Business/Computer Applications Technology • Integrated/Engineering Technology (PLTW) • Entrepreneurship 	
Immokalee Middle School Feeder(s): Immokalee High School	<ul style="list-style-type: none"> • Business/Computer Applications Technology • Health Science • Integrated/Engineering Technology (PLTW) • Entrepreneurship 	

STEAM CTE

STEAM is not a new concept anymore. Rather, it is a foundation for education that is integral to our country's economic development. STEAM education is much more than just learning science, technology, engineering, arts, and math skills—it's all about problem solving. Problem solving requires proper communication, reading, writing, and critical-thinking skills too. The beauty of STEAM CTE is

that the academic subjects are integrated with the hands-on instructional approach in career education.

There are two STEAM workforces; one is linked to a four-year degree program that focuses on research and development. The second STEAM workforce is linked to sub-bachelor's degree programs, which include exciting and lucrative employment in manufacturing, transportation, health care, construction, and information technology. The middle skill STEAM careers draw from high school CTE programs in addition to technical centers and two-year college programs.

High school students enrolled in rigorous CTE programs possess a unique kind of intelligence. With an action-oriented outlook and a mechanical mind these students are real-world problem solvers—ready to tackle the challenge head-on with a spring in their step. Students have the opportunity to earn industry-recognized certifications that gives them an edge in securing employment as well as in earning college credit through successful completion of programs. STEAM CTE programs encourage and foster collaboration between disciplines, promoting teamwork and the use of essential technology tools imperative in the global workforce. STEAM CTE programs include:

- Aerospace/Aviation Technology
- Agriscience
- Biomedical Sciences
- Business Technology
- Computer Programming
- Digital Design/Multimedia
- Engineering
- Health Science
- Information Technology
- Transportation Technology

Career Ready Practices

Career Ready Practices describes the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline, or level of education. Career Ready Practices are included and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attending to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social, and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership, and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Why is Credentialing Important?

It is crucial, now more than ever, that each student prepares for the workforce along with the prospect of a college education simultaneously. The ever developing and changing job market united with a flexible and adaptive education system is closing the significant skills gap between employers and qualified workers. There is concern that students are not entering the workforce with adequate skills set that prepares them for success. According to a report from Georgetown University's Center on Education and the Workforce, by 2020, 65% of all jobs will require postsecondary education and training. This skill gap between education and the workforce has caused a shift toward the importance of credentialing and additional training that is more comprehensive in order to meet the needs of employers and the U.S. work industry as a whole.

Career and technical education (CTE) programs are at the front of the initiative to create students that are career ready. CTE programs provide a basis for students to acquire technical and academic skills that are necessary for successful and long-term employment. Classroom education with hands-on training prepares students for the real work they will be completing in their career fields or as they work through and continue their educations at the collegiate level. Applying concepts and skills in lab, workshop, or actual work settings provides tangible learning experiences for students to build their knowledge base. As a result, students are better able to align their educations, and subsequently their skills, with their preferred career pathways. Successful CTE programs are complemented by the opportunity for students to obtain industry recognized credentials that are beneficial for students as they build resumes and portfolios for the future. Credentials provide proof of knowledge and verify a student's capability to perform a particular trade, skill, or occupation. Credentialing opportunities bring value to CTE programs because they validate the education and training these programs provide as well as give students incentive for further achievement.

For entry-level employment, credentials are a good predictor of success and achievement for students who are seeking their first jobs, apprenticeships, or internships. Employers are able to easily identify what degree of competence potential employees possess. According to data from the Bureau of Labor Statistics, unemployment for workers ages 16 to 24 rests at nearly 12%, and with nearly 18.1 million people entering the workforce under the age of 24, students require a way to show they have the desired technical and employability skills in a competitive job market. Industry recognized credentials and other certifications are a good way for students to make them more marketable to employers who are looking to invest in long-term, qualified workers. Leaving high school with more than a high school diploma is now a valuable means toward success upon entering a career field or continuing to a two-year or four-year college or university.

CTE and Bright Futures Scholarships

Students completing CTE courses may be eligible for the State of Florida Bright Futures Scholarships. The traditional Bright Futures Gold Seal Scholarship requires that students complete at least 3 sequential CTE courses. These are identified in the course code directory. In addition, the state legislature created the Florida Gold Seal CAPE (Career and Professional Education) Scholar's award as an alternative to the current Florida Gold Seal Vocational Scholars award. High school students are eligible for a Florida Gold Seal CAPE Scholars award if they earn 5 postsecondary credit hours through CAPE industry certifications and complete at least 30 hours of volunteer service work. For information on CAPE industry certifications refer to the section of this booklet on industry certifications and college credit.

The state also clarified community service as volunteer service work for Bright Futures initial eligibility and expanded volunteer work areas to include business or governmental internship or activities on behalf of a candidate for public office. Accountability requirements are provided that includes documentation in writing by the student, the student's parent, and a representative of the organization for which the student volunteered.

High School Career and Technical Education Programs

CTE offers a variety of diverse subject areas which are constantly evolving with the changing global economy. Students who meet CTE program requirements can also earn scholarship dollars, dual enrollment, and articulated credit toward college. CTE programs are organized as Collier Career Academies, National Academy Foundation Academies, and as CTE Concentrator Programs. All programs offer at least three courses to ensure that students will meet Bright Futures Gold Seal Scholarship requirements. All CTE programs are designed to meet college entrance requirements.

The information following explains the important information that students and parents need to know as you consider a career focused program in the Collier County Public Schools.

Industry Certification and On-Line Course Waivers

<p>Online Course Requirements: A student may satisfy the on-line course requirement by earning an industry certification that is included in the Career and Professional Academy Funding. For specific certification names see https://www.fldoe.org/core/fileparse.php/8904/urlt/2223CAPECertFundList.pdf</p>	
<p>Course Codes for Industry Certification Credit Waiver- Students who have earned certifications listed below may use those certifications as two math or one science course toward graduation requirements.</p> <p>Upon successful attainment of a qualifying industry certification, students would be eligible for substitution credit in mathematics and/or science. The industry certification substitution cannot substitute for Algebra 1, Geometry or Biology, but rather toward the balance of the two other unspecified mathematics credits and one of the unspecified equally rigorous science credits required for high school graduation. It is important to note that one qualifying industry certification attainment equates to one substitution credit. A student would need to earn three distinct qualifying industry certifications to earn the maximum three substitution credits (two in mathematics and one in science).</p> <p>Note: Substituted courses may not be eligible for university admission.</p>	
<p>Industry Certification Waiver Mathematics- 1200998 and 1200999</p>	
<p>Industry Certification Waiver Science- 2000999</p>	
<ul style="list-style-type: none"> • Autodesk Certified User - AutoCAD • Autodesk Certified User - Revit Architecture • Autodesk Certified User - Fusion 360 • Autodesk Certified User – Inventor • Autodesk Certified User - Maya • Autodesk Certified Professional - AutoCAD • Autodesk Certified Professional - AutoCAD Civil 3D • Autodesk Certified Professional - Inventor • Autodesk Certified Professional - Revit Architecture • Autodesk Certified Associate in CAD for Mechanical Design • Adobe Certified Professional in Web Design • Adobe Certified Professional in Visual Design • Adobe Certified Professional in Video Design • Biotechnician Assistant Credentialing Exam • CompTIA A+ • CompTIA Linux+ • CompTIA Network+ • CompTIA Project+ • CompTIA Security+ • CompTIA Server+ • CompTIA IT Fundamentals+ • Child Development Associate (CDA) • 911 Public Safety Telecommunicator • FAA Private Pilot • FAA Ground School • Certified Veterinary Assistant (CVA) • EC-Council Cyber Forensics Associate • EC-Council Ethical Hacker Associate • QuickBooks Certified User • Entrepreneurship & Small Business • Certified Medical Administrative Assistant (CMAA) • Certified Phlebotomy Technician (CPT) • Certified Clinical Medical Assistant (CCMA) • Certified Pharmacy Technician (CPhT) • NCCER Construction Technology (Secondary) • NCCER Welding- Level 1 • Certified Food Protection Manager (ServSafe®) • Emergency Medical Technician (EMT) • Certified Food Safety Manager • PMI Project Management Ready • Certified Internet Web (CIW) E-Commerce Specialist 	<ul style="list-style-type: none"> • Certified Internet Web (CIW) Database Design Specialist • Certified Internet Web (CIW) JavaScript Specialist • Certified Internet Web (CIW) Advanced HTML5 & CSS3 Specialist • Certified Internet Web (CIW) Data Analyst Specialist • Certified Internet Web (CIW) User Interface Designer • Accredited Legal Professional (ALP) • Small UAS (sUAS) Safety Certification: Level 1 • Information Technology Specialist (ITS) - Databases • Information Technology Specialist (ITS) - HTML5 Application Development • Information Technology Specialist (ITS) - Device Configuration and Management • Information Technology Specialist (ITS) - JavaScript • Information Technology Specialist (ITS) - Python • Information Technology Specialist (ITS) - Java • Information Technology Specialist (ITS) - Cloud Computing • Certified Phlebotomy Technician (CPT) • ASE Automobile/Light Truck Technician: Automatic Transmission/Transaxle (A2) • ASE Automobile/Light Truck Technician: Brakes (A5) • ASE Automobile/Light Truck Technician: Electrical/Electronic Systems (A6) • ASE Automobile/Light Truck Technician: Engine Performance (A8) • ASE Automobile/Light Truck Technician: Engine Repair (A1) • ASE Automobile/Light Truck Technician: Heating and Air Conditioning (A7) • ASE Automobile/Light Truck Technician: Manual Drive Train and Axles (A3) • ASE Automobile/Light Truck Technician: Suspension and Steering (A4) • ASE Auto Maintenance and Light Repair (G1) • NIMS Machining Level I - CNC Milling: Programming Setup & Operations • NIMS Machining Level I - CNC Turning: Programming Setup & Operations • NIMS Machining Level I - Turning Operations: Turning Between Centers • NIMS Machining Level I - Turning Operations: Turning Chucking Skills • NIMS Machining Level I - Drill Press Skills I

What is a Career Academy?

A Collier Career Academy is a small, personalized learning community, comprised of a group of students within the larger high school, who take classes together over a 2, 3, or 4-year span, and are taught by a team of teachers from different disciplines. This enables students to see relationships among academic subjects, and their application to a broad field of work. An academy includes the following essential elements:

- A small learning community
- A college-prep curriculum with a career theme
- Partnerships with employers, the community, and higher education

Academy curriculum is rigorous and relevant and provides broad information about a field such as health care, finance, engineering, media, or natural resources. This curriculum is weaved into academic criteria which demands rigorous college-prep curriculum and clearly shows the elements of math, English, science, and social studies that are essential in order to excel in career courses.

Academy participation leads to:

- Industry-recognized certification in high demand occupations
- Standard high school diploma with either a merit or scholarship designation
- Opportunities for high school students to simultaneously earn college credit
- Opportunities for students to serve in paid or unpaid workplace experiences

Collier County has a deep belief in preparing students for the real world. Developing leading-edge curriculum and training instructors in specialized areas of study that have students prepared for the real world takes an exceptional commitment on their part. We live in a STEAM driven world that needs highly educated individuals to meet the everyday challenges of problem solving.

All CCPS academies adapted the Activity-, Project-, and Problem-based (APB) instructional driven curriculum that applies hands-on, real-world activities, projects, and problems that gives students an understanding in how the knowledge and skills they develop in the classroom may be applied in everyday life. The APB approach scaffolds student learning through structured activities and projects that empower students to become independent in the classroom that will help them develop skill sets to apply to an open-ended design problem.

Simply put, this approach provides students with unique opportunities to work collaboratively, identify problems, and apply what they have learned to find unique solutions and lead their own learning.

What Distinguishes an Academy as a Collier Career Academy?

Collier Career Academies are personalized learning communities designed to provide a comprehensive career preparatory pathway. This pathway focuses on three key domains. The curriculum component for CCA programs aligns course programs of study with state frameworks and many CCA programs feature partnerships with national curriculum providers, such as Project Lead the Way and IncubatorEDU. All CCA programs place a strong emphasis on work-based learning as the second core component. This includes the development of foundational skills, career exploratory events, and career preparatory events. The third component of CCA programs is the ability for students to earn a CAPE-recognized industry certification within their field.

How Do Students Earn College Credit in an Academy?

Career Academies provide opportunities for students to receive advanced credit or articulated credit through written (articulation) agreements to technical institutions, and two and four-year colleges or universities. The School District of Collier County strives to create and modify these written agreements with local educational institutions so that students continue on an uninterrupted path to higher education. Some academies offer dual enrollment opportunities which awards college credit upon completion of the course. These dual enrollment courses are often taught by instructors from the institution awarding the credit. An example of this is seen in the Aerospace Technologies and Teacher Assisting Programs of Study.

How Do Academy Students Earn Industry Certifications?

Academies also provide opportunities for students to prepare and take industry certifications related to their chosen career pathway. A variety of tests are available to students at various times upon reaching appropriate skill levels. These industry certifications are nationally recognized and provide opportunities for a higher level of placement into career fields if seeking employment or even

postsecondary credit if transitioning to a technical center or college.

All Career Academies in CCPS offer industry certifications. The Comprehensive Industry Certification List is the approved planning list for industry certified career education programs. This list, which is published annually, serves as the planning list for career and professional academies. The Department of Education then develops the "Industry Certification List" which must meet the following criteria:

- The certification must be on the "Comprehensive Industry Certification List"
- The certification must be achievable by students in a secondary level program
- The certification must require a minimum of one hundred fifty (150) hours of instruction

How is the Community Involved in Academies?

Required partnerships with employers, the community, and local colleges, bring resources from outside the high school to improve student motivation and achievement. Academy Advisory Boards ensure that all students receive the highest level and most recent industry curriculum with current work experiences so that students are ready for the fast-paced and ever-changing world of work. There should be no surprises once students graduate.

How Do Students Enroll in a Collier Career Academy?

Students enter the academy through a voluntary process; they must apply and be accepted with parental knowledge and support. Students wishing to enroll in an academy that is not located at their zoned high school can apply to an academy at another high school through the "Out of Zone" application process housed in the Student Services Department at the Martin Luther King, Jr Administration Center.

How is an Academy Evaluated?

Legislation requires DOE and local workforce boards to analyze academic achievement and performance of students participating in all academies that are designated as Career and Professional Education (CAPE) Academies. Progress is measured by the number of students in the academy that earns an industry certification while participating in the program.

Academies designated as Collier Career Academies must meet the requirements of the CCA program. Each year these academies have school-based teams that include district staff to monitor and implement the academy. Academy Directors complete an annual evaluation including data on academy implementation, work-based learning, and industry certification attainment. Academies that exceed requirements are eligible for further evaluation by the CCA Advisory Board and recognition as an Academy of Distinction.

What Does a Typical Academy Look Like?

Regardless of the type of Career Academy, the district has expectations for academies that far exceed the CAPE requirements. All the Career Academies in the district strive to contain and maintain the following elements:

- A Collier Career Academy has a defined mission.
- A small community of students with the same career interests
- Common scheduling so that students can learn and progress together in their career interest while still taking other courses of their choice.
- A team of teachers that work together both career and academic, that plan curriculum and bring out the common skills needed in a career field.
- Articulations with post-secondary institutions that provide advanced standing or college credit.
- Opportunities to acquire industry certifications related to Career Academy courses.
- Opportunities for hands-on, off-site experiences in the career field of interest.
- An Advisory Board made up of educators, business professionals and community members who can guide the curriculum and provide experiences in order to prepare students for the most current occupations related to their Career Academy.

Internship/On -the-Job Training Opportunities

OJT paid work programs, known as cooperative education, link the high school, the student, the parent, the employer,

and the teacher in a dynamic support partnership, creating a beneficial and relevant business experience for the student. These courses are offered to high school students directly correlating to one of the areas listed in the Introduction and may ONLY be taken by the student who has successfully completed at least one credit within the discipline area or who will be concurrently enrolled in a course within a specific career and technical area. A student who has never taken a career and technical course within one of the areas listed, is not eligible for OJT. This learning experience is designed to enhance the classroom instruction associated with the OJT assignment and is not intended to be a stand-alone course. The participating students must work for an employer or agency for 150 hours or more, ensuring that students graduate high school with greater understanding and connection to colleges and careers. Internships are work based exploratory or preparatory opportunity to enhance classroom learning through practical career related work experience. Internships can be paid, or unpaid, yet rewarded, and can be found in corporate and private businesses, government agencies and non-profit organizations. All internships should have the primary goal of providing students supervision and a chance to learn while contributing to the organization's needs. The participating students must work for an employer or agency for 120 hours or more, ensuring that students graduate high school with greater understanding and connection to colleges and careers.

Engineering Courses:

Work Based Experience – 8601800 -or-
Cooperative Diversified Education – OJT- 8300420

Finance Courses:

Financial Internship - 8815130 -or-
Finance Cooperative Education – OJT – 8501420

Information Technology (Applied Computer Applications)

Information Technology Cooperative Education - OJT -9000420 -or-
Information Technology Internship – 8207350

Information Technology (Digital Design)

Arts, A/V Technology and Communication Cooperative Education - OJT – 8200430 -or-
Executive Internship I – 0500300

Health Science Courses

Health Science Education Cooperative – OJT – 8400410 -or-
Executive Internship I - 0500300

Hospitality & Tourism Courses (Hospitality or Culinary)

Hospitality Internship – 8845130 --or--
Hospitality and Tourism Cooperative Education-OJT – 8800420

Hospitality & Tourism Courses (Marketing)

Executive Internship - 8845130 -or-
Marketing Cooperative Education-OJT - 8800410

How do Career Academy Advisory Committees Operate?

A well-constructed advisory committee can add significant value in advancing the mission and goals of the academy. It can bolster the impact on the students and can add vital support and expertise to the program. Advisory Boards perform the following important functions for students and teacher's academy:

- Advise teachers on the relevance of technical courses being offered to ensure that they meet the needs of current job opportunities in the community and statewide
- Suggest new programs
- Review goals and objectives of the academy
- Provide industry expertise to support the academy's curriculum
- Hold the program accountable for stated outcomes
- Support funding opportunities that are beyond the scope of the school district

- Help to establish goals related to placement and enrollment of students
- Suggest guidelines for student selection to programs which have limited enrollments
- Provide mentoring and shadowing opportunities for students and teachers
- Advise administrators on standards for instructional facilities
- Advise the administration on instructor qualifications
- Recommend types of equipment to be used in the program
- Provide practical on the job shadowing or industry related training for the instructor
- Coach and support the academy directors with their course content
- Advisory Boards perform the following important functions for future planning and community relations:
- Advise on current job needs of business and industry
- Serve as a link between the career academies and potential employers of graduates
- Assist in locating employers for graduates and cooperative students
- Assist in planning student placement and follow-up
- Offer or help secure paid or non-paid summer internships for Academy students
- Encourage and support articulation agreements with colleges and university's
- Serve as a communication link between the education community and the business-industry community
- Help maintain a positive public image of the academy with the community
- Help increase the public's understanding of and support for career academy programs
- Solicit financial help for academy supplies or equipment
- Identify and communicate external opportunities and challenge

Special Initiative: Entrepreneurship

Collier County schools are supporting the future of Collier County by encouraging interested students to spend a year studying the process of Entrepreneurship. The Entrepreneurship Course is offered in each high school in the district. The importance of entrepreneurship as the engine of innovation and renewal is a widely held societal belief. The contexts, structures and processes that allow entrepreneurs to turn opportunities into viable ventures are not explicitly taught in our schools. This is unfortunate because entrepreneurship can be a fascinating unit of study and rewarding practice. From problem-solving, to communication, to managing finances, entrepreneurship teaches young people not only about the world of work, but also the entrepreneurial mindset that our students so desperately need to succeed in today's marketplace.

A nationally recognized curriculum, INCubatoredu, is used to aid in the teaching of the entrepreneurial mindset to our students which offers a blueprint for thinking and acting in environments that are fast paced, rapidly changing, and highly uncertain; it will arm our students with skills necessary to define and reach their destinies. Using the vast resources and synergy drawn from leading entrepreneurs in Collier County, the vast expertise and contacts of the Greater Naples Chamber of Commerce, and our partnership with Junior Achievement of Southwest Florida, CCPS will help students develop the knowledge, skills, and mindset necessary to build the entrepreneurial organizations of the future.

This program stresses personal development and offers an interactive class environment where students will learn teamwork and communication skills along with other proficiencies. Class assignments will deal with real-life business activities, including the development and presentation of business plans. Students will learn to conduct research and collect meaningful information and become confident in speaking to and communicating effectively with audiences. Additionally, interaction with entrepreneurs will allow students to learn how to network with others outside of their peer group. The course will culminate with a business plan competition.

Entrepreneurship is offered in both middle and high schools across the district. The courses in some high schools are included in the CCA Business Academies. The Entrepreneurship Program in high school leads directly to a variety of college programs including majors in entrepreneurship.

Special Initiative: Project Lead the Way Engineering and Biomedical Science

Collier County uses the PLTW engineering curriculum. This is a rigorous K-12 program with pathways that are cohesive and with a focus on hands-on learning experiences. PLTW along with Collier County believes that all students (beginning at a young age) need access to real-world, applied learning experiences that will empower them to gain the skills they need to thrive in college, career, and beyond. PLTW's research-supported approach empowers students to discover and apply knowledge learned to real-world challenges

that will allow them to become independent, confident problem solvers.

Collier County uses the PLTW Gateway curriculum for middle school students. During this time period middle school is a time of exploration, a time when students are figuring out what they're passionate about and how that relates to who they'll become tomorrow. The Gateway Program is building a strong foundation for high school, college, and career and also empower students to develop essential skills such as problem solving, critical and creative thinking, communication, collaboration, and perseverance. Currently the Collier County middle school students experience PLTW Gateway programs:

1. Design and Modeling; Students discover the design process and develop an understanding of the influence of creativity and innovation in their lives. Students are challenged and empowered to use and apply what they have learned to design a therapeutic toy for a child who has cerebral palsy.
2. Automation and Robotics; 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.

Collier County uses the PLTW Engineering curriculum for high school students. From launching space explorations to delivering safe, clean water to communities, engineers find solutions to pressing problems and turn their ideas into reality. PLTW Engineering empowers students to step into the role of an engineer, adopt a problem-solving mindset, and make the leap from dreamers to doers. The program's courses engage students in compelling, real-world challenges that help them become better collaborators and thinkers. Students take from the courses in-demand knowledge and skills they will use in high school and for the rest of their lives, on any career path they take. Thus, Collier County high school engineering students become tomorrow's problem solvers today. Currently the Collier County high school student can choose from a wide variety of PLTW Engineering programs:

1. Introduction to Engineering Design (IED); Students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3D modeling software, and use an engineering notebook to document their work.
2. Principles of Engineering (POE) - Using problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation.
3. Digital Electronics (DE) - From smartphones to appliances, digital circuits are all around us. This course provides a foundation for students who are interested in electrical engineering, electronics, or circuit design. Students study topics such as combinational and sequential logic and are exposed to circuit design tools used in industry, including logic gates, integrated circuits, and programmable logic devices.
4. Aerospace Engineering (AE) - This course propels students' learning in the fundamentals of atmospheric and space flight. As they explore the physics of flight, students bring the concepts to life by designing an airfoil, propulsion system, and rockets. They learn basic orbital mechanics using industry-standard software. They also explore robot systems through projects such as remotely operated vehicles.
5. Civil Engineering and Architecture (CEA) - 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.
6. Computer Integrated Manufacturing (CIM) - Manufactured items are part of everyday life, yet most students have not been introduced to the high-tech, innovative nature of modern manufacturing. This course illuminates the opportunities related to understanding manufacturing. At the same time, it teaches students about manufacturing processes, product design, robotics, and automation. Students can earn a virtual manufacturing badge recognized by the National Manufacturing Badge system.
7. Engineering Design and Development (EDD)- The knowledge and skills students acquire throughout PLTW Engineering come together in Engineering Design and Development as they identify an issue and then research, design, and test a solution, ultimately presenting their solution to a panel of engineers. Students apply the professional skills they have developed to document a design process to standards, completing Engineering Design and Development ready to take on any post-secondary program or career.

The newest Collier County PLTW program is the Biomedical Science curriculum for high school students. Whether discovering new cancer treatments or teaching healthy lifestyle choices to their communities, today's biomedical science professionals are tackling big challenges to make the world a better place. Thus, Collier County Biomedical Science students are taking on these same real-world challenges – and they're doing it before they even graduate from high school. Working with the same tools used by professionals in hospitals and labs, students engage in compelling, hands-on activities and work together to find solutions to problems. Students take from the courses in-demand knowledge and skills they will use in high school and for the rest of their lives, on any career path they take. Currently the Collier County high school student can take the PLTW Biomedical Science course sequence:

1. Principles of Biomedical Science- In the introductory course of the PLTW Biomedical Science program, students explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person's life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.
2. Human Body Systems- Students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis in the body. Exploring science in action, students build organs and tissues on a skeletal Maniken®; use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases.
3. Medical Interventions- Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.
4. Biomedical Innovation- In the final course of the PLTW Biomedical Science sequence, students build on the knowledge and skills gained from previous courses to design innovative solutions for the most pressing health challenges of the 21st century. Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. They have the opportunity to work on an independent project with a mentor or advisor from a university, medical facility, or research institution.

What is an Articulation Agreement?

An articulation agreement is an approved agreement that is formed through formal agreements between educational institutions. During articulation, representatives from each institution conduct meetings among faculty and staff to consider similarities in course work, curricula, syllabi, textbooks and competency profiles to ensure seamless transfer of credits to the partner institution. Their consensus is then formalized in a written agreement which is used by students and advisors and is regularly updated according to a mutual schedule. The agreement outlines specific courses and letter grades completed at one institution that will transfer to another institution. In addition, it may call for enrollment in the institution for at least one semester as a full time student.

How do Articulation Agreements benefit students?

Once an articulation agreement is approved, students benefit from:

- documented course expectations and other stipulations as agreed upon by the institutions
- approved course work that's guaranteed to transfer to the partner institution
- faculty and staff from both the school district and college understand the expected learning outcomes for students
- a stronger foundation for learning and greater acceptance of community-college and trade- school students into four-year universities
- students earn several credits toward a degree in a postsecondary institution which saves money in the future as the courses taken during high school are free

Does the Collier County School district offer Articulation Agreements?

The Collier County School District's Career & Technical Education Department is responsible for local articulation agreements that center on Career & Technical Education Programs and Career Academies. Articulations can be made by course, program, industry certification or work experience. Collier County has many articulations with Edison State College, Hodges University, Keiser University, Embry Riddle Aeronautical University, Lorenzo Walker Technical Center, and Immokalee Technical Center. Information on the current articulation can be found at <https://www.collierschools.com/Page/1294>.

How Do Students Get Credit for Articulated Courses?

Students must follow the requirements of the articulation agreement in order to acquire credit at a specific institution. Typically, when articulating courses, institutions will require proof of the courses and grades completed that apply to the specific articulation agreement. Therefore, students must go to their high school counselor and get a copy of their transcript with the specific articulated courses highlighted. This transcript should be delivered to the registrar's office. Most often, articulation agreements require students to enroll as a full time student for at least one semester and in a specific degree program. This is not an automatic process – students are responsible for delivering the appropriate documents to the institution they are attending.

Articulated state industry certifications are placed on the student's transcript and become permanent documentation. Credits are automatically awarded, when appropriate, at the college the student is attending.

What Other Agreements are Available to Students?

The State of Florida also offers articulation agreements that must be honored in postsecondary institutions across the state. The State Board of Education annually approves a list of Statewide Career and Technical Education Articulation Agreements which supports the area of focus, "to expand opportunities for postsecondary degrees and certificates." These agreements are intended to be a minimum guarantee of articulated credit and do not preclude institutions from granting additional credit based on local agreements.

- [PSAV to AAS/AS Degree](#)
- [Gold Standard Career Pathways Articulation Agreements of Industry Certification to AAS/AS Degree](#)
- [AS to Baccalaureate Degree Articulation Agreements](#)
- [ATD to AAS/AS Articulation Agreements](#)

Why Are Articulation Agreements Significant?

As of 2010, 60 percent of all college students attend more than one institution of higher learning, according to the National Articulation and Transfer Network. Community colleges offer core freshman and sophomore classes for a wide variety of students, including working students and minorities. In 2008, the American Association of Community Colleges reported that 35 percent of community-college students are minorities, and 39 percent are the first in their families to attend college. As a result, articulation agreements create equal opportunities for students who might not otherwise be able to graduate from four-year universities or other programs.

What is Industry Certification?

An Industry certification is a documented certification earned by a person to assure qualifications are met to perform a job or task. Most certification programs are created, sponsored, or affiliated with professional associations, trade organizations, or IT vendors (i.e. Microsoft) interested in raising standards. These certifications must be renewed periodically, or may be valid for a specific period. Due to changing employment and increased ever-changing technology requirements, industry certification provides an impartial, third-party endorsement of a person's professional knowledge and experience and recognized across the country.

Certifications are usually earned from a professional society or educational institute, not the government. If a demonstration of ability or knowledge is required by law before being allowed to perform a task or job, it is referred to as licensure by state agencies. Licensure may or may not be accepted across state lines therefore, individuals may have to retest for licensure when applying for positions in different states.

Why Is an Industry Certification Important?

Industry Certification verifies that individuals have the entry-level skills to perform job functions in the area of certification. Research indicates students who attain industry certifications earn more money over the course of their careers than those lacking industry recognized certifications. Students who earn a certification feel a sense of accomplishment.

Business and Industry have asked for more qualified and skilled workforce from school systems. Students who earn industry certifications have a competitive edge upon graduation and become more marketable in the workplace during and after college and/or other postsecondary schooling. Students can also receive college credit after obtaining an Industry certification through state or local articulation agreements. Students can find approved industry certifications for the various Career and Technical Education Programs and Academies for Collier County at <https://www.collierschools.com/Page/1280>.

How Do Students Prepare and Take Industry Certification Tests?

Industry certifications are an important component of Career Academies and Career and Technical Education Programs as it shows students have demonstrated evidence of technical skill attainment and also impacts school grade as a part of accelerated coursework component.

Therefore, at the conclusion of various stages of course work in a Career & Technical Education Program of Study or Career Academy, students are provided with opportunities to take a pre-test. With most certifications students are offered the opportunity to take a pre-test. A score of 90% with teacher recommendation allows students to take the applicable industry certification test. Some tests are offered at various times during the year and others may only be offered once. Teachers notify students well in advance, when industry certification tests are available. State rules allow students to take a test up to three times in a school year with at least 20 days between each administration.

How are Industry Certificates Documented and Awarded?

When a student passes an industry certification test, it is placed on page 4 of the student transcript and becomes permanent documentation. Most certifications are added to student records in the later portion of the school year. State colleges will automatically award college credit to each student that has a certification on their transcript. Example; if a student earns an AutoCAD certificate, colleges will issue three hours of credit in the specific AS programs listed on the state articulation agreement.

How are industry certifications related to CAPE Academies?

One of the requirements of CAPE is to develop the approved CAPE Industry Certification Funding List. This list is used by school districts in planning and designing programs that support their regional economies. Additions to the list are considered for occupations that are either in demand or tied to emerging industries, or meet certain other criteria. CAPE students prepare to take the applicable industry certification tests through their course work and hands-on experiences.

This site is the primary source for information related to industry certifications and will be updated as the information for each certification is validated. The descriptions currently displayed are from the current CAPE Industry Certification Funding List, approved by the State Board of Education. You can find current information at <http://www.fldoe.org/workforce/fcpea/default.asp>.

Which Industry Certifications Can Be Used to Earn Math and Science Credits Toward High School Graduation and Toward College Credit?

Upon successful attainment of a qualifying industry certification, students would be eligible for substitution credit in mathematics and/or science. The industry certification substitution cannot substitute for Algebra 1, geometry or biology, but rather toward the balance of the two other unspecified mathematics credits and one of the unspecified equally rigorous science credits required for high school graduation. It is important to note that one qualifying industry certification attainment equates to one substitution credit. A student would need to earn three distinct industry certifications to earn the maximum three substitution credits (two in mathematics and one in science). Information on industry certifications which qualify can be found here: <http://www.fldoe.org/academics/career-adult-edu/career-technical-edu-agreements/industry-certification.stml>.

The course code waiver numbers for student transcript purposes are: Industry Certification Mathematics Waiver numbers-1200998 and 1200999; Industry Certification Science Waiver number- 2000999.

The items listed below are links to the Florida Department of Education Website for specific information on college credit which can be awarded as part of earning the certifications below. College Credit is only awarded if the certification is five years old or less, and the student is enrolling in the specific program at a state college in the program shown below at the following: <http://www.fldoe.org/academics/career-adult-edu/career-technical-edu-agreements/industry-certification.stml>

Gold Standard Certifications that are offered in Collier County

Where can I find programs of Study?

Programs of Study are documents that describe a career pathway that a student can follow in high school that will work toward meeting particular career goals. When a student selects a career field, each student should carefully review the appropriate program of study which will provide information on high school graduation, meeting all educational requirements to graduate, view the industry certification associated with that field, see the academic courses that would best meet the needs of someone in that particular field, and see what post-secondary technical programs, college, and university programs would lead to that particular kind of employment. A typical student should view the program of study as a flexible tool in planning the pathway he/she would follow to achieve a particular career of interest. You can find the Program of Study at the following link on the district website: [CCPS CTE Programs of Study](#)

What Are Career Themed Courses?

Career Themed Courses are courses that the school district identifies where students have the option to earn approved industry certifications. These courses include Career Academy courses, Career and Technical Education program courses, and other elective courses offered in a school where the teacher possesses industry certifications. These elective courses can be in subjects like art and journalism where students can earn Adobe or Microsoft Certifications.

All Career and Technical Education Courses and many courses that are related to career development and offer industry certifications are registered as Career Themed courses in high schools. Both core and elective courses can be career themed courses. The specific career themed course changes each year and vary from one school to another. Each career themed course must be focused on career development and must offer industry certifications.

You can find current information on state approved industry certifications at the following: <http://www.fldoe.org/academics/career-adult-edu/cape-secondary/index.stml>

What is Dual Enrollment?

There are two kinds of dual enrollment programs. Academic Dual Enrollment is an agreement with a college or university that allows students to simultaneously earn college credit at the same time the students are earning meeting requirements for high school graduation. In Career Education Program students may earn college credit with Edison State College in the Teacher Education program while in Naples, Immokalee, and Lely High Schools. Students may also earn college credit with Embry Riddle University while completing courses for the Aerospace Technology/Aviation program at Lely High School.

Career Education Dual Enrollment is programs where students can earn both a High School Diploma and a Post-Secondary Adult Education Certificate at the same time. Students may enroll at Lorenzo Walker Technical High School and Lorenzo Walker Technical Center simultaneously or may enroll at Immokalee High School and Immokalee Technical Center simultaneously. Career Dual Enrollment students must earn an industry certification in the program. Specific programs have requirements on admittance due to the space limitations. Students should verify with the school programs that are available at the time of registration.

What Career Dual Enrollment Programs Are Available in the District Technical Centers?

Immokalee Technical College/Immokalee High School	Lorenzo Walker Technical College/ Lorenzo Walker Technical High School
Accounting Operations	Accounting Operations
Administrative Assistant / Office Specialist	Automotive Collision, Repair & Refinishing
Architectural Drafting	Automotive Service Technology
Automotive Service Technology	Aviation Maintenance Technology
Blueprint Reading and Estimation	Certified Nursing Assisting
Building Construction Technology	Child Care Center Operations
Certified Nursing Assistant	Commercial Foods and Culinary Arts
Computer Systems Technology	Computer Systems & Information Technology
Commercial Foods and Culinary Arts	Cosmetology
Cosmetology	Dental Assisting
Cybersecurity Technology	Drafting
Early Childhood Education	Legal Administrative Specialist
Heavy Equipment Mechanics	Licensed Practical Nursing
Legal Administrative Specialist	Marine Service Technology
Licensed Practical Nursing	Massage Therapy
Machining	Medical Administrative Specialist
Medical Administration Specialist	Medical Assisting
Medical Billing and Coding	Multimedia Design
Multi-Media Design Technology	Nails Specialty
Nail Specialty	Network Support Services
	Pharmacy Technician
	Phlebotomy

What is a Career Cluster?

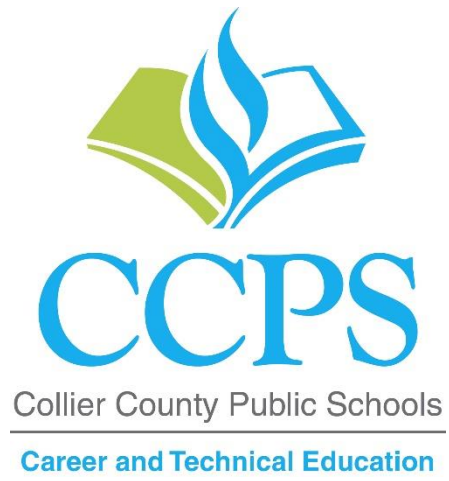
Career Clusters are groupings of occupations/career specialties based on a required set of common knowledge and skills for career success and curriculum design and instruction. The Knowledge and Skills represented by Career Cluster prepare learners for a full range of occupations/career specialties, focusing on the blend of technical, academic and employability knowledge and skills.

What is a Career Pathway?

Pathways are sub-groupings of occupations/career specialties based on a set of common knowledge and skills for career success and used to design curriculum and instruction.

What are the 10 common knowledge and skills required in all Career Clusters?

1. Academic Foundations: Achieve additional academic knowledge and skills required to pursue the full range of career and postsecondary education opportunities within a career cluster.
2. Communications: Use oral and written communication skills in creating, expressing and interpreting information and ideas including technical terminology and information.
3. Problem solving and Critical Thinking: Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams using creativity and innovation.
4. Information Technology Applications: Use information technology tools specific to the career cluster to access, manage, integrate, and create information.
5. Systems: Understand roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment. Identify how key organizational systems affect their performance and the quality of products and services. Understand global context of industries/careers.
6. Safety, Health and Environmental: Understand importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. Follow organizational policies/procedures and contribute to continuous improvement in performance and compliance.
7. Leadership and Teamwork: Use leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.
8. Ethics and Legal Responsibilities: Understand importance of professional ethics and legal responsibilities.
9. Employability and Career Development: Know and understand the importance of employability skills. Explore, plan, and effectively manage careers. Know and understand the importance of entrepreneurship.
10. Technical Skills: Use the technical knowledge and skills required to pursue the targeted careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster.



High School CTE Programs by Career Cluster

Agriculture, Food, & Natural Resources

CAREER CLUSTER: AGRICULTURE, FOOD, & NATURAL RESOURCES

The Agriculture, Food and Natural Resources (AFNR) Career Cluster is a highly technical, ever-changing sector of the global economy upon which everyone is dependent. We will continue to meet national and global demand for safe and abundant food, fiber, and fuel supply if we invest in the growth and development of the human capital for the AFNR industry. Strong, relevant AFNR career and technical education programs that are informed by industry and education stakeholders are one way we can meet workforce needs now and in the future.

Industry Certifications: Agritechnology Certification, Entrepreneurship and Small Business

Program: Aquaculture

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Agriculture, Food and Natural Resources career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Agriculture, Food and Natural Resources career cluster.

The content includes but is not limited to instruction in the planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety and environmental issues in the aquaculture industry.

Program Number	8004100				
CIP Number	0101030303				
Grade Level	9-12				
SOC Codes (all applicable)	45-2093 - Farmworkers, Farm, Ranch, and Aquacultural Animals 11-9013 – Aquaculture Managers				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8106810	Agriscience Foundations	1 credit	--	3	EQ
8112010	Aquaculture 2	1 credit	45-2093	3	EQ
8112020	Aquaculture 3	1 credit	45-2093	3	EQ
8112030	Aquaculture 4	1 credit	11-9013	3	--

Architecture & Construction

CAREER CLUSTER: ARCHITECTURE & CONSTRUCTION

Educational programs in the Architecture and Construction Career Cluster prepare students for careers in design/pre-construction, construction, and maintenance/operations. Examples of careers include carpenters, drafters, electricians, construction managers, HVAC technicians and plumbers.

Industry Certifications: NCCER Carpentry Level 1, Project Management Ready, Autodesk Certified User, Entrepreneurship and Small Business

Program: Building Trades and Construction Design Technology

The purpose of this program is to prepare students for employment or advanced training in the building construction industry.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Architecture and Construction career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Architecture and Construction career cluster.

The content includes but is not limited to applying construction techniques; reading plans and specifications; and developing trade skills in carpentry, masonry, electricity, plumbing and air conditioning.

Program Number	8722000				
CIP Number	0646041506				
Grade Level	9-12				
SOC Codes (all applicable)	49-9071 - Maintenance and Repair Workers, General				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8722010	Building Trades and Construction Design Technology 1	1 credit	49-9071	2	--
8722020	Building Trades and Construction Design Technology 2	1 credit	49-9071	2	--
8722030	Building Trades and Construction Design Technology 3	1 credit	49-9071	3	PA
8722040	Building Trades and Construction Design Technology 4	1 credit	49-9071	2	--
8722050	Building Trades and Construction Design Technology 5	1 credit	49-9071	2	--
8722060	Building Trades and Construction Design Technology 6	1 credit	49-9071	3	PA

Arts, A/V, Technology, & Communications

CAREER CLUSTER: ARTS, A/V, TECHNOLOGY, & COMMUNICATIONS

The Arts, A/V Technology and Communications (AAVTC) Career Cluster encompasses audio/video technology and film, journalism, and broadcasting, performing arts, printing technology, telecommunications, and visual arts.

Industry Certifications: Adobe Certified Professional, Project Management Ready, Entrepreneurship and Small Business, Certified Internet Web: Social Media Strategist, Autodesk Certified User

Program: Digital Design

The purpose of this program is to prepare students for employment in the Digital Design industry as Information Technology Assistants, Production Assistants, Digital Assistant Designers, Graphic Designers, and Multimedia Designers.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and the relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, enhanced practical experiences in computer-generated art and text, graphic design, graphic production, digital design skills, preparation of digital layouts and illustrations, scanning, and the development of specialized multimedia presentations.

Program Number	8209600				
CIP Number	0510030306				
Grade Level	9-12				
SOC Codes (all applicable)	27-1024 – Graphic Designers 43-9031 – Desktop Publishers 15-1151 – Computer User Support Specialists				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8207310	Digital Information Technology	1 credit	15-1151	2	PA
8209510	Digital Design 1	1 credit	43-9031	3	PA
8209520	Digital Design 2	1 credit	43-9031	3	PA
8209530	Digital Design 3	1 credit	43-9031	3	PA
8209540	Digital Design 4	1 credit	27-1024	3	PA
8209550	Digital Design 5	1 credit	27-1024	3	PA

Program: Digital Media/Multimedia Design

The purpose of this program is to prepare students for work as multimedia artists and animators.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, practical experiences in webpage design and interactive presentation development, testing and production. Specialized skills in multimedia presentations such as video editing, audio features, and simple animation and authoring software are used to produce a variety of interactive multimedia presentations.

Program Number	8201600				
CIP Number	0609070220				
Grade Level	9-12				
SOC Codes (all applicable)	27-1014 – Multimedia Artists and Animators				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8201210	Digital Media/Multimedia Foundations 1	1 credit	27-1014	2	PA
8201220	Digital Media/Multimedia Foundations 2	1 credit	27-1014	2	PA
8201230	Digital Media/Multimedia Foundations 3	1 credit	27-1014	3	PA
8201610	Digital Media/Multimedia Web Production	1 credit	27-1014	3	PA
8201620	Digital Media/Multimedia Motion Graphics Production	1 credit	27-1014	3	PA

Program: Journalism and Multimedia

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The purpose of this program is to prepare students for employment as writers, editors, and multimedia journalists (SOC 27-3041, 27-4021). This program provides a medium whereby the student will be given the opportunity for practical hands-on experiences that incorporate academic skills into a real life situation.

The program familiarizes individuals with journalistic writing, script writing, graphic communications, desktop publishing, multimedia production, photojournalism, and investigative reporting.

The presentation of subject matter should incorporate team teaching. Activities should utilize a rotational type format so that the student is exposed and reinforced academically and vocationally for each outcome.

Program Number	8771101				
CIP Number	0609010000				
Grade Level	9-12				
SOC Codes (all applicable)	27-3041 – Editors 27-4021- Photographers 43-9031- Desktop Publishers				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8203000	Foundations of Journalism	1 credit	27-3041	2	PA
8771110	Media Production	1 credit	27-3041	2	PA
8209510	Digital Design 1	1 credit	43-9031	3	PA
8203001	Photojournalism	1 credit	27-4021	2	PA

Program: Television Production Technology

The purpose of this program is to prepare students for initial employment as television production operators, television broadcast technicians, camera operators, other professional/para-professional technicians, video recording engineers, and audio recording engineers. This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster. The content includes, but is not limited to, communication skills, leadership skills, human relations and employability skills, safe and efficient work practices, and preparation to assume responsibility for the television production studio activities (e.g., scriptwriting, lighting, shooting and directing, electronic news gathering, and field production).

Program Number	8201500
CIP Number	0610020217
Grade Level	9-12
SOC Codes (all applicable)	27-4032 – Film and Video Editors 27-4031 – Camera Operators, Television, Video, and Motion Picture

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8201510	Television Production Technology 1	1 credit	27-4031	2	PA
8201520	Television Production Technology 2	1 credit	27-4031	2	PA
8201530	Television Production Technology 3	1 credit	27-4031	3	--
8201540	Television Production Technology 4	1 credit	27-4031	3	--
8201550	Television Production Technology 5	1 credit	27-4031	3	PA
8201560	Television Production Technology 6	1 credit	27-4031	3	PA
8201570	Television Production Technology 7	1 credit	27-4032	3	PA
8201580	Television Production Technology 8	1 credit	27-4032	3	PA

Education & Training

CAREER CLUSTER: EDUCATION AND TRAINING

The Education & Training Career Cluster offers students educational opportunities, training services, and related learning support with an emphasis on improving public education services. The Education & Training Career Cluster is divided into three pathways: Teaching and Training; Professional Support Services; and Administration and Administrative Support.

Industry Certifications: Childcare Development Associate, Childhood Professional Certificate, Entrepreneurship and Small Business

Program: Early Childhood Education

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Education & Training career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Education & Training career cluster.

The content includes but is not limited to competencies related to the following elements of the early childhood education industry: planning, management, finance, technical, and production skills; underlying principles of technology; labor, community, health, safety, and environmental issues; and developmentally appropriate practices for children birth through age eight.

Program Number	8405100
CIP Number	0419070913
Grade Level	9-12

Program: Early Childhood Education

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Education & Training career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Education & Training career cluster.

The content includes but is not limited to competencies related to the following elements of the early childhood education industry: planning, management, finance, technical, and production skills; underlying principles of technology; labor, community, health, safety, and environmental issues; and developmentally appropriate practices for children birth through age eight.

SOC Codes (all applicable)	39-9011 – Childcare Workers 25-2011 – Preschool Teachers, Except Special Education
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Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8405110	Early Childhood Education 1	1 credit	39-9011	2	--
8405120	Early Childhood Education 2	1 credit	39-9011	2	--
8405130	Early Childhood Education 3	1 credit	25-2011	3	PA
8405140	Early Childhood Education 4	1 credit	25-2011	3	--

Program: Principles of Teaching

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Education & Training career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Education & Training career cluster.

The content includes but is not limited to competencies and skills needed to become a professional in the field of education. This includes an understanding of education in the United States, the ability to work effectively with all students, educational technology, classroom management, student assessment, communication skills, and other skills needed to support the learning activities of students.

To be enrolled a student's status in school and schedule must allow sufficient time for the student to be able to complete the program. The Teacher Assisting / Principles of Teaching program is designed to support teaching activities for students in classroom settings. It is not a program to provide clerical support to faculty or office/administrative personnel.

Program Number	8909000
CIP Number	0713129902
Grade Level	9-12
SOC Codes (all applicable)	25-9041 – Teacher Assistants

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8909010	Introduction to the Teaching Profession	1 credit	25-9041	2	--
8909020	Human Growth and Development	1 credit	25-9041	2	--
8909030	Foundations of Curriculum and Instruction	1 credit	25-9041	3	--
8909040	Principles of Teaching Internship	1 credit	25-9041	2	--

Engineering & Technology Education**CAREER CLUSTER: ENGINEERING AND TECHNOLOGY EDUCATION**

The Engineering and Technology Education pathway offers students educational opportunities, training services, and related learning support with an emphasis on the acute need for engineers in this country by educating students in the principles of engineering, and providing content in the fields of electronics, biotech, aerospace, civil engineering, and architecture.

Industry Certifications: Autodesk Certified User, Project Management Ready, Entrepreneurship and Small Business, Engineering Core, FAA Ground School, FAA Private Pilot, sUAS Safety Certification, Level 1

Program: Aerospace Technologies

The purpose of this program is to provide students with a foundation of knowledge and technically oriented experiences in the study of Aerospace Technologies, its effect upon our lives, and the choosing of an occupation. The content and activities will also include the study of safety and leadership skills. This program focuses on transferable skills and stresses understanding and demonstration of the technological tools, machines, instruments, materials, processes and systems in business and industry.

Program Number	8600080
CIP Number	0821011800
Grade Level	9-12
SOC Codes (all applicable)	--

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8600580	Aerospace Technologies I	1 credit	--	3	EQ
8600680	Aerospace Technologies II	1 credit	--	3	EQ
8601780	Aerospace Technologies III	1 credit	--	3	EQ

Program: Artificial Intelligence (AI) Foundations

This program offers a sequence of courses that provide coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in Artificial Intelligence (AI)-enabled careers; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of AI and Machine Learning required for AI-enabled professionals working in business and academic environments.

The content includes fundamental understanding of an AI system and their components; problems and tools AI-enabled workers use to build models and systems that leverage data to make decisions; mastery of foundational skills required to become power AI users. In addition, the course content includes but is not limited to practical experiences in AI system design, deployment, and evaluation; problem identification; creation, selection, and curation of data sets; computer programming, use of machine learning algorithms, program design structure, employing ethical and responsible development methodologies and decision making, essential programming techniques, and implementation issues. Specialized programming skills involving advanced mathematical calculations and statistics are also integrated into the curriculum.

Program Number	9401100
CIP Number	0611010200
Grade Level	9-12
SOC Codes (all applicable)	--

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
9401010	Artificial Intelligence in the World	0.5 credit	--	2	CT
9401020	Applications of Artificial Intelligence	0.5 credit	--	2	CT
9007220	Procedural Programming	1 credit	--	3	CT
9401040	Foundations of Machine Learning	1 credit	--	2	CT

Program: Applied Robotics

The purpose of this program is to provide students with a foundation of knowledge and technically oriented experiences in the study of the principles and applications of robotics engineering and its effect upon our lives and the choosing of an occupation. The content and activities will also include the study of entrepreneurship, safety, and leadership skills. This program focuses on transferable skills and stresses understanding and demonstration of the science and mathematics knowledge, technological tools, machines, instruments, materials, processes and systems related to robotics.

Program Number	8410100
CIP Number	0615030330
Grade Level	9-12
SOC Codes (all applicable)	--

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
9410110	Foundations of Robotics	1 credit	--	3	PA
9410120	Robotic Design Essentials	1 credit	--	3	PA
9410130	Robotic Systems	1 credit	--	3	PA
9410140	Robotic Applications Capstone	1 credit	--	3	PA

Program: Engineering Pathways

The purpose of this program is to provide students with a foundation of knowledge and technically oriented experiences in the study of the applications of engineering and its effect upon our lives and the choosing of an occupation. The content and activities will also include the study of entrepreneurship, safety, and leadership skills. This program focuses on transferable skills and stresses understanding and demonstration of the technological tools, machines, instruments, materials, processes and systems in business and industry.

Program Number	9400300
CIP Number	0821010102
Grade Level	9-12
SOC Codes (all applicable)	--

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8600550	Introduction to Engineering Design	1 credit	--	3	PA
8600520	Principles of Engineering	1 credit	--	3	PA
8600530	Digital Electronics	1 credit	--	3	PA
8600560	Computer Integrated Manufacturing	1 credit	--	3	PA
8600590	Civil Engineering and Architecture	1 credit	--	3	PA
8600620	Aerospace Engineering	1 credit	--	3	PA
8600650	Engineering Design and Development	1 credit	--	3	PA

Finance**CAREER CLUSTER: FINANCE**

The Finance Career Cluster is divided into four pathways: Securities & Investments; Business Finance; Insurance; and Banking Services.

Industry Certifications: Project Management Ready, Entrepreneurship and Small Business, Intuit QuickBooks

Program: Finance

The purpose of this program is to prepare students for employment in the financial industry. This program is divided into two pathways, Finance and Global Finance. A student would complete the Finance Core then proceed into one of two pathways.

This pathway leads to a concentration in Finance. Possible entry level jobs include: billing and posting clerks, accounting/auditing clerks, credit authorizers, customer service representatives, tellers, and brokerage clerks. This program also provides supplemental training for persons previously or currently employed in the financial industry. This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the financial industry: planning; management; finance; accounting; economics; technical and production skills; underlying principles of technology; labor issues; community issues and health, safety, and environmental issues; risk management liability; and health, life, and disability insurance.

The path begins with an overview of globalization, including world factors pushing organizations to expand into other markets in order to remain viable. Students explore cultural and political differences that affect organizational operations and decision making. They then learn about international trade investment and international finance, including an examination of the role of the International Monetary Fund. Students study the business strategies that enable organizations to compete effectively in the global marketplace.

This path offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Finance career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Finance career cluster.

Program Number	8815100
CIP Number	0252080110
Grade Level	9-12, 30, 31
SOC Codes (all applicable)	43-3021 – Billing and Posting Clerks 43-3031 – Bookkeeping, Accounting, and Auditing Clerks 43-4041 – Credit Authorizers, Checkers and Clerks 43-4011 – Brokerage Clerks

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8207310	Digital Information Technology OR	1 credit	15-1151	2	PA
8815150	Business Communication and Technology	1 credit	43-3021	2	PA
8203310	Accounting Applications 1 (no substitutions)	1 credit	43-3031	3	--
8815110	Economics and Financial Services OR	1 credit	43-4041	3	--
2102360	AP Microeconomics OR	.5 credit	43-4041	3	EC
2102365	AP Microeconomics Innovation AND	.5 credit			EC
2102370	AP Macroeconomics	.5 credit			EC
8815130	Financial Internship OR	1 credit	43-4041	2	--
8501420	Finance Cooperative Education - OJT	1 credit	43-4041	2	--
8815120	Personal Finance	1 credit	43-4011	3	--

Program: Personal Financial Literacy

The purpose of this course is to give students an overview of personal and family finance concepts including the American economic system, personal and family management of resources including income, money management, saving and investing, spending and credit, the role of financial institutions and the consumer, consumer information and taxation and financial planning.

This content includes, but is not limited to, consumer rights and responsibilities, record-keeping, decision making and consumer choices, resource management, credit, taxation, wills, savings plans, investments, money management resources, insurance and contracts.

Program Number	8500120
CIP Number	09200104PA
Grade Level	9-12
SOC Codes (all applicable)	--

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8500120	Personal Financial Literacy	.5	--	2	--

Health Science

CAREER CLUSTER: HEALTH SCIENCE

The Health Science Career Cluster is divided into five pathways: Therapeutic Services; Diagnostic Services; Health Informatics; Support Services; and Biotechnology Research & Development.

Industry Certifications: Biotechnician Assistant, Certified Clinical Medical Assistant, Certified Medical Administrative Assistant, Certified Patient Care Technician, Certified Personal Trainer, Entrepreneurship and Small Business, Project Management Ready

Program: Biomedical Science

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.

The purpose of this program is to provide students with a foundation of knowledge and technically oriented experiences in the study and applications of biomedical sciences and the possibilities in the biomedical field.

The content includes but is not limited to the study of human body systems, medicine, health, key biological concepts, communication, transport of substances, locomotion, metabolic processes, defense, protection, research processes, engineering principles, and an introduction to bio-informatics. The program also includes the design and development of various medical interventions, including vascular stents, cochlear implants, and prosthetic limbs. In addition, students review the history of organ transplants, gene therapy, and stay updated on cutting-edge developments via current scientific literature.

Program Number	8708100				
CIP Number	0326010201				
Grade Level	9-12				
SOC Codes (all applicable)	--				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8708110	Principles of the Biomedical Sciences	1 credit	--	3	EQ
8708120	Human Body Systems	1 credit	--	3	EQ
8708130	Medical Interventions	1 credit	--	3	EQ
8708140	Biomedical Innovation	1 credit	--	3	--

Program: Exercise Science

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes but is not limited to planning, management, finance, technical and production skills, applied aspect of leadership, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues. Work-based learning experiences are an integral part of this program.

The purpose of this program is to prepare students for the wellness and fitness marketplace and its various components such as instructing or coaching groups or individuals in exercise activities and the fundamentals of an individual's health and wellness. Personal trainers demonstrate techniques and methods of participation and observe participants and inform them of corrective measures necessary to improve their skills and personal health.

Program Number	8417000
CIP Number	0331050405

Grade Level	9-12				
SOC Codes (all applicable)	31-9099 -- Healthcare Support Workers, All Other 39-9031 -- Fitness Trainers and Aerobics Instructors				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	1 credit	31-9099	3	EQ
8417110	Health Science Foundations	1 credit	31-9099	3	--
8417120	Exercise Science	1 credit	39-9031	3	--

Program: Medical Skills and Services					
This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.					
The purpose of this program is to give students an opportunity to apply knowledge and skills related to the area of Health Science career cluster.					
The content includes but is not limited to practical generic skills in health occupations.					
Program Number	8400320				
CIP Number	03179997PA				
Grade Level	9-12				
SOC Codes (all applicable)	--				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8400320	Medical Skills and Services	1 credit	--	2	--

Hospitality & Tourism

CAREER CLUSTER: HOSPITALITY AND TOURISM					
The Hospitality & Tourism Career Cluster teaches students how to chart career paths in one of the world's largest industries, from restaurant and food/beverage services, hotel and event management to sports and entertainment, and includes the study of geography, economics, and world cultures.					
Industry Certifications: ServSafe Food Manager, Project Management Ready, Entrepreneurship and Small Business					

Program: Culinary Arts					
This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Hospitality & Tourism career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Hospitality & Tourism career cluster.					
Program Number	8800500				
CIP Number	0420040210				
Grade Level	9-12				
SOC Codes (all applicable)	35-2021 – Food Preparation Workers 35-3021 – Combined Food Preparation and Serving Workers, Including Fast Food				

		35-2014 – Cooks, Restaurant 11-9051 – Food Service Managers			
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8800510	Culinary Arts 1	1 credit	35-2021	2	--
8800520	Culinary Arts 2	1 credit	35-3021	2	PA
8800530	Culinary Arts 3	1 credit	35-2014	3	PA
8800540 or 8800550 or 8800560	Culinary Arts 4 (Track 1) or Culinary Arts 4 (Track 2) or Culinary Arts 4 (Track 3)	1 credit	11-9051	3	--

Program: Hospitality and Tourism Management

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Hospitality & Tourism career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Hospitality & Tourism career cluster.

The content includes but is not limited to coursework that prepares students for employment in the hospitality & tourism industry as reservation and transportation agents, travel destination specialists, tour operators, transportation attendants, cruise ship consultants, or to provide supplemental training for those persons previously or currently employed in these occupations. This program includes components on planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues, and health, safety, and environmental issues.

Program Number	8703100
CIP Number	0252090101
Grade Level	9-12
SOC Codes (all applicable)	43-4081 – Hotel, Motel, and Resort Desk Clerks 43-4051 – Customer Service Representative 13-1121 – Meeting Convention and Event Planners 11-9081 – Lodging Managers

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8850110	Introduction to Hospitality & Tourism	1 credit	43-4081	2	--
8703110	Technology for Hospitality & Tourism	1 credit	43-4051	2	--
8703120	Hospitality & Tourism Marketing Management	1 credit	13-1121	3	--
8845130 or 8800420	Hospitality & Tourism Internship or Hospitality & Tourism Cooperative Education - OJT	1 credit	43-4081	2	--
8703130	Hospitality & Tourism Entrepreneurship	1 credit	11-9081	3	--

Program: Principles of Food

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Hospitality & Tourism career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and

problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Hospitality & Tourism career cluster.

The content includes but is not limited to preparing students to understand the principles of food, selection and storage, basic food preparation, and selection of food services.

Program Number	8500390				
CIP Number	0900112PA				
Grade Level	9-12				
SOC Codes (all applicable)	--				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8500390	Principles of Food	.5 credit	--	2	--

Program: Hospitality and Tourism Cooperative Education – OJT

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Hospitality & Tourism cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Hospitality & Tourism cluster.

Each student job placement must be related to the job preparatory program in which the student is enrolled or has completed.

The purpose of this course is to provide the on-the-job training component when the cooperative method of instruction is appropriate. Whenever the cooperative method is offered, the following is required for each student: a training agreement; a training plan signed by the student, teacher and employer, including instructional objectives; a list of on-the-job and in-school learning experiences; a workstation which reflects equipment, skills and tasks which are relevant to the occupation which the student has chosen as a career goal; and a site supervisor with a working knowledge of the selected occupation. The workstation may be in an industry setting or in a virtual learning environment. The student must be compensated for work performed.

The teacher/coordinator must meet with the site supervisor a minimum of once during each grading period for the purpose of evaluating the student's progress in attaining the competencies listed in the training plan.

Hospitality and Tourism Cooperative Education - OJT may be taken by a student for one or more semesters. A student may earn multiple credits in this course. The specific student performance standards which the student must achieve to earn credit are specified in the Cooperative Education - OJT Training Plan.

Program Number	8800420				
CIP Number	02529999CP				
Grade Level	9-12				
SOC Codes (all applicable)	--				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8800420	Hospitality and Tourism Cooperative Education - OJT	Multiple credits	--	2	--

Program: Hospitality and Tourism Directed Study

The purpose of this course is to provide students with learning opportunities in a prescribed program of study within the Hospitality & Tourism cluster that will enhance opportunities for employment in the career field chosen by the student.

Program Number	8801000				
CIP Number	0252999901				
Grade Level	11-12				
SOC Codes (all applicable)	--				

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8801000	Hospitality and Tourism Directed Study	1 credit - Multiple credits	--	2	--

Information Technology

CAREER CLUSTER: INFORMATION TECHNOLOGY

The Information Technology Career Cluster prepares students for career opportunities in programming, database administration, web design and administration, digital networks, and other areas in the expanding digital workplace. The program incorporates four pathways; Network Systems; Information Support & Services; Programming & Software Development; and Interactive Media.

Industry Certifications: Information Technology Specialist, Project Management Ready, Entrepreneurship and Small Business, Adobe Certified Professional, Certified Ethical Hacker, Cyber Forensics Associate

Program: Applied Cybersecurity

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and cybersecurity-related careers in the Information Technology career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of cybersecurity.

The content includes but is not limited to foundational knowledge and skills in computer and network security, security vulnerabilities, attack mechanisms and techniques, intrusion detection and prevention, cryptographic systems, system hardening, risk identification, incidence response, penetration testing, key management, access control, and recovery. Specialized courses focus on database security, planning and analysis, software, and web security.

Program Number	9001300
CIP Number	0511100302
Grade Level	9-12
SOC Codes (all applicable)	15-1212 – Information Security Analysts

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8207310	Digital Information Technology or	1 credit	15-1212	2	PA
9001310	IT Fundamentals and	1 credit	15-1212	2	--
9001320	Computer and Network Security Fundamentals	1 credit	15-1212	3	--
9001330	Cybersecurity Essentials	1 credit	15-1212	3	--
9001340	Operational Cybersecurity	1 credit	15-1212	3	--
9001350	Cybersecurity Planning & Analysis or	1 credit	15-1212	3	--
9001360	Database Security or	1 credit	15-1212	3	--
9001370	Software & Application Security or	1 credit	15-1212	3	--
9001380	Web Security or	1 credit	15-1212	3	--
9001390	Applied Cybersecurity Applications	1 credit	15-1212	3	--

Program: Applied Information Technology

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Information Technology career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and

problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Information Technology career cluster.

The content includes but is not limited to computer application skills including computer hardware, software applications, applications, computer programming, webpage design and advanced web tools, systems support and maintenance, network concepts, relational database concepts, multimedia tools, cybersecurity; extensive exploration of information technology careers; strategies for success including goal setting, study skills, organizing skills, learning styles, employability skills, and service learning; and core academic skills with a strong emphasis on effective communication skills.

Program Number	9003400
CIP Number	0511010302
Grade Level	9-12
SOC Codes (all applicable)	15-1151 – Computer User Support Specialists

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8207310	Digital Information Technology OR	1 credit	15-1151	2	PA
9003410	Computer Fundamentals AND	1 credit	15-1151	2	PA
9003420	Web Technologies	1 credit	15-1151	3	PA
9003430	IT Systems & Applications	1 credit	15-1151	3	--
9003440	Database Essentials	1 credit	15-1151	3	--
9003450	Programming Essentials	1 credit	15-1151	3	--
9003460	Web Development Technologies	1 credit	15-1151	3	PA
9003470	Multimedia Technologies	1 credit	15-1151	3	PA
9003480	Computer Networking Fundamentals	1 credit	15-1151	3	--
9003490*	Cybersecurity Fundamentals	1 credit	15-1151	3	--

Program: Computer Science Principles

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers such as a Computer Users Support Specialists, Computer Programmer Assistants, Computer Network Architects, and Computer Systems Analysts in the Information Technology career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Information Technology career cluster.

The content includes but is not limited to practical experiences in computer programming, algorithms, program design structure, logical thinking, development methodologies, essential programming techniques, and implementation issues. Specialized programming skills involving advanced mathematical calculations and physics are also integrated into the curriculum.

Program Number	9007600
CIP Number	0511020316
Grade Level	9-12
SOC Codes (all applicable)	15-1151 – Computer User Support Specialist 15-1131 – Computer Programmers

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
9007610	Advanced Information Technology	1 credit	15-1151	3	--
9007210	Foundations of Programming	1 credit	15-1131	3	--
9007220	Procedural Programming	1 credit	15-1131	3	--
0200335	Or AP Computer Science Principles	1 credit	15-1131	3	MA
9007230	Object-Oriented Programming Fundamentals**	1 credit	15-1131	3	--
0200320	Or AP Computer Science A	1 credit	15-1131	3	MA

Law, Public Safety, & Security

CAREER CLUSTER: LAW, PUBLIC SAFETY, AND SECURITY

The Law, Public Safety & Security Career Cluster is divided into five pathways: Correction; Emergency and Fire Management; Law Enforcement; Legal; and Security Protection.

Industry Certifications: 911 Public Safety Telecommunicator, NOCTI Criminal Justice Certification, Public Security Aide Certification, Accredited Legal Professional

Program: Criminal Justice Operations

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Law, Public Safety and Security career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Law, Public Safety and Security career cluster.

Program Number	8918000				
CIP Number	0743010305				
Grade Level	9-12				
SOC Codes (all applicable)	13-1041 Compliance Officers 33-9090 Miscellaneous Protective Service Workers 19-4092 Forensic Science Technicians 23-2011 Paralegals and Legal Assistants 33-3041 Parking Enforcement Workers				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8918010	Criminal Justice Operations 1	1 credit	33-9090	2	--
8918020	Criminal Justice Operations 2	1 credit	33-3041	2	--
8918030	Criminal Justice Operations 3	1 credit	19-4092	3	--
8918050	Public Service Officer OR	1 credit	13-1041	3	--
8918060	Certified Legal Assistant OR	1 credit	23-2011	3	--
8918070	Code Enforcement	1 credit	13-1041	2	--

Program: Public Safety Telecommunication

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Law, Public Safety & Security career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Law, Public Safety & Security career cluster.

The purpose of this program is to prepare students for employment as a dispatcher: police, fire, ambulance (SOC 43-5031). The content includes, but is not limited to, ethics and the role of the telecommunicator; standard telecommunication operating procedures; relationship to field personnel; understanding of command levels; typical layouts of message centers; use of performance aids; overview of emergency agencies; functions and terminology; use of correct words and grammar; communications equipment, functions and terminology; types of telecommunication equipment; malfunctions and maintenance agreements; proper and correct telephone and dispatching procedures and techniques; cooperation and reciprocal agreements with other agencies; federal, state, and local communication rules; emergency situations and operating procedures; emergency medical dispatch procedures; employability skills; leadership and human relations skills; and health.

Program Number	9101000
CIP Number	0743039900

Grade Level	11,12				
SOC Codes (all applicable)	43-5031 Police, Fire, and Ambulance Dispatchers				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
9101100	Dispatcher: Police, Fire, Ambulance	1.5 credits	43-5031	2	--

Program: Crime Scene Technology
 This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Law, Public Safety and Security career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Law, Public Safety and Security career cluster.

Program Number	8918001				
CIP Number	0743010604				
Grade Level	9-12				
SOC Codes (all applicable)	19-4092 Forensic Science Technicians				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8200301	Crime Scene Technology 1	1 credit	19-4092	2	--
8200302	Crime Scene Technology 2	1 credit	19-4092	2	--
8200303	Bloodstain Pattern Analysis	1 credit	19-4092	2	--
8200304	Courtroom Presentation of Scientific Evidence and Report Writing	1 credit	19-4092	2	--

Marketing, Sales, & Service

CAREER CLUSTER: MARKETING, SALES, AND SERVICE

The Marketing, Sales and Service Cluster encompasses advertising and marketing, buying, and merchandising, distribution and logistics, e-Marketing, management and entrepreneurship, marketing communications and promotion, marketing information management and research, and professional sales.

Industry Certifications: QuickBooks Certified User, Entrepreneurship and Small Business, Project Management Institute, Social Media Specialist

Program: Entrepreneurship
 This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and the relevant technical knowledge and skills needed to prepare for further education and careers in the Marketing, Sales and Service career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Marketing, Sales and Service career cluster.

The purpose of this program is to introduce students to the concept of entrepreneurship, present entrepreneurship as a viable career option, provide students with the skills needed to realistically evaluate their potential as business owners, and to develop the fundamental knowledge and skills necessary to start and operate a business.

Program Number	8812100				
CIP Number	0252070102				
Grade Level	9-12				

SOC Codes (all applicable)		11-2021 – Marketing Managers 11-1021 – General and Operations Managers			
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8812110	Principles of Entrepreneurship	1 credit	11-2021	2	PA
8812120	Business Management and Law	1 credit	11-2021	3	PA
8812000	Business Ownership	1 credit	11-1021	3	PA

Program: Marketing, Management, and Entrepreneurial Principles
 This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Marketing, Sales and Service career cluster; provides technical skill proficiency and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills and occupation-specific skills and knowledge of all aspects of the Marketing, Sales and Service career cluster.

Program Number	9200500
CIP Number	0252140103
Grade Level	9-12
SOC Codes (all applicable)	41-2031 – Retail Salespersons 11-2021 – Marketing Managers 11-1021 – General and Operations Managers

Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8827110	Marketing Essentials	1 credit	41-2031	2	PA
8827120	Marketing Applications	1 credit	41-2031	2	PA
8827130	Marketing Management	1 credit	11-2021	2	PA
8812000	Business Ownership	1 credit	11-1021	3	PA

Program: Marketing Cooperative Education OJT
 This course offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Marketing, Sales and Service cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Marketing, Sales and Service cluster.

Each student job placement must be related to the job preparatory program in which the student is enrolled or has completed.

The purpose of this course is to provide the on-the-job training component when the cooperative method of instruction is appropriate. Whenever the cooperative method is offered, the following is required for each student: a training agreement; a training plan signed by the student, teacher and employer, including instructional objectives; a list of on-the-job and in-school learning experiences; a workstation which reflects equipment, skills and tasks which are relevant to the occupation which the student has chosen as a career goal; and a site supervisor with a working knowledge of the selected occupation. The workstation may be in an industry setting or in a virtual learning environment. The student must be compensated for work performed.

The teacher/coordinator must meet with the site supervisor a minimum of one time during each grading period for the purpose of evaluating the student's progress in attaining the competencies listed in the training plan.

Marketing Cooperative Education OJT may be taken by a student for one or more semesters. A student may earn multiple credits in this course. The specific student performance standards which the student must achieve to earn credit are specified in the Cooperative Education - OJT Training Plan.

Program Number	8800410
CIP Number	02089999CP
Grade Level	9-12

SOC Codes (all applicable)	--				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8800410	Marketing Cooperative Education OJT	Multiple Credits	--	2	--

Program: Marketing Education Directed Study

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Marketing, Sales and Service career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Marketing, Sales and Service career cluster.

The purpose of this course is to provide students with learning opportunities in a prescribed program of study within the Marketing, Sales and Service cluster that will enhance opportunities for employment in the career field chosen by the student.

Program Number	8800100				
CIP Number	0208999903				
Grade Level	11-12				
SOC Codes (all applicable)	--				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8800100	Marketing Education Directed Study	Multiple Credits	--	2	--

Additional CTE Programs/Courses

CAREER CLUSTER: ADDITIONAL CTE PROGRAMS/COURSES

Diversified Education is a cooperative education program for students that offers career guidance, occupational work experience and coursework in employability skills. It utilizes a cooperative partnership between schools, businesses, and parents to prepare students for future employment and careers.

Industry Certifications: Dependent on job placement

Program: Cooperative Diversified Education – OJT

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in Diversified Education; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Diversified Education cluster.

Each student job placement must be related to the job preparatory program in which the student is enrolled or has completed.

The purpose of this course is to provide the on-the-job training component when the cooperative method of instruction is appropriate. Whenever the cooperative method is offered, the following is required for each student: a training agreement; a training plan signed by the student, teacher and employer, including instructional objectives; a list of on-the-job and in-school learning experiences; a workstation which reflects equipment, skills and tasks which are relevant to the occupation which the student has chosen as a career goal; and a site supervisor with a working knowledge of the selected occupation. The workstation may be in an industry setting or in a virtual learning environment. The student must be compensated for work performed.

The teacher/coordinator must meet with the site supervisor a minimum of once during each grading period for the purpose of evaluating the student's progress in attaining the competencies listed in the training plan.

Cooperative Diversified Education - OJT may be taken by a student for one or more semesters. A student may earn multiple credits in this course. The specific student performance standards which the student must achieve to earn credit are specified in the Cooperative Education - OJT Training Plan.

Program Number	8300420				
CIP Number	10988620CP				
Grade Level	9-12, 30, 31				
SOC Codes (all applicable)	--				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8300420	Cooperative Diversified Education - OJT	Multiple Credits	--	2	--

Program: Diversified Education Directed Study

The purpose of this course is to provide students with learning opportunities in a prescribed program of study within Diversified Education that will enhance opportunities for employment in the career field chosen by the student.

Program Number	8300100				
CIP Number	1098999901				
Grade Level	11-12, 30, 31				
SOC Codes (all applicable)	--				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8300100	Diversified Education Directed Study	1 credit – Multiple credits	--	2	--

Program: Career and Technical Education Internship

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of career education. This program offers a broad foundation of knowledge and skills to prepare students for employment in the selected occupational area.

The purpose of this course is to provide students with the opportunity to gain practical, first-hand knowledge in broad occupational clusters or industry sectors through a structured internship experience. This internship is designed to give students an opportunity to integrate occupational and applied academic learning and to apply knowledge and skills learned in a classroom to actual work situations not generally available through paid employment.

To enroll in the internship, a student must be currently enrolled in or has completed a career course/program (including Technology Education). Students will be allowed a maximum of 450 total hours at the workplace-learning site, regardless of the number of credits earned.

Program Number	8300430				
CIP Number	10988630CP				
Grade Level	9-12, 30, 31				
SOC Codes (all applicable)	--				
Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
8300430	Guided Workplace Learning (Internship)/Career and Technical Education Internship	Multiple Credits	--	2	--

