


# 2025-2026

## Index of Completers

## Graduation Requirements

The Represents Completers offered in Carroll County Public Schools.
Not all Completers listed within are offered at Liberty High School.

# The High School Program of Studies

# and
# Career Pathways Planning Guide

**Introduction**

The Board of Education of Carroll County and professional staff recognize the need for students and parents to plan a high school program that enables each student to fulfill the Maryland State Graduation requirements in a manner that provides for individual interests, needs, and career goals.

It is also recognized that every student is on a pathway to a career - whether in the near or distant future. But how does a student get there, and will he or she be properly prepared? Has the student selected an education career plan suited to his or her interests and abilities? Will the student be able to enter a chosen career directly after high school, or will he or she need further training and/or higher education? These are all important questions for the student to consider before entering the highly competitive and technical workforce of the 21st century.

The **Pathways To Careers** program provides the direction needed to answer these questions. This innovative program is an integral part of the Carroll County School Improvement Plan and has been developed to accommodate all students in the school system. Consisting of ten different career clusters the **Pathways To Careers** program:

- helps students in making career decisions.
- identifies how specific courses correspond to specific careers.
- improves students' skills and increases their potential for employability and further training and education.

**Pathways To Careers prepares students to create a career plan which:**

- allows them to move between job and further education.
- helps them to understand and have knowledge of a variety of jobs within a career field.
- creates awareness of training and educational opportunities.
- provides opportunity for training, re-training and further education.
- includes on-the-job experience.

To aid in planning a four-year course of study, this publication also includes a comprehensive list of all course offerings available to students. It is strongly recommended that students, parents, teachers, counselors, and administrators communicate openly in the planning and course selection process.

It is important to note that "No person will be denied admission to any school or to any program or course of study in Carroll County Public Schools on the basis of race, color, national origin, sex, religion, or handicap." Any student or parent having inquiries regarding the application of these rights should contact the school principal or the Director of Student Services, 125 North Court Street, Westminster, Maryland 21157, telephone 410-751-3123*

Not all programs and courses may be available at all schools.

**Board of Education Policy JFA – Approved November 14, 1979*

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# Getting Started

## Career Clusters

Groups of occupational areas which are related to one or more of the four (4) work task areas.

## Work Task Areas

Four identified areas: people, data, things, ideas. These are matched to a student's interest, abilities, and preferences.

## Career Pathways

Include specific education, work and career choices.

## Completer Program

A specified sequence of courses for a career pathway in a Career and Technical Education (CTE) completer program. All completer programs are approved by the Maryland State Department of Education (MSDE) and completion of the required CTE credits meets MSDE high school graduation requirements. All CTE programs offer a value-added component which may include college credits, industry certification or both.

## Articulated and Transcripted Programs

A specified sequence of courses (Completer Program) that can be applied toward credits or advanced standing at a particular college or technical school.

## Apprenticeship Maryland Program

The goal of Apprenticeship Maryland is to create compensated, high quality youth apprenticeships that prepare students to enter employment in high-skilled, high growth sectors in manufacturing and STEM occupations such as healthcare, biotechnology, information technology, construction and design, and banking and financing. The Apprentice Maryland program offers students paid opportunities to join the workforce while in school and pursue their career interests.

## Career Majors

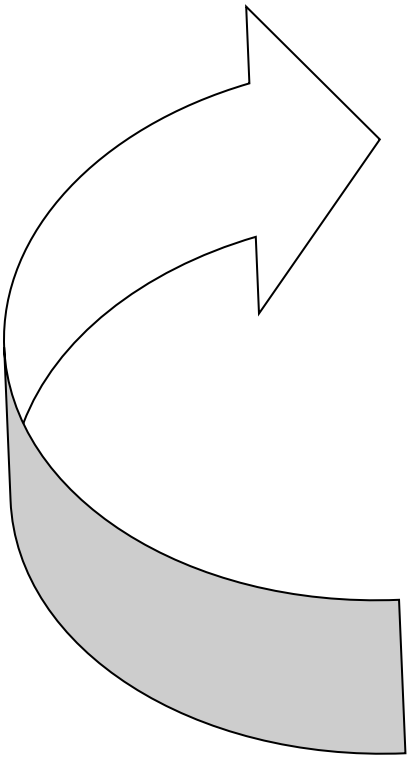
Course sequences within a specific career cluster and pathway which enable a student to work toward a career option not addressed by a CTE completer program. A minimum of three (3) credits of specified cross curricular course work constitutes a career major.

## Naviance®

A comprehensive college and career readiness platform that helps students create connections between their goals, strengths, and interests, and success after high school. All high school students have a Naviance® account and full access to tools and information that will enhance their high school educational planning and support their preparation for college and career entry.

# How To Use This Book

**The High School Planning Guide can be used throughout a student's high school years. Students can make maximum use of the included information by following the steps below. These steps can be repeated and revisited as often as needed.**



- Login to Naviance to access and complete the career surveys and tasks identified by your school counselor. Use a career interest survey to help identify your interests and skills and the career cluster area in which they are located (Arts, Business Contact, Business Operations, Science, Social Services, Technical).
- Find the completer program or career major in your preferred cluster that most closely matches your career interests and skills in the first half of this book, The Pathways To Careers.
- Look up course descriptions in the Program of Studies section in the second half of this book.
- Develop and follow your Education Career Plan **(sample on page 8)** to include the required courses for either a completer program or career major in addition to career specific electives that are of interest to you.
- Use the course selection guideline grid, which includes blank areas, as you plan when you would schedule specific courses.
- Consider transition activities, such as work-based learning or articulated and transcripted credits (college credit for high school work) that are related to specific completer programs.

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## Sample Educational Career Plan

| ***Subject Area (credits required)*** | ***Completed in 7th/8th Grade*** | ***CR*** | ***9th Grade*** | ***CR*** | ***10th Grade*** | ***CR*** | ***11th Grade*** | ***CR*** | ***12th Grade*** | ***CR*** |
|---|---|---|---|---|---|---|---|---|---|---|
| English (4) | | | | | | | | | | |
| Social Studies (3) | | | | | | | | | | |
| Science (3) | | | | | | | | | | |
| Mathematics (4) | | | | | | | | | | |
| Physical Education (1) | | | | | | | | | | |
| Health Education (1) | | | | | | | | | | |
| Technology Education (1) | | | | | | | | | | |
| Financial Literacy (.5) | | | | | | | | | | |
| Visual and Performing Arts (1) | | | | | | | | | | |
| Alternatives for Meeting Graduation Requirements (page 12) | | | | | | | | | | |
| World Language (2) | | | | | | | | | | |
| Or | | | | | | | | | | |
| American Sign Language (2) | | | | | | | | | | |
| Or | | | | | | | | | | |
| CTE Completer Program (3-9) | | | | | | | | | | |
| Electives (4.5-12) | | | | | | | | | | |
| 25 Total Credits Required | 7th/8th Grade→ | | 9th Grade→ | | 10th Grade→ | | 11th Grade→ | | 12th Grade→ | |

Please refer to the following when planning: Graduation Requirements; Maryland State Colleges and Universities Admission Requirements; Rigorous High School Program; Dual Completer.

This sample plan is intended to be used by parents and students for pre-planning purposes. An official Educational Career Plan will be completed in collaboration with your high school counselor.

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# Graduation Requirements for Class of 2025 and Beyond

**Credit Requirements**: A minimum of 25 credits must be earned to meet graduation requirements. Many of these credits are required in specific areas as outlined in the chart below.

**NOTE: This chart may be subject to change pending any State (MSDE) revisions to graduation requirements.**

| Subject | Required Credits | Required Courses |
|---|---|---|
| **English** | 4 | -English 9 **or** English 9: Pre-AP 2<br>-English 10 ***or*** English 10: AP Seminar<br>-English 11 ***or*** AP Language and Composition ***and/or*** AP Seminar<br>-English 12 ***or*** AP Literature and Composition ***and/or*** AP Research* (AP Seminar ***or*** AP Language and Composition may be taken, as well) |
| **Social Studies** | 3 | -Government ***or*** AP United States Government and Politics<br>-United States History ***or*** AP United States History<br>-World History ***or*** AP World History |
| **Science** | 3 | -Conceptual Physics or AP Physics 1<br>-Chemistry of Earth and Space Science<br>-Biology |
| **Mathematics** | 4<br><br>All students must enroll in a mathematics course each year of high school. | -Algebra I<br>-Geometry<br>-Other credits must be 1 credit in duration and may be selected from the Program of Studies Mathematics course offerings. |
| **Physical Education** | 1 | -Physical Education I (½ credit)<br>-½ credit of any other Physical Education course to fulfill 1 credit graduation requirement. |
| **Health** | 1 | -Health I<br>-Health II |
| **Visual and Performing Arts** | 1 | -Completed credit in any Visual and Performing Arts course may be applied to the state Fine Arts graduation requirements unless otherwise indicated. |
| **Technology Education** | 1 | -Foundations of Technology ***or*** Exploring Computer Science ***or*** Principles of Engineering (part of Project Lead the Way completer program), ***or*** AP Computer Science Principles. |
| **Graduation Pathway:**<br>• **World Language**<br>• **Or American Sign Language**<br>• **Or State Approved Career and Technical Education Completer Program** | <br>2<br>2<br>3 - 9 | <br>-2 credits of the same World Language<br>-American Sign Language I, II, and III (for 2 credits total)<br>-See Completer Programs in the Program of Studies. |
| **Financial Literacy** | ½ | -Financial Literacy ***or***<br>-Managing Personal Finances Using Excel (1 credit) |
| **Electives** | 4 ½ - 12 | |
| **Total Credits Required** | 25 | |

*Students who earn scores of 3 or higher in AP Seminar *and* AP Research receive the AP Seminar and Research Certificate™. Students who *also* earn scores of 3 or higher on four additional AP exams at any time in high school receive the AP Capstone Diploma™.

**Notes**

- Credit will be awarded for high school courses completed successfully in middle school.
- Students who successfully complete high school level mathematics courses prior to high school can count the earned credits toward their requirement but still need to be enrolled in a mathematics course in each year of high school.

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**Student Service-Learning Requirement**

The state mandated 75 hours of service-learning requirement may be met by completing the course-related option and/or the exemplary service option. Students must earn 55 service hours to earn senior status. Additional information can be found on the CCPS Service-Learning page.

**Additional Requirements**

- Four years of approved study beyond grade 8.
- Four credits must be earned after the completion of grade 11.
- Students must meet the High School Assessment requirements for Algebra I, English 10, Biology, and Government. Testing requirements and passing scores vary based on the year of course completion. Details related to each content area are provided below.
- All students shall be assessed no later than grade 10 to determine if the student meets the Maryland State Department of Education criteria for College and Career Readiness in English Language Arts and Mathematics.
- Transition courses or other instructional opportunities will be provided to students who have not achieved College and Career Readiness by the end of grade 10. Additional information about College Career Readiness can be found at College + Career Readiness – Blueprint (marylandpublicschools.org).

**High School Assessment Requirements**

**NOTE: These assessment requirements may be subject to change pending any State (MSDE) revisions or requirements.**

Algebra I

- Students taking Algebra I will be required to participate in the Maryland Comprehensive Assessment (MCAP) for Algebra I and pass the Algebra I course to meet the graduation requirement.

English 10

- Students taking English 10 or English 10: AP Seminar will be required to participate in the MCAP for English Language Arts / Literacy (ELA/L) and pass the English 10 or AP Seminar course to meet the graduation requirement.

Biology

- Students in the 2025 and 2026 graduating classes taking Biology will be required to participate in the Life Science Maryland Integrated Science Assessment (LS MISA) to meet the graduation requirement.
- Students in the class of 2027 and beyond will be required to take the Life Science Maryland Integrated Science Assessment (LS MISA) for science as an end-of-course exam in Biology. The score will count for twenty percent of their final grade.

Government

- Students in the 2025 and 2026 graduating classes taking Government or AP US Government and Politics will be required to participate in the MCAP Government assessment to meet the graduation requirement.
- Students in the class of 2027 and beyond will be required to take the MCAP Government assessment as an end-of-year course exam in Government or AP Government and Politics. The score will count for twenty percent of their final grade.

## College and Career Readiness Determination

As part of the Blueprint for Maryland's Future, each student shall be assessed no later than the 10th grade by a method adopted by the State Board to determine whether the student meets the College and Career Readiness (CCR) standard required. During the January 23, 2024, the State Board adopted a new College and Career Readiness (CCR) Standard, as required by the Blueprint for Maryland's Future. The newly adopted CCR Standard offers students two options for meeting the CCR Standard, which is provided below. Students who do not meet the standard by the end of the 10th grade will participate in a CCR Support Pathway, providing them with individualized coordinated support to help them meet the CCR standard before they graduate from high school.

Option 1:

Score proficient or above on the ELA 10 MCAP; **and**
Algebra I MCAP Assessments.

Option 2:

Earn a high school unweighted grade point average (GPA) of 3.0 or higher; **and**
Earn grade of A, B, or C in Algebra I; **or**
Score proficient or above on Algebra I MCAP.

*All College and Career Readiness Standards are subject to change based upon the Maryland State Department of Education.

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# Carroll County Public Schools
# Alternatives for Meeting Graduation Requirements

In order to receive a diploma from Carroll County Public Schools, students must complete one of the following alternatives as a graduation requirement. Every course may not be available at all schools.

**Alternative 1**

Two credits of a single world language. The following courses may be used to satisfy this requirement:

| | |
|---|---|
| ESOL I, II, III, IV<br>French I, II, III, IV, AP<br>German I, II, III, IV, AP | Latin I, II, III, IV, AP<br>Spanish I, II, III, IV, AP<br>American Sign Language I, II, III, IV |

**Alternative 2**

Complete a State-approved Career and Technical Education (CTE) completer program. The following programs, which consist of an approved, designated sequence of courses, may be used to satisfy this requirement:

| Program | Location | Credits |
|---|---|---|
| Academy of Health Professions | Carroll County Career & Technology Center (CCCTC) | 4 |
| Accounting | All High Schools | 4 |
| Applied Mechanical Engineering | CCCTC | 6 |
| Apprenticeship | All High Schools | 4 |
| Auto Service Technology | CCCTC | 6 |
| Biomedical Sciences (Project Lead The Way) | CCCTC | 4 |
| Building Maintenance | CCCTC | 4 |
| Business Administration and Management- | All High Schools | 4 |
| Career Research & Development | Gateway School and Flexible Student Support | 4 |
| Carpentry | CCCTC | 6 |
| CASE Agricultural Science – Animal | All High Schools | 4 |
| CASE Agricultural Science – Plant | All High Schools | 4 |
| CASE Natural Resources | All High Schools | 4 |
| Child Development and Early Education | All High Schools | 4 |
| Cisco Networking Academy (Cyber Security and Cyber Operations) | CCCTC | 6 |
| Collision Repair Technology | CCCTC | 6 |
| Computer Science | All High Schools | 3 |
| Cosmetology | CCCTC | 9 |
| Culinary Arts | CCCTC | 6 |
| Digital Fabrication and Manufacturing | All High Schools | 3 |
| Drafting | CCCTC | 6 |
| Education – Teacher Academy of Maryland | Combination - All High Schools and CCCTC | 4 |
| Electrical Construction | CCCTC | 6 |
| Engineering (Project Lead The Way) | CCCTC | 5 |
| Financial Services (Academy of Finance) | Combination – All High Schools | 5 |
| Heavy Equipment and Truck Technology | CCCTC | 6 |
| Homeland Security and Emergency Preparedness: Criminal Justice/Law Enforcement | CCCTC | 4 |
| Homeland Security and Emergency Preparedness: Geographic Information Systems & Technology | CCCTC | 4 |
| Hospitality and Tourism Management | All High Schools | 3 |
| HVAC | CCCTC | 6 |
| Interactive Media Production | All High Schools and CCCTC | 4 |
| Army Junior Reserve Officer Training Corps (JROTC) | Combination – All High Schools | 3 |
| Marketing | All High Schools | 4 |
| Masonry | CCCTC | 6 |
| Print Production (Print Ed) | Combination: All High Schools and CCCTC | 4 |
| Textiles and Fashion Careers | CCCTC | 6 |
| Video Production | Combination: All High Schools and CCCTC | 4 |
| Welding Technology | CCCTC | 6 |

# CAREER AND TECHNICAL EDUCATION (CTE)

PREPARES STUDENTS TO BE CAREER AND COLLEGE READY

Students who graduate from CTE programs are prepared and confident to participate in the work force and post-secondary education.

**CAREER READY** students have the knowledge, skills, and career experience to be successful in the modern day, competitive, workforce. CTE students have opportunities to earn industry certifications through technical skill testing and/or valuable program affiliations with professional organizations. CTE programs require industry-based curriculum, industrial grade equipment, specific teacher credentials, and regular program monitoring by industry experts. In addition, program staff regularly meet with local businesses and colleges/post-secondary education institutions to make sure CTE programs provide students with the knowledge, skills, and experiences necessary to be successful in their chosen field. As a culminating experience, students who complete a CTE pathway may be eligible to enroll in a career related internship. These internships blend academic and technical knowledge and skills with the real work experiences and career ready practices necessary for students to thrive in today's workplace.

**COLLEGE READY** students are prepared for the rigors of post-secondary education. Through extensive partnerships CTE students can earn college credits while still in high school (see table that follows). CCPS works with colleges to annually review CTE curricula and competencies to ensure alignment with college standards and expectations. Students can earn articulated credits for which they must meet certain criteria and enroll in the specific college/university. In some cases, students earn transcripted credit (noted below with an*); credits awarded that transfer to other colleges/universities.

| CAREER PATHWAY | PROGRAM | AREAS OF CERTIFICATION/PROFESSIONAL AFFILIATION | COLLEGE/UNIVERSITY | COLLEGE CREDITS |
|---|---|---|---|---|
| ARTS, MEDIA COMMUNICATION | Interactive Media Production | College credit earned on a transcript through Carroll Community College* | Carroll Community College | 3 |
| | Print Production | PrintED - Graphic Arts Education & Research Foundation (GAERF)<br>• Graphic Communications<br>• Digital File Preparation/Digital File Output | Bridgemont Community Technical College<br>Carroll Community College<br>Montgomery Community College | 16<br>3<br>4 |
| | Video Production | Partners with the Community Media Center (with state-of-the-art HD cameras and Final Cut Pro professional editing software) | Art Institute<br>Stevenson University | 4<br>3 |
| BUSINESS MANAGEMENT & FINANCE | Accounting | College credit earned on a transcript for ACCT 101 through Carroll Community College* | Carroll Community College<br>Frederick Community College | 3*<br>3 |
| | Business Administration & Management | College Board:<br>• CLEP Exam-College Level Exam Program | Community College of Baltimore Co.<br>Fredrick Community College | 9<br>6 |
| | Financial Service Academy of Finance | National Academy Foundation (Model Academy)<br>• NAF Certification<br>Dual Completion with Financial Management Course<br>• FN215 at Carroll Community College | Frederick Community College<br>Carroll Community College (ACCT 101; FN 215) | 12<br>6* |
| | Marketing | CLEP Exam-College Level Exam Program Credit | Community College of Baltimore County | 6 |
| CONSTRUCTION & DEVELOPMENT | Building Maintenance | NCCT© Academic Core v2<br>OSHA-10 Certified | | |
| | Carpentry | OSHA-10 Certified<br>NCCT© Academic Core v2, plus<br>• NCCT Academic Carpentry<br>• NCCT Academic Electrical Construction<br>• NCCT Academic HVAC<br>• NCCT Academic Masonry<br>National Registry (NCCER)<br>Associated Builders & Contractors Apprenticeship | Community College of Baltimore Co.<br>Pennsylvania College of Technology | 6<br>Up to 9 |
| | Electrical Construction | | Community College of Baltimore County<br>Frederick Community College<br>Pennsylvania College of Technology | 6<br>7<br>TBD |
| | HVAC | | Community College of Baltimore Co.<br>Frederick Community College<br>Pennsylvania College of Technology<br>University of Northwestern Ohio | 22<br>10<br>Up to 12<br>6 |
| | Masonry | | Community College of Baltimore County<br>Pennsylvania College of Technology | 6<br>Up to 9 |

| Career Pathway | Program | Areas of Certification/Professional Affiliation | College/University | College Credits |
|---|---|---|---|---|
| Consumer Services & Hospitality | Culinary Arts/Professional Cook | American Culinary Federation© (ACF)-<br>• Culinary Arts<br>• Retail Commercial Baking Restaurant Association of Maryland<br>ServSafe©- Food manager | Anne Arundel CC<br>Culinary Institute of America<br>Fredrick Community College<br>Pennsylvania College of Technology<br>Stratford University | 3<br>3<br>6<br>TBD<br>18 |
| | Culinary Arts/Baking & Pastry | | | |
| | Food Service & Hospitality Management | Restaurant Association of Maryland<br>• ServSafe©- Food manager | Paul Smith's College | 6 |
| | Cosmetology | Maryland Board of Cosmetology Exam/Certification:<br>• Cosmetologist License<br>• 1500 clinical hours | | |
| | Textiles & Fashion Careers | Garment Studio Construction©-college level fashion curriculum | Stevenson University | 3 |
| Environmental, Agriculture & Natural Resources | Agricultural Sciences (CASE)- Option 1: Animal Option 2: Plant | Curriculum for Agricultural Sciences Education (CASE)<br>UMD-Institute of Applied Agriculture (Portfolio Review) | Community College of Baltimore Co.<br>Rutgers<br>University of Maryland | 2-3<br>4.5<br>3 |
| | Option 3: Natural Resources | Curriculum for Agricultural Sciences Education (CASE) | Allegany College<br>Rutgers | 2+<br>3 |
| Health & Biosciences | Academy of Health Professions: Pre-Nursing | Maryland State Board of Nursing Certifications:<br>• Certified Nursing Assistant (CNA),<br>• Geriatric Nursing Assistant (GNA),<br>• Medical Assistant Certification (CCMA),<br>• Certified Pharmacy Tech (CPhT)<br>• CPR Certification | Carroll Community College<br>Community College of Baltimore Co.<br>Frederick Community College<br>Pennsylvania College of Technology<br>Stevenson University | TBD<br>3<br>10<br>TBD<br>4 |
| | Academy of Health Professions: Physical Rehabilitation | Partners with local sports medicine and physical rehabilitation organizations | Carroll Community College | 3 |
| | Biomedical Sciences-Project Lead the Way© | Certified by Project Lead the Way©<br>Credit earned on a transcript* | Carroll Community College<br>Frederick Community College<br>Indiana University of PA<br>Missouri University of Science & Tech<br>Stevenson University | 3<br>14<br>12<br>12*<br>8* |
| Human Resources Services | Child Development and Early Education | Praxis: Core or Praxis: ParaPro<br>99-hour childcare certificate<br>Partner with local childcare centers and elementary schools to provide qualified students with internships in their senior year | Carroll Community College<br>Frederick Community College<br>Stevenson University | 6<br>6<br>6 |
| | Homeland Security and Emergency Preparedness: Criminal Justice | College credit earned on a transcript for CRIM 101 through Carroll Community College* | Carroll Community College<br>Frederick Community College<br>University of Maryland, University College | 3*<br>3<br>3 |
| | Homeland Security & Emergency Preparedness: Geographical Information Systems Technology | Geographic Information Systems Spatial Technology and Remote Sensing (S.T.A.R.S.) Certification<br>College credit earned on a transcript from Harrisburg U.* | Community College of Baltimore Co.<br>Frederick Community College<br>Harrisburg University | 3<br>3<br>3* |
| | Teacher Academy of MD | Praxis: Core or Praxis: ParaPro<br>Qualifying students participate in CCPS middle school-based internships | Bowie State, Carroll Community College, Community College of Baltimore County, Coppin State, Frederick Community College, Frostburg, Hood College, Morgan State, Salisbury, St. Mary's, Stevenson, Towson | 3 (for each) |

| Career Pathway | Program | Areas of Certification/Professional Affiliation | College/University | College Credits |
|---|---|---|---|---|
| Information Technology | Cisco Networking Academy©: Cybersecurity<br><br>Cyber Operations | Cisco© Systems:<br>• Cisco Certified Network Associate (CCNA)<br>o Routing & Switching<br>o Network Security<br>• Cisco Certified Network Associate (CCNA)<br>o Cyber Operations<br>• LPI Linux Essentials<br>• Certified Associate in Python Programming (PCAP) | Carroll Community College<br>Community College of Baltimore Co.<br>Frederick Community College<br>Pennsylvania College of Technology | TBD<br>16<br>18<br>TBD |
| | Computer Science | College Board: AP Computer Science A; AP Computer Science Principles | Carroll Community College | 3 |
| Manufacturing, Engineering & Technology | Digital Fabrication & Manufacturing | College credit earned on a transcript for DFAB 101* | Carroll Community College | 3* |
| | Drafting | AutoCAD© Certification Test | Community College of Baltimore Co.<br>Frederick Community College<br>Pennsylvania College of Technology | 6<br>6<br>TBD |
| | Engineering-Project Lead the Way© | Certified by Project Lead the Way©<br>Credit earned on a transcript* | Community College of Baltimore Co.<br>Frederick Community College<br>Pennsylvania College of Technology<br>Rochester Institute of Technology*<br>University of MD, Baltimore Co.<br>University of MD, Eastern Shore | 6<br>3<br>TBD<br>12<br>3<br>6 |
| | Applied Mechanical Engineering | National Institute of Metal Working Skills (NIMS©):<br>• Measurement, Materials, and Safety, Job Planning,<br>• Benchwork and Layout; other certifications, optional for qualified students | Community College of Baltimore County<br>Pennsylvania College of Technology | 17<br>TBD |
| | Welding Technologies | American Welding Society (AWS) certification<br>National Registry (National Center for Construction Education and Research (NCCER))<br>• NCCT© Academic Core v2<br>OSHA-10 Certified | Fredrick Community College<br>Pennsylvania College of Technology | 13<br>TBD |
| Transportation Technologies | Automobile Service Technology | The National Institute for Automobile Service Excellence (ASE©)<br>• Brakes<br>• Maintenance & Light Repair<br>• Electrical/ Elec. Systems<br>• Engine Performance<br>• Suspension/Steering | Community College of Baltimore Co.<br>Montgomery Community College<br>Pennsylvania College of Technology<br>Universal Technical Institute<br>University of Northwestern Ohio | 5<br>7<br>Up to 15<br>Up to 4<br>Up to 12 |
| | Collision Repair Technology | The National Institute for Automobile Service Excellence (ASE©)<br>• Non-Structural Analysis & Damage Repair<br>• Painting & Refinishing<br>• Structural Analysis & Damage Repair | Pennsylvania College of Technology | Up to 18 |
| | Heavy Equipment & Truck Technology | The National Institute for Automobile Service Excellence (ASE©)<br>• Brakes<br>• Diesel Engines & Light Repair<br>• Electrical / Electronic. Systems<br>• Suspension / Steering | Pennsylvania College of Technology<br>Universal Technical Institute<br>University of Northwestern Ohio | Up to 6<br>Up to 4<br>Up to 12 |

***Mission of Career and Technical Education (CTE) in Carroll County Schools***

*The mission for the system of CTE for Carroll County is to prepare learners to begin careers and pursue lifelong learning through a process of career development, academic instruction, specific technical skills development, and work experience in order to meet the workforce preparation and economic development needs of Carroll County, the region, and the global economy.*

## Carroll County Public Schools

# Career Pathways




2024-2025

**Links below**

- ARTS, MEDIA, & COMMUNICATION CLUSTER
- BUSINESS MANAGEMENT & FINANCE CLUSTER
- CONSTRUCTION & DEVELOPMENT CLUSTER
- CONSUMER SERVICES, HOSPTITALITY & TOURISM CLUSTER
- ENVIRONMENTAL, AGRIULTURE & NATURAL RESOURCES CLUSTER
- HEALTH & BIOSCIENCES CLUSTER
- HUMAN RESOURCE SERVICES CLUSTER
- INFORMATION TECHNOLOGY CLUSTER
- MANUFACTURING, ENGINEERING, & TECHNOLOGY CLUSTER
- TRANSPORTATION TECHNOLOGIES CLUSTER
- CAREER RESEARCH AND DEVELOPMENT CLUSTER

# Arts, Media, and Communication

**Unlock Your Creativity**

- **Work Involved**: Expressing creative talent, designing, performing arts, photography, graphic arts, and media production.

- **Pathways**:
  - Applied Arts-Visual
  - Creative and Performing Arts
  - Applied Arts-Written and Spoken
  - Creating, producing, and distributing media content

- **Considerations**:
  - Love for art, music, theater, and creative expression.
  - Enjoy imaginative and unstructured environments.
  - Value aesthetics and artistic qualities.

- **Ideal for**:
  - Those who enjoy original thinking and creative communication.

- **Related Careers:**
  - Graphic Designer
  - Journalist
  - Public Relations Specialist
  - Photographer
  - Animator
  - Video Producer
  - Sound Engineer

Arts, Media, and Communication

Back to Career Clusters

## COMPLETER: Interactive Media Production — CREDITS: 4

| **Related Careers:** Multimedia Artists and Animator, Video Game Designer, Audio – Visual Equipment Technician, Technology Project Managers, Film and Video Editors, Advertising and Promotions Manager, Search Marketing Strategist, Producer, Art Director | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** (4 minimum credits) | | Honors Principles of Art, Media, and Communication (1) | Honors Interactive Multimedia Production (1) | Advance Interactive Multimedia Production (2) or Advanced Simulation and Gaming (2) |
| **Career Specific Enrichment Courses** | AP Computer Science Principles (1), Honors Digital Design in Photography(1), Honors Digital Media and Design (0.5-1), Journalistic Writing (0.5), Honors Marketing (1), Principles of Business Administration and Management (1), Public Speaking (0.5), AP Studio 2D Design Art (1), Theatre I, II, III (0.5-1.5), Honors Career Related Internship (1-3) | | | |
| **Certification and College Credit Opportunities** | Pending | | | |

## COMPLETER: Print Production — CREDITS: 4

| **Related Careers:** Print Production Specialist, Print Production Manager, Graphic Designer, Photojournalist, Print Binding & Finishing Worker, Art Director, Software Designer, Package Designer, Digital Animator, Web Designer, 3D Graphics Engineer, Advertising & Promotions Manager. | | | | |
|---|---|---|---|---|
| **Grade →** | **9** | **10** | **11** | **12** |
| **Completer Program Requirements (4 minimum credits)** | | | Honors Principles of Art, Media, and Communication (1) or Honors Digital Media and Design (1) | Print Production (3) |
| **Career Specific Enrichment Courses** | Honors Art (0.5-1), Journalistic Writing (0.5), Newspaper production (0.5-1), Principles of Business Administration and Management (1), Public Speaking (0.5), AP Studio Art (1), AP Studio Art: 2D Art (1), Theatre I, II, III (0.5-1.5), Honors Career Related internship (1-3) | | | |
| **Certification and College Credit Opportunities** | Certification: Graphic Communications and Digital File Preparation/Digital File Output (Print Ed)<br>3 Articulated Credits: Carroll Community College – Computer Graphics<br>4 Articulated Credits: Montgomery College – Desktop Publishing | | | |

## COMPLETER: Video Production — CREDITS: 4

| **Related Careers:** Film & Video Editor, Audio & Video Equipment Technician, Camera Operator for Television, Video & Motion Picture, Broadcast & Sound Engineer, Producer, Director, Art Director | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** (4 minimum credits) | | | Honors Principles of Art, Media, and Communication (1) or Honors Digital Media and Design (1) | Video Production (3) |
| **Career Specific Enrichment Courses** | Creative Writing (0.5), Drama I, II, III (0.5-1.5), Honors Art (0.5-1), Journalistic Writing (0.5), AP Lit and Lang (1), Principles of Business Administration and Management (1), Psychology I or Honors Psychology (1), Public Speaking (0.5), AP Studio Art (1), Honors Career Related Internship (1-3) | | | |
| **Certification and College Credit Opportunities** | 3 Articulated Credits: Stevenson University – Film & Moving Image | | | |

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# Business Management and Finance

**Lead and Innovate**

- **Work Involved**: Sales campaigns, financial system design, business operations, record-keeping, and customer interactions.

- **Pathways**:
  - Honors Marketing and Sales
  - Management and Planning
  - Records and Communication
  - Financial Transactions

- **Considerations**:
  - Interest in numbers, data, and making decisions.
  - Ability to work independently in well-ordered environments.

- **Ideal for**:
  - Those with strong math skills and a knack for organization.

- **Related Careers**
  - Financial Analyst
  - Accountant
  - Marketing Manager
  - Human Resources Manager
  - Business Consultant
  - Entrepreneur
  - Investment Banker

## COMPLETER: Accounting **CREDITS: 4**

| **Related Careers:** Accountants & Auditors, Financial Analyst, Credit Counselor, Tax Preparer, Bill & Account Collector, Bookkeeper, Budget Analyst, Loan Officer, Fraud Examiner & Analyst, Accounts Payable/Receivable | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements (4 minimum credits)** | | Principles of Business Administration and Management (1) | Honors Accounting I (1) Accounting II (1) | Honors Business Education Capstone (1) or Career Related Honors Career Related Internship (1) or Dual Enrollment – (see your counselor) or AP Macroeconomics (1) |
| **Career Specific Enrichment Courses** | **Recommended: Managing Personal Finance with Excel (1)** AP Statistics, Business Communications & Keyboarding (1), Business Law (1), Honors Economics (.5) | | | |
| **Certification and College Credit Opportunities** | 3 Transcripted Credits: Carroll Community College – ACCT 101 | | | |

## COMPLETER: Business Administration and Management **CREDITS: 4**

| **Related Careers:** General Operations Manager, Database Administrator, Administrative Services Manager, Business Operations Specialist, Business Teacher, Business Continuity Planner, Human Resources Specialist, Credit Counselor, Bill & Account Collector | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements (4 minimum credits)** | | Principles of Business Administration and Management (1) | Honors Accounting I (1) Advanced Business Management (1) | Honors Business Education Capstone (1) or Career Related Honors Career Related Internship (1) or Dual Enrollment (see your counselor) or AP Macroeconomics (1) |
| **Career Specific Enrichment Courses** | **Recommended: Managing Personal Finance with Excel (1)** AP Statistics (1), Accounting II (1), AP Psychology (1), Business Law (1), Issues in American Society (.5), Psychology (1 – Acad, Hon, or AP), Sociology (.5), Business Communications & Keyboarding (1) | | | |
| **Available College Credits and Certifications:** | 3 Transcripted Credits: Carroll Community College BUAD 101 | | | |

## COMPLETER: Financial Services - NAF Endorsement CREDITS: 5-7

**Related Careers:** Financial Advisor, Financial Manager, Treasurer, Comptroller, Budget Analyst, Real Estate Broker or Agent, Brokerage Clerks, Bank Teller, Insurance Agent, Operational Manager, Chief Financial Officer, Chief Compliance Officer

| Grade → | 9 | 10 | 11 | 12 |
|---|---|---|---|---|
| **Completer Program Requirements (5 minimum credits)** | | | Honors Accounting I (1)<br>Honors Finance Academy I (1)<br>Accounting II (1) (with AOF cohort) | Honors Finance Academy II (1) **AND**<br>Honors Academy of Finance Career Related Internship (1) **OR**<br>Honors Career Related Internship (1) |
| **Additional Requirements for NAF Endorsement (2 additional credits)** | | Managing Personal Finance Using Excel (1) (meets Financial Literacy requirement) | | Dual Enrollment Course FN 215 Principles of Financial Management (1) |
| **Career Specific Enrichment Courses** | AP Macroeconomics (1), AP Statistics (1), Business Communications & Keyboarding (1), Principles of Business Administration and Management (1), Business Law (1), Honors Economics (.5) | | | |
| **Certification and College Credit Opportunities** | 3 Transcripted Credits: Carroll Community College – ACCT 101<br>3 Dual Enrollment Credits: Carroll Community College – FN 215 (with AOF cohort) | | | |

## COMPLETER: Marketing CREDITS: 4

**Related Careers:** Social Media Marketing Coordinator, Wholesale & Retail Buyer, Marketing Executive Manager or Assistant Energy Broker, Public Relations Specialist, Business Intelligence Analyst, Advertising & Promotions Manager, Commercial & Industrial Designer, Insurance Sales Agent, Sales Representative, Purchasing Agent

| Grade → | 9 | 10 | 11 | 12 |
|---|---|---|---|---|
| **Completer Program Requirements (4 Minimum credits)** | | Principles of Business Administration and Management (1) | Honors Accounting I (1)<br>Honors Marketing (1) | Advanced Marketing (1) |
| **Career Specific Enrichment Courses** | ❖**Recommended: Managing Personal Finance with Excel (1), AP Statistics (1), AP Macroeconomics (1)**<br>Advanced Business Management & Administration (1), Honors Principles of Art, Media and Communication (1), Business Communications & Keyboarding (1), Accounting II (1), Business Law (1), AP Human Geography (1), Issues in American Society (.5), Political Science (.5), Public Speaking (.5), Sociology (.5), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | Certification: Principles of Marketing – College Board CLEP<br><br>3 Transcripted Credits: Carroll Community College – MKTG 201 (Additional prereqs required by CCC to earn credit) | | | |

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# Construction and Development

**Build the Future**

- **Work Involved**: Skilled trades, construction, design, maintenance, and problem-solving.

- **Pathways**:
  - Vehicle Operation and Repair
  - Construction/Maintenance
  - Crafts and Related Services
  - Design, building, and maintaining structures

- **Considerations**:
  - Enjoy working with tools and equipment.
  - Ability to read blueprints and work safely.

- **Ideal for**:
  - Those who are mechanically inclined and enjoy hands-on projects.

- **Related Careers**
  - Architect
  - Civil Engineer
  - Construction Manager
  - Electrician
  - Plumber
  - Carpenter
  - Surveyor

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## COMPLETER: Building Maintenance — CREDITS: 4

| **Related Careers:** General Maintenance and Repair Worker, Grounds Maintenance Worker, Building Supervisor, Custodian, Property Manager, Facilities Manager | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | | Building Maintenance I (3) Manufacturing and Construction Technologies (1) |
| **Career Specific Enrichment Courses** | AP Environmental Science (1), AP Statistics (1), Agricultural Mechanical Technology (1), Technological Design (1), Honors Career Related Internship (.5-3), Advanced Design Applications (1), Public Speaking (.5) | | | |
| **Certification and College Credit Opportunities** | Certification: NCCT Core Exam v2 – National Center for Construction Education and Research (NCCER) | | | |

## COMPLETER: Carpentry — CREDITS: 6

| **Related Careers:** Carpenter (including Finish Carpenters, Civil Carpenters, Master Carpenter), Construction Project Manager, Cabinet Maker, Furniture Maker, Home Improvement Contractor | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Carpentry I (3) | Carpentry II (3) |
| **Career Specific Enrichment Courses** | AP Physics 1 (1), AP Physics 2 (1), AP Physics C: Mechanics (1), AP Physics C: Electricity and Magnetism (1), AP Calculus AB (1), Business Communication & Keyboarding (1), Advanced Design Applications (1), Agricultural Mechanical Technology (1), Honors Career Related Internship (.5-1), Technological Design (1), Weight Training (.5) | | | |
| **Certification and College Credit Opportunities** | Certification: NCCT Academic Carpentry Level I v2 – National Center for Construction Education and Research (NCCER)<br>Certification: NCCT Academic Core v2 – National Center for Construction Education and Research (NCCER)<br>Certification: OSHA 10<br><br>Up to 1 year toward Apprenticeship Associated Builders & Contractors<br>6 Articulated Credits: Community College of Baltimore County, Catonsville - Construction Technology | | | |

## COMPLETER: Electrical Construction — CREDITS: 6

| **Related Careers:** Electrician, Lighting Design Engineer, Stage Lighting Engineer, Project Manager, Business Owner, Alternative Energy Designer/Engineer | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Electrical Construction I (3) | Electrical Construction II (3) |
| **Career Specific Enrichment Courses** | AP Physics 1 (1), AP Physics 2 (1), AP Physics C: Mechanics (1), AP Physics C: Electricity and Magnetism (1), AP Statistics (1), Advanced Design Applications (1), Agricultural Mechanical Technology (1), Business Communications & Keyboarding (1), Public Speaking (.5), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | Certification: NCCT Academic Electrical Level I v2 – National Center for Construction Education and Research (NCCER)<br>Certification: NCCT Academic Core v2 – National Center for Construction Education and Research (NCCER)<br>Certification: OSHA 10<br><br>Up to 1 year toward Apprenticeship Associated Builders & Contractors<br>6 Articulated Credits: Community College of Baltimore County, Catonsville - Construction Technology | | | |

## COMPLETER: Heating, Ventilation, Air Conditioning CREDITS: 6

| **Related Careers:** HVAC Technician, HVAC Engineer, Ductwork Fabricator, Electronic Engineer, Sheet Metal Worker, Project Engineer, HVAC Consultant | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | HVAC I (3) | HVAC II (3) |
| **Career Specific Enrichment Courses** | AP Calculus AB (1), AP Physics 1 (1), AP Physics 2 (1), AP Physics C: Mechanics (1), AP Physics C: Electricity and Magnetism (1), Advanced Design Applications (1), Technological Design (1), Business Communications & Keyboarding (1), Public Speaking (.5), Technological Issues & Impacts (1), Weight Training (.5), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | Certification: NCCT Academic Core v2 – National Center for Construction Education and Research (NCCER)<br>Certification: NCCT Academic HVAC – National Center for Construction Education and Research (NCCER)<br>Certification: OSHA 10<br><br>Up to 1 year toward Apprenticeship Associate Builders and Contractors<br>6 Articulated Credits: Community College of Baltimore County, Catonsville – Construction Technology<br>6 Articulated Credits: University of Northwestern Ohio – Commercial HVAC & Refrigeration | | | |

## COMPLETER: Masonry CREDITS: 6

| **Related Careers:** Mason, Home Builder/Designer, Landscape/Hardscape Designer, Patio/Driveway Designer & Builder, Construction Project Manager, Business Owner, Home Improvement Contractor | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Masonry I (3) | Masonry II (3) |
| **Career Specific Enrichment Courses** | AP Physics 1 (1), AP Physics 2 (1), AP Statistics (1), Advanced Design Applications (1), Technological Design (1) , Honors Accounting I (1), Agricultural Mechanical Technology (1), Public Speaking (.5), Principles of Business Administration and Management (1), Weight Training (.5), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | Certification: NCCT Academic Masonry Level I v2 – National Center for Construction Education and Research (NCCER)<br>Certification: NCCT Academic Core v2 – National Center for Construction Education and Research (NCCER)<br>Certification: OSHA 10<br><br>Up to 1 year toward Apprenticeship Associated Builders & Contractors<br>6 Articulated Credits: Community College of Baltimore County, Catonsville - Construction Technology | | | |

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# Consumer Services, Hospitality, and Tourism

**Create Memorable Experiences**

- **Work Involved**: Customer service in travel/tourism, hospitality management, event planning, and culinary arts.

- **Pathways**:
  - Food Service/Culinary Arts
  - Hospitality Management
  - Textiles and Fashion
  - Cosmetology

- **Considerations**:
  - Ability to quickly solve problems and communicate effectively.
  - Interest in organizing events and providing excellent service.

- **Ideal for**:
  - Those who enjoy dynamic environments and helping others.

- **Related Careers**
  - Hotel Manager
  - Event Planner
  - Travel Agent
  - Restaurant Manager
  - Retail Manager
  - Tour Guide
  - Customer Service Representative

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## COMPLETER: Cosmetology — CREDITS: 9

| **Related Careers:** Hairstylist, Salon Manager, Film & Theatre Hair Specialist, Hair Color Specialist, Editorial Stylist, Distributor Sales Consultant, Nail Technician, Manufacturer Educator | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Principles & Practices of Cosmetology (3) | Adv. Cosmetology Theory & Application (3)<br>Mastery of Cosmetology (3) |
| **Career Specific Enrichment Courses** | Honors Accounting I (1), Accounting II (1), Business Communications & Keyboarding (1), Business Law (1), Honors Economics (0.5), Honors Health III (0.5), Human Anatomy & Physiology (1), Principles of Business Administration and Management (1), Psychology I (1), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | 1,000-hour letter/eligibility to participate in supervised work-based experience in a salon setting<br>Certification: Maryland Cosmetology License – Maryland State Board of Cosmetology | | | |

## COMPLETER: Culinary Arts — CREDITS: 6

| **Related Careers:** Restaurant Chef, Baking & Pastry Chef, Cook, Caterer, Restaurant Manager, Food Production Manager, Cake Decorator, Dietician | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Culinary Arts I: Culinary Basics (3) | Culinary Arts II: Professional Baking & Pastry (3) **OR**<br>Culinary Arts II: Professional Cooking (3) |
| **Career Specific Enrichment Courses** | Honors Accounting I (1), Accounting II (1), Advanced Foods (1), Business Communications & Keyboarding (1), Business Law (1), Honors Economics (0.5), Food & Nutrition Science (1), Honors Health III (0.5), Human Anatomy & Physiology (1), Intro. to Foods (0.5), Principles of Business Administration and Management (1), Psychology I (1), Sociology (0.5), AP World Language and Culture (1), Honors Career Related Internship | | | |
| **Certification and College Credit Opportunities** | Certification: ServSafe – Food Manager<br>Certification: American Culinary Federation (ACF) – Certified Fundamentals<br><br>Up to 18 Transcripted Credits: Stratford University – Culinary Arts<br>3 Articulated Credits: Anne Arundel CC – Hotel, Culinary Arts & Tourism<br>6 Articulated Credits: Frederick CC – Culinary Arts & Tourism | | | |

## COMPLETER: Textiles and Fashion Careers — CREDITS: 6

| **Related Careers:** Fashion Designer, Costume Designer, Interior & Spatial Designer, Wholesale & Retail Buyer, Fashion Merchandiser, Fabric & Apparel Patternmaker, Merchandise Displayer and Window Trimmer, Tailor, Dressmaker, Custom Sewer, and Upholsterer | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Textiles & Fashion Careers I (3) | Textiles & Fashion Careers II (2)<br>Textiles & Fashion Careers Capstone (1) |
| **Career Specific Enrichment Courses** | Honors Art (0.5-1), Honors Digital Media and Design (0.5), Honors Economics (0.5), Issues in American Society (0.5), Honors Marketing (1), Principles of Business Administration and Management (1), Principles of Fashion and Interior Design (0.5-1), Public Speaking (0.5), AP Studio Art (1), AP World Language and Culture (1), Honors Career Related Internship (1-3) | | | |
| **Certification and College Credit Opportunities** | 3 Articulated Credits: Stevenson University – Fashion Design | | | |

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# Environmental Agriculture and Natural Resources

**Sustain and Preserve**

- **Work Involved**: Agricultural production, energy distribution, natural resource management, environmental protection.

- **Pathways**:
    - Agricultural Sciences
    - Natural Resources
    - Animal Care
    - Environmental Studies

- **Considerations**:
    - Passion for the outdoors and working with animals.
    - Concern for environmental sustainability and problem-solving.

- **Ideal for**:
    - Those with an interest in science and a desire to protect nature.

- **Related Careers**
    - Environmental Scientist
    - Agricultural Engineer
    - Wildlife Biologist
    - Forester
    - Conservationist
    - Environmental Consultant
    - Farm Manager

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## COMPLETER: CASE Agricultural Science - Animal **CREDITS: 4**

| **Related Careers:** Veterinarian, Vet Technician, Zookeeper, Wildlife Management, Agricultural Engineer, Agricultural Inspector, Natural Science Managers, Farm/Ranch Manager, Agricultural & Food Science Technician | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements (4 minimum credits)** | CASE -Introduction to Agriculture, Food, and Natural Resources (1) | CASE – Animal (1) | CASE – Animal and Plant Biotechnology (1) | CASE- Agriculture Business Research and Development (1) |
| **Career Specific Enrichment Courses** | AP Environmental Science (1), AP Biology (1), AP Chemistry (1), AP Statistics (1), AP Environmental Science (1), AP Language & Composition (1), CASE Natural Resources & Ecology (1), CASE Plant (1), CASE Environmental Science Issues (1), Honors Science Research I (1), Advanced Topics in Chemistry (1), Human Anatomy & Physiology (1), Managing Personal Finances Using Excel (1), Aquatic Environmental Science (.5), Terrestrial Environmental Science (.5), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | 3 Transcripted Credits: University of Maryland Institute of Applied Agriculture – INAG 199C<br>6 Transcripted Credits: Rutgers University – Animal Science, Issues & Concepts in BioTech<br>9 Transcripted Credits: Delaware Valley University – Intro to Ag Business, Animal Science, Crop Science or Sustainable Agriculture | | | |

## COMPLETER: CASE Agricultural Science - Plant **CREDITS: 4**

| **Related Careers:** Environmental Specialist, Forestry Management, Soil & Plant Scientist, Nursery Greenhouse Manager, Curator, Landscaper, Groundskeeper, Soil & Water Conservationist, Food and Safety Quality Control | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements (4 minimum credits)** | CASE - Introduction to Agriculture, Food, and Natural Resources (1) | CASE Agricultural Science - Plant (1) | CASE Agricultural Science – Animal and Plant Biotechnology (1) | CASE- Agriculture Business Research and Development (1) |
| **Career Specific Enrichment Courses** | AP Statistics (1), AP Environmental Science (1), AP Chemistry (1), AP Biology (1), Honors CASE Natural Resources & Ecology, CASE Animal (1), CASE Environmental Science Issues (1), Honors Science Research (1), Advanced Topics in Chemistry (1), Aquatic Environmental Science (.5), Terrestrial Environmental Science (.5), Managing Personal Finances Using Excel (1), Honors Career Related Internship (.5 -3) | | | |
| **Certification and College Credit Opportunities** | 3 Transcripted Credits: University of Maryland Institute of Applied Agriculture – INAG 199C<br>6 Transcripted Credits: Rutgers University – Plants & People, Issues & Concepts in BioTech<br>9 Transcripted Credits: Delaware Valley University – Intro to Ag Business, Horticulture, Crop Science or Sustainable Agriculture | | | |

## COMPLETER: CASE Natural Resources **CREDITS: 4**

| **Related Careers:** Naturalist, Environmental Scientist, Land Manager, Environment Engineer, Forester, Conservationist, Park Ranger, National Park Service Worker, U.S. Forest Service worker, U.S. Fish & Wildlife Service Worker, Natural Resources Manager | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements (4 minimum credits)** | CASE - Intro to Agriculture, Food & Natural Resources (1) | Honors CASE Natural Resources and Ecology (1) | Honors CASE Environmental Science and Issues (1) | CASE - Agriculture Business Research and Development (1) |
| **Career Specific Enrichment Courses** | AP Environmental Science (1), AP Biology (1), AP Statistics. (1), AP Language and Composition (1), AP Seminar (1), AP Chemistry (1), Managing Personal Finances Using Excel (1), Advanced Topics in Chemistry (1), Aquatic Environmental Science and Terrestrial Environmental Science (.5), Issues in American Society (.5), Honors Science Research I (1), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | 3 Transcripted Credits: University of Maryland Institute of Applied Agriculture – INAG 199C<br>5 Transcripted Credits: Rutgers University – Principles of Natural Resource Management, Issues in Environmental Pollution<br>9 Transcripted Credits: Delaware Valley University – Intro to Ag Business, Principles of Ecology, Sustainability, Horticulture, Crop Science or Sustainable Agriculture | | | |

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# Health and Biosciences

**Improve Lives**

- **Work Involved**: Healthcare services, medical research, and developing medical technologies.

- **Pathways**:
  - Medical Specialties and Technologies
  - Natural Sciences and Mathematics
  - Social Sciences
  - Engineering and Other Applied Technologies

- **Considerations**:
  - Strong aptitude in science, math, and a desire to help others.
  - Interest in medical research and healthcare.

- **Ideal for**:
  - Those who are detail-oriented and have a passion for medicine.

- **Related Careers**
  - Physician
  - Nurse
  - Pharmacist
  - Medical Researcher
  - Biomedical Engineer
  - Lab Technician
  - Physical Therapist

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## COMPLETER: Academy of Health Professions

**CREDITS: 4 to 5**

**Related Careers:** Nursing Assistant, Registered Nurse, Clinical Nurse Specialist, Physical Therapist Assistant, Pharmacy Technician, Pharmacist, Medical Assistant, Nurse Practitioner, Physician's Assistant, Occupational Therapist, Speech & Language Pathologist.

| Grade → | 9 | 10 | 11 | 12 |
|---|---|---|---|---|
| **Option 1A**<br>**Certified Nursing Assistant (C.N.A.)**<br><br>**Option 1B**<br>**Certified Nursing Assistant (C.N.A.)**<br><br>**4 Credits** | | | Foundations Of Medicine and Health Science (1)<br>Structure and Functions of the Human Body (1) | Foundations of Medicine and Health Science (1)<br>Structure and Functions of the Human Body (1)<br>CNA – Theory and Clinical (1)<br>Honors Academy of Health Professions Internship (1-3)<br>OR<br>Dual Enrollment (1) |
| **Option 2**<br>**Physical Rehabilitation (Personal Training Certification)**<br>• **Physical Therapy**<br>• **Occupational Therapy**<br>• **Speech Pathology**<br>• **Athletic Training**<br>• **Sports Medicine**<br><br>**5 Credits** | | | | Foundations Of Medicine and Health Science (1)<br>Structure and Functions of the Human Body (1)<br>Physical Rehabilitation: Theory and Clinical (2)<br>Dual Enrollment (I)<br>Or<br>Honors Academy of Health Professions Internship (1-3) |
| **Option 3**<br>**Medical Specialty (at CCCTC)**<br>**Certified Clinical Medical Assistant**<br><br>**5 Credits** | | | | Foundations Of Medicine and Health Science (1)<br>Structure and Functions of the Human Body (1)<br>CNA – Theory and Clinical (1)<br>Specialized Medical Option (offered at Carroll Community College) (1)<br>Honors Academy of Health Professions Internship (1-3) |
| **Option 4**<br>**Medical Specialty (at Carroll Community College)**<br>**Pharmacy Technician**<br><br>**OR**<br>**Dental Assistant & Oral Radiography**<br><br>**4 Credits** | | | Foundations Of Medicine and Health Science (1)<br>Structure and Functions of the Human Body (1)<br>Specialized Medical Option (offered at Carroll Community College) (1) | Honors Academy of Health Professions Internship (1-3)<br>OR<br>Dual Enrollment – Allied Health prerequisite (Pharmacy Tech. Only) (1) |

| | |
|---|---|
| **Career Specific Enrichment Courses** | Business Communications and Keyboarding (1), Health II (0.5), Honors Health III (0.5), Human Anatomy & Physiology (1), Psychology I (1 – Acad, Hon, or AP), Public Speaking (0.5), Sociology (0.5) |
| **Certification and College Credit Opportunities** | Certifications: Certified Nursing Assistant, Geriatric Nursing Assistant, Certified Personal Trainer |

## COMPLETER: Biomedical Sciences – Project Lead the Way Endorsement CREDITS: 4

| **Related Careers:** Biomedical Engineer, NanoSystems Engineer, Family & General Practitioner, Biochemist, Forensic Science Technician, Geneticist, Bioinformatics Scientist, Veterinary Science, Research, Neuroscientist, Pharmacist | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Principles of Biomedical Sciences (1)<br>Human Body Systems (1) | Medical Interventions (1)<br>Biomedical Innovation (1) |
| **Program Specific Requirements** | A college preparatory math and science course is required each year of high school. | | | |
| **Career Specific Enrichment Courses** | AP Biology (1), AP Chemistry (1), Health II (0.5), Honors Human Anatomy & Physiology (1), Honors Science Research I (1), Issues in American Society (0.5), Probability and Statistics (1), AP Statistics (1), Technical Issues & Impacts (I) | | | |
| **Certification and College Credit Opportunities** | 8 Transcripted Credits: Stevenson University – BIO 113 & BIO 113L, BIO 222<br>12 Transcripted Credits: Missouri University of Science & Technology – BIO 1943, BIO 1953, BIO 1983, BIO 1993 | | | |

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# Human Resource Services

**Empower and Support**

- **Work Involved**: Social services, health care, education, community aid, and personal services.

- **Pathways**:
    - General Health Care
    - Education and Related Services
    - Social and Government Services
    - Personal/Customer Services

- **Considerations**:
    - Ability to interact well with diverse groups of people.
    - Interest in helping others and improving their well-being.

- **Ideal for**:
    - Those who enjoy teaching, counseling, and supporting others.

- **Related Careers**
    - Human Resources Manager
    - Recruiter
    - Training and Development Specialist
    - Compensation and Benefits Manager
    - Labor Relations Specialist
    - Career Counselor
    - Employment Specialist



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## COMPLETER: Army Junior Reserve Officer Training Corps (JROTC) CREDITS: 3

| | | | | |
|---|---|---|---|---|
| **Related Careers:** Military Officer (Air Force, Army, Coast Guard, Marine Corps, Navy, or Space Force), National Guard Officer, Community Leader, Civil Rights Worker, Youth Leader, Community Service Officer, Adventure Guide | | | | |
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements (3 minimum credits) *Optional Courses** | Leadership Education & Training I (1) | Leadership Education & Training II (1) | Leadership Education & Training III (1) | *Leadership Education & Training IV, V, VI, VII, VIII (1) |
| **Career Specific Enrichment Courses** | AP Statistics (1), AP Human Geography (1), AP Government (1), AP Macroeconomics (1), Business Communications & Keyboarding (1), Honors World Language III (1), Peer Facilitating (.5), Issues in American Society (.5), Public Speaking (.5), Sociology (.5), World Geography (.5), Political Science (.5), Psychology (1 – Acad, Hon, or AP), Honors Economics (.5), Speech and Debate (.5), (1), Business Law (1), Honors Law, Citizenship & Society(.5), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | Advanced standing: Department of Defense – Upon enlistment, rank advancement to E-3<br>Advanced standing: 1 year of credit in the Senior ROTC program | | | |

## COMPLETER: Child Development and Early Education CREDITS: 4-6

| | | | | |
|---|---|---|---|---|
| **Related Careers:** Preschool or Early Learning Teacher, Childcare Worker, Preschool & Childcare Center Education Administrator, Family & Child Social Worker, Camp Director, Speech Therapist, Behavioral Specialist, Elementary School Teacher | | | | |
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | Honors Child & Adolescent Development (1) | Learning Environments for Preschoolers (1)<br>CDA Portfolio & Internship (1) | CDA Internship (3)<br>OR<br>Dual Enrollment |
| **Career Specific Enrichment Courses** | AP Statistics (1), Business Communications & Keyboarding (1), Psychology (1 – Acad, Hon, or AP), Sociology (.5), Principles of Business Administration and Management (1), Theatre I, II, III (.5-1.5), Peer Facilitating (.5), Public Speaking (.5), American Sign Language (.5), Exploring Music (1) | | | |
| **Certification and College Credit Opportunities** | Certification: Child Development Associate – Council for Professional Recognition<br><br>3 Articulated credits: Carroll Community College<br>3-6 Articulated credits: Stevenson University -Elementary Education or Early Childhood | | | |

## COMPLETER: Education – Teacher Academy of MD CREDITS: 4

| | | | | |
|---|---|---|---|---|
| **Related Careers:** Elementary, Middle, or High School Teacher, Special Education Teacher, Media Specialist, School Counselor, Instructional Assistant, Child Psychologist, Speech Therapist, School Administrator, Coach | | | | |
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | Honors Child & Adolescent Development (1) | Honors Teaching as a Profession (1)<br>Foundations of Curriculum & Instruction (1) | Honors Education Academy Internship (1) |
| **Career Specific Enrichment Courses** | **Note:** Students should focus elective choices in the content area they aspire to teach (Content Specific coursework).<br><br>Learning Environment for Preschoolers (1), American Sign Language (0.5), Business Communications & Keyboarding (1), Peer Facilitating (.5), Psychology (1 – Acad, Hon, or AP), Public Speaking (0.5), AP Statistics (1), Creative Writing (.5) | | | |
| **Certification and College Credit Opportunities** | Certification: Praxis Core Exam or ParaPro – Educational Testing Service<br><br>Articulated credits:<br>Bowie State, Carroll Community College, Community College of Baltimore County, Coppin State, Frederick Community College, Frostburg University, Hood College, McDaniel College, Morgan State, Notre Dame, Salisbury University, St. Mary's College, Stevenson University, Towson University.<br>Scholarships and guaranteed contract with CCPS upon successful completion of education degree | | | |

## COMPLETER: Homeland Security and Emergency Preparedness- Criminal Justice/Law Enforcement

**CREDITS: 4**

| | | | | |
|---|---|---|---|---|
| **Related Careers:** Police Officer, Criminal Investigator, Lawyer, Forensic Science Technician, Probation Officer, Corrections Officer, Customs Agent, Court reporter, TSA Screener, Juvenile Probation Counselor, Private Security | | | | |
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements (4 minimum credits)** | | | Foundations of Homeland Security and Emergency Preparedness (1)<br>Administration of Justice I (1) | Administration of Justice II (1)<br>Homeland Security and Emergency Preparedness Capstone (1) |
| **Career Specific Enrichment Courses** | Business Communications & Keyboarding (1), Law, Citizenship & Society (.5), Business Law (1), AP Human Geography (1), Issues in American Society (0.5), AP Macroeconomics (1), Peer Facilitating (0.5), Political Science (0.5), Psychology (1 – Acad, Hon, or AP), Public Speaking (0.5), Sociology (0.5), World Geography (1), Honors World Language III (1), Honors Career Related Internship (.5 – 3) | | | |
| **Certification and College Credit Opportunities** | 3 Transcripted Credits – Carroll Community College – Criminal Justice<br>3 Articulated Credits – Frederick Community College, University of Baltimore, University of Maryland University College | | | |

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# Information Technology

**Innovate and Secure**

- **Work Involved**: Computer systems, software development, cybersecurity, technical support.

- **Pathways**:
  - Home/Business Equipment Repair
  - Industrial Equipment Operation and Repair
  - Programming/Development of Software
  - Cybersecurity

- **Considerations**:
  - Problem-solving skills and an interest in technology.
  - Ability to code and work with information systems.

- **Ideal for**:
  - Those who are analytical and enjoy technical challenges.

- **Related Careers**

  - Software Developer
  - Network Administrator
  - IT Support Specialist
  - Cybersecurity Analyst
  - Data Analyst
  - Web Developer
  - Systems Engineer

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## COMPLETER: Computer Science — CREDITS: 3

| **Related Careers:** Computer and Information Research Scientist, Computer Programmer, Systems Analysts, Software Developer or Engineer, Computer Systems Engineers/Architects, Database Administrators, IT Project Manager, Network Security Engineer, Data Scientist | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements (3 minimum credits) Prerequisite*** | ***Exploring Computer Science (1) or *AP Computer Science Principles (1)** | AP Computer Science A (1) | Advanced Topics in Computer Science (1) | Computer Science Capstone (1) or Honors Career Related Internship (1) or Dual Enrollment (see your counselor) (1) |
| **Career Specific Enrichment Courses** | Business Communications & Keyboarding (1), Managing Personal Finances Using Excel (1), Principles of Art, Media and Communication (1) | | | |
| **Certification and College Credit Opportunities** | Up to 9 credits through elective Advanced Placement Exams and/or dual enrollment credit | | | |

## COMPLETER: Cisco Networking Academy — CREDITS: 6

| **Related Careers:** Help Desk Operator, Support Technician, Network Support Technician, Network Support Engineer, Network Administrator, Network Designer, Network Engineer, Security Operations Analyst, Network Security Architect, Network Security Engineer, Network Security Specialist | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Option 1: Cybersecurity Completer Program Requirements 6 credits** | | | Cisco Cybersecurity I (3) | Cisco Cybersecurity II (3) |
| **Option 2: Cyber Operations Completer Program Requirements 6 credits** | | | Cisco Cyber Operations I (3) | Cisco Cyber Operations II (3) |
| **Career Specific Enrichment Courses** | AP Computer Science Principles (1), AP Computer Science A (1), Advanced Topics in Computer Science (1), AP Statistics (1), AP Physics 1 (1), AP Physics 2 (1), Business Communications and Keyboarding (1), Technological Design (1), Managing Personal Finances Using Excel (1), Honors Accounting I (1), Business Law (1), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | Certification: Security+, Network+ – Cybersecurity<br>Certification: Linux+, Certified Associate Python Programmer (PCAP) – Cyber Operations<br><br>Up to 16 Articulated credits: Community College of Baltimore County, Catonsville, Essex, or Dundalk – Information Technology<br>Credits determined by certifications earned: Carroll Community College – Computer Science<br>Credits determined on an Individual basis: Frederick Community College – Computer Science | | | |

## COMPLETER: Homeland Security and Emergency Preparedness- Geographic Information Systems and Technology — CREDITS: 4

| **Related Careers:** GIS Technician, Cartographer, Geographer, CAD Designer, GIS Analyst, Remote Sensing Analyst, Conservationist, Health Geographer, Urban/Regional Planner, Surveyor | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements (4 minimum credits) *Optional Courses** | | | Foundations of Homeland Security and Emergency Preparedness (1)<br>S.T.A.R.S. Course 1 and 2 (1)<br>Unmanned Aircraft Systems I (1)* | S.T.A.R.S. Course 3 and 4 (1)<br>Homeland Security and Emergency Preparedness Capstone (1)<br>Unmanned Aircraft Systems II (1)* |
| **Career Specific Enrichment Courses** | AP Human Geography (1), Business Communications & Keyboarding (1), World Language III (1), Peer Facilitating (.5), Honors Science Research I (1), Honors Career Related Internship (.5-1) Issues in American Society (.5), Public Speaking (.5), Sociology (.5), World Geography (.5), Political Science (.5), Psychology (1 – Acad, Hon, or AP), Honors Economics (.5), AP Government (1), Speech and Debate (.5), AP Macroeconomics (1), AP Statistics (1), Business Law (1), Honors Law, Citizenship & Society(.5) | | | |
| **Certification and College Credit Opportunities** | 6 Transcripted Credits: Harrisburg University – GTSC 140, GTSC 107* | | | |

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# Manufacturing Engineering and Technology

**Design and Create**

- **Work Involved**: Product development, manufacturing processes, quality control, engineering.

- **Pathways**:
    - Digital Fabrication and Manufacturing
    - Drafting
    - Engineering-Project Lead the Way
    - Applied Mechanical Engineering
    - Product Development

- **Considerations**:
    - Creativity in design and a flexible thought process.
    - Ability to work in unstructured environments and meet deadlines.

- **Ideal for**:
    - Those who enjoy technical work and product innovation.

- **Related Careers**
    - Mechanical Engineer
    - Electrical Engineer
    - Industrial Engineer
    - Manufacturing Technician
    - Quality Control Inspector
    - Product Designer
    - CAD Technician

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## COMPLETER: Applied Mechanical Engineering CREDITS: 6

| Careers: Machinist, Tool & Die Maker, Mechanical Engineer, Industrial Machine Mechanic, Millwright | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Applied Mechanical Engineering I (3) | Applied Mechanical Engineering II (3) |
| **Career Specific Enrichment Courses** | AP Calculus AB (1), AP Physics 1 (1), AP Physics 2 (1), AP Physics C: Mechanics (1), AP Physics C: Electricity and Magnetism (1), Advanced Design Applications (1), Business Communications & Keyboarding (1), Honors Calculus (1), AP Calculus BC (1), Advanced Topics in Chemistry (1), Issues in American Society (.5), Public Speaking (.5), Technological Issues & Impacts (1), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | Certification: Measurement, Materials, and Safety - NIMS (National Institute for Metalworking Skills)<br>Certification: Job Planning, Bench Work and Layout - NIMS (National Institute for Metalworking Skills)<br>17 Articulated Credits: Community College of Baltimore County, Catonsville – Computer Automated Manufacturing and Industrial Technology | | | |

## COMPLETER: Digital Fabrication and Manufacturing CREDITS: 3

| **Related Careers:** Industrial Designer, Mechanical Engineer Technician, Drafter, Product Developer, Assembler & Fabricator, 3D Print Technician | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements (3 credits minimum) *Optional Credits** | | Honors Advanced Design Applications (1) | Honors Technological Design (1)<br>Introduction to 3D Printing (1) | Honors Digital Fabrication Capstone (1)*,<br>Dual Enrollment* (see your counselor),<br>Honors Career Related Internship (.5-3)* |
| **Career Specific Enrichment Courses** | AP Studio Art: 3D Design (1), Honors Digital Media and Design (.5), Art II: 2 & 3 D Art (.5-1), Honors Digital Design in Photography (.5), AP Computer Science Principles (1) | | | |
| **Certification and College Credit Opportunities** | 3 transcripted credits: Carroll Community College – Intro to 3D Printing | | | |

## COMPLETER: Drafting CREDITS: 6

| **Related Careers:** Drafter (including Civil, Mechanical, Electrical & Electronic, Architectural, Aeronautical, and Marine), Architect, Civil Engineering Technician, Surveying & Map Technician | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Drafting I (3) | Drafting II (3) |
| **Career Specific Enrichment Courses** | AP Calculus AB (1), AP Studio Art: 3D Design (1), Advanced Design Applications (1), Technological Design (1), Honors Principles of Art, Media and Communication (1)), Honors Digital Media and Design (.5), Honors Calculus (1), Art II: 2 & 3 D Art (.5-1), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | Certification: AutoCAD for Design and Drafting – Autodesk Certified Professional<br><br>3 Articulated credits: Carroll Community College - Computer Aided Design<br>9 Articulated credits: CC of Baltimore County, Catonsville – Computer Aided Drafting and Design<br>Up to 7 Articulated credits: Frederick CC – Computer Aided Drafting | | | |

## COMPLETER: Engineering Technology - Project Lead the Way Endorsement CREDITS: 5

| **Related Careers:** Biochemical Engineer, Petroleum Engineer, Nanotechnology Engineer, Mechanical Engineer, Environmental Engineer, Agricultural Engineer, Product Safety Engineer, Aerospace Engineer, Industrial Engineer, Logistics Engineer | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Honors Principles of Engineering (1)<br>Intro to Engineering Design (1) | Computer Integrated Manufacturing (1)<br>Digital Electronics (1)<br>Honors Engineering Design & Development (1) |
| **Program Specific Requirements** | A college preparatory math and science course is required each year of high school. | | | |
| **Career Specific Enrichment Courses** | AP Calculus AB (1), AP Calculus BC (1), AP Physics 1 (1), AP Physics 2 (1), AP Physics C: Mechanics (1), AP Physics C: Electricity and Magnetism (1), Honors Trig. & Pre-Calc (1), Science Research I (1), AP Chemistry (1), Advanced Design Applications (1), Technological Design (1), Technological Issues & Impacts (1), Principles of Fashion & Interior Design (.5-1), AP Computer Science Principles (1), AP Computer Science A (1), Managing Personal Finance with Excel (1) | | | |
| **Certification and College Credit Opportunities** | 16 Transcripted Credits: Rochester Institute of Technology – Engineering<br>3 Articulated Credits: University of Maryland Baltimore County – Engineering<br>3 Articulated credits: The Community Colleges of Baltimore County – Engineering Technology<br>3 Articulated credits: Frederick Community College – CAD | | | |

## COMPLETER: Welding Technology CREDITS: 6

| **Related Careers:** Welding Fabricator, Sheet Metal Worker, Welding Engineer, Welding Supervisor, Welding Inspector, Underwater Welder, Ironworker, Robotic Welding Technician, Boilermaker, Pipeline Welder, Shipfitter | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Welding Technology I (3) | Welding Technology II (3) |
| **Career Specific Enrichment Courses** | AP Calculus AB (1), AP Physics 1 (1), AP Physics 2 (1), AP Physics C: Mechanics (1), AP Physics: Electricity and Magnetism (1), Advanced Design Applications (1), Business Communications & Keyboarding (1), Managing Personal Finances Using Excel (1), AP Physics (1), Principles of Business Administration and Management (1), Public Speaking (0.5),Weight Training (0.5), World Language III (1), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | Certification: Certified Welder – American Welding Society<br>Certification: NCCT Academic Welding – National Center for Construction Education and Research (NCCER)<br>Certification: NCCT Academic Core v2 – National Center for Construction Education and Research (NCCER)<br>Certification: OSHA 10<br><br>Up to 1 year toward Apprenticeship Associated Builders & Contractors | | | |

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# Transportation Technologies

**Move the World**

- **Work Involved**: Vehicle and infrastructure design, logistics, transportation system management.

- **Pathways**:
  - Automobile Services
  - Collision Repair
  - Heavy Equipment and Truck Technologies

- **Considerations**:
  - Mechanical aptitude and problem-solving skills.
  - Interest in vehicles and transportation systems.

- **Ideal for**:
  - Those who enjoy working with their hands and ensuring efficient transport solutions.

- **Related Careers**:
  - Automotive Technician
  - Aerospace Engineer
  - Logistics Manager
  - Transportation Planner
  - Pilot
  - Marine Engineer
  - Railroad Conductor



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## COMPLETER: Auto Service Technology — CREDITS: 6

| **Related Careers:** Automotive Master Mechanic, Automotive Technician, Automotive Service Advisor, Automotive Parts Specialist, Front End Specialist, Lube Technician, Automotive Engineering Technician, Automotive Service Manager | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Auto Service Technology I (3) | Auto Service Technology II (3) |
| **Career Specific Enrichment Courses** | AP Environment Studies (1), AP Physics 1 (1) AP Physics 2 (1), Advanced Design Applications (1), Technological Design (1), Agricultural Mechanical Technology (1), Chemistry of Earth and Space Science (1), Business Communication & Keyboarding (1), Public Speaking (.5), Technological Issues & Impacts (1), Honors Career Related Internship (.5-1) | | | |
| **Certification and College Credit Opportunities** | Certification: Maintenance and Light Repair - Auto Service Excellence (ASE)<br>Certification: Brakes - Auto Service Excellence (ASE)<br>Certification: Electrical/Electronic Systems - Auto Service Excellence (ASE)<br>Certification: Steering & Suspension - Auto Service Excellence (ASE)<br>Certification: Engine Performance - Auto Service Excellence (ASE)<br>Certification: Safety & Pollution Prevention (SP2)<br><br>Up to 15 Articulated Credits: Community College of Baltimore County, Catonsville - Automotive Technology<br>Up to 15 Articulated Credits: Penn College of Technology - Automotive Technology<br>Up to 12 Articulated Credits: University of Northwestern Ohio – Automotive Technology<br>Up to 4 Articulated credits: Universal Technical Institute - Automotive Technology | | | |

## COMPLETER: Collision Repair Technology — CREDITS: 6

| **Related Careers:** Auto Body Technician, Collision Repair Supervisor, Collision Repair Shop Owner, Master Automotive Painter, Collision Insurance Adjuster | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Collision Repair Technology I (3) | Collision Repair Technology II (3) |
| **Career Specific Enrichment Courses** | AP Environmental Science (1), AP Physics 1 (1), AP Physics 2 (1), Advanced Design Applications (1), Agricultural Mechanical Technology (1), Honors Accounting I (1), Principles of Business Administration and Management (1), Business Communications & Keyboarding (1), Public Speaking (.5), Honors Career Related Internship (.5-3), Honors Digital Media and Design (.5-1), Honors Art II (.5) | | | |
| **Certification and College Credit Opportunities** | Certification: Non-Structural Analysis and Damage Repair - Auto Service Excellence (ASE)<br>Certification: Painting and Refinishing - Auto Service Excellence (ASE)<br>Certification: Structural Analysis and Damage Repair - Auto Service Excellence (ASE)<br>Certification: Safety & Pollution Prevention (SP2)<br><br>15 Articulated Credits: Community College of Baltimore County, Catonsville – Automotive Collision Repair & Refinishing<br>Up to 16 Articulated Credits: Penn College of Technology - Auto Body/Collision Repair | | | |

## COMPLETER: Heavy Equipment and Truck Technology — CREDITS: 6

| **Related Careers:** Heavy Equipment Mechanic, Diesel Engine Mechanic, Farm Equipment Mechanic, Heavy Equipment Maintenance Specialist, Diesel Locomotive Mechanic, Fleet Maintenance Mechanic | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** | | | Heavy Equipment & Truck Technology I (3) | Heavy Equipment & Truck Technology II (3) |
| **Career Specific Enrichment Courses** | AP Environmental Science (1), AP Physics 1 (1), AP Physics 2 (1), Advanced Design Applications (1), Technological Design (1), Agricultural Mechanical Technology (1), Principles of Business Administration and Management (1), Business Communications & Keyboarding (1), Public Speaking (.5), Technological Impacts & Issues (1), Honors Career Related Internship (.5-3) | | | |
| **Certification and College Credit Opportunities** | Certification: Diesel Engines - Auto Service Excellence (ASE)<br>Certification: Electrical/Electronic Systems - Auto Service Excellence (ASE)<br>Certification: Brakes - Auto Service Excellence (ASE)<br>Certification: Steering & Suspension - Auto Service Excellence (ASE)<br>Certification: Safety & Pollution Prevention (SP2)<br><br>Up to 8 Articulated Credits: Pennsylvania College of Technology - Diesel Technology: Heavy Construction Equipment: Technician, Operator or CAT Emphasis; or Electric Power Generation Technology<br>Up to 12 Articulated Credits: University of Northwestern Ohio - Diesel Technology<br>Up to 4 Articulated credits: Universal Technical Institute – Automotive Technology | | | |

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# Career Research & Development

**Explore your career possibilities!**

- **Work Involved**: Through related instruction and on-the-job training, build skills towards a career. Opportunities are available in a wide variety of industries.

- **Pathways**:
  - Apprenticeship Maryland Program
  - Registered Apprenticeship
  - Career Research & Development*

- **Considerations**:
  - Self-starter
  - Good work ethic
  - flexible

- **Ideal for**:
  - Those who learn as they go and can organize and structure their time well.

- **Related Careers**:
  - Almost any employer can sign up to be an apprenticeship site
  - See your Career Coordinator for more information

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## COMPLETER: Apprenticeship Maryland* CREDITS: 4

(*See Career Coordinator for Availability)

| Related Careers: Designed to prepare students for careers/employment and/or further education and training specifically in career pathways in Manufacturing and Science, Technology, Engineering and Mathematics (STEM) occupations | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** (4 minimum credits) | | | Apprenticeship Related Instruction (1) | Apprenticeship Work-Based Learning (3) |
| **Career Specific Enrichment Courses** | Principles of Business and Management (1), Managing Personal Finance with Excel (1), Business Communication and Keyboarding (1), Public Speaking (.5), Coursework related to specific Apprenticeship content/pathway. | | | |
| **Certification and College Credit Opportunities** | Industry Recognized Credential (if applicable) | | | |

## COMPLETER: Career Research & Development* CREDITS: 4

(*See Career Coordinator for Availability)

| Related Careers: Designed to prepare students for careers/employment and/or further education and training specifically in career pathways in Manufacturing and Science, Technology, Engineering and Mathematics (STEM) occupations | | | | |
|---|---|---|---|---|
| Grade → | 9 | 10 | 11 | 12 |
| **Completer Program Requirements** (4 minimum credits) ***Only Available in Specialized Programs** | | Career Research & Development (1)* | Career Preparation and Transition (1)* | Honors Career Research and Development Internship (1-2)* |
| **Career Specific Enrichment Courses** | Principles of Business and Management (1), Managing Personal Finance with Excel (1), Business Communication and Keyboarding (1), Public Speaking (.5), Coursework related to specific CRD content/pathway. | | | |
| **Certification and College Credit Opportunities** | Industry Recognized Credential (if applicable) | | | |

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