CUMBERLAND COUNTY TECHNICAL EDUCATION CENTER

Grades 9-12

Course Description Guide

2017-2018

Notice of Non-Discrimination

The Board of Education declares it to be the policy of the Cumberland County Board of Vocational Education that each and every student in the school system shall be provided equal opportunities to achieve his or her maximum potential through enrollment in the programs offered in the schools unhindered by any discriminatory attitudes or practices based on distinctions of race, color, creed, religion, gender, ancestry, national origin, place of residence, handicap, or social or economic background.

The following person has been designed to handle inquiries regarding the non-discrimination policies and serve the district and community as the Affirmative Action Officer:

Dr. Dina Rossi Elliott
Superintendent

Contents of this Guide

Please note that the contents of this guide are subject to change based upon administrative discretion.
Cumberland County Technical Education Center

3400 College Drive
Vineland, NJ 08360
P: 856-451-9000 F: 856-453-1118

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A Message from the Principal

Mission Statement

The Mission of Cumberland County Technical Education Center is to provide all of our students with a pathway into the global workforce with advanced educational options.

Core Values

We have established core values to drive our mission statement. All programmatic, academic, and administrative policies and procedures are developed with these core values in mind.

C.C. **College & Career Readiness:** All students will leave CCTEC college and career ready. Our goal is to prepare all students through a rigorous academic program that includes opportunities to enroll in Advanced Placement courses and courses that have articulated credit with colleges and universities. In addition, all students will leave CCTEC with industry licensure/certification and the skills needed to be successful in any industry.

T **Technology & Innovation:** CCTEC is a high school of innovation! As our logo depicts, our students and staff think outside of the box. In our ever changing, global economy, we are preparing our students for jobs that haven’t been created and for problems that do not yet exist. In addition to being academically rigorous, our curriculum is project-based and requires students to analyze, synthesize, collaborate, evaluate, and create solutions to real problems.

E **Excellence & Leadership:** CCTEC is committed to excellence and to fostering the next generation of leaders! We provide our students with numerous leadership experiences in our curricular and co-curricular program and hold our staff and administration accountable to the highest level of excellence.

C **Citizenship:** In addition to preparing the next generation of mechanics, engineers, doctors, and more, we want to ensure that we are promoting and supporting strong values of citizenship. CCTEC believes a good citizen is someone who takes responsibility for his/her actions, works diligently in his/her profession, contributes to the community, respects others and their property, helps those who are not in a position to help themselves and continues to keep informed about the world around him/her. To that end, our student code of conduct was developed with the goal of creating responsible and accountable citizens.

College & Career Readiness, Technology & Innovation, Excellence & Leadership, and Citizenship are CCTEC’s core values. When students leave CCTEC, our expectation is that they leave with the education, certification, and skill set to be New Jersey’s next generation of innovative leaders!

Greg McGraw
Principal
The information contained within this guide provides the direction needed to capture the career interests of CCTEC students while preparing to meet the demands required for graduation in the State of New Jersey. These innovative career-centered programs have been developed to accommodate all students in the school system. Their purpose is to assist children and their parents/guardians in knowing the plan to achieve certain goals in preparing for the students’ future professions and careers while current interests and goals are taken into consideration.

In order to develop appropriate college and career pathways, Cumberland County Technical Education Center has developed both Program and Program of Study course sequences. Both pathways set students up to pursue advanced educational options through dual college credits. This is accomplished by having students automatically dual enrolled at Cumberland County College beginning with their freshman year and continuing throughout their four years in high school.

Although there are many similarities between the school-offered programs and programs of study, there is one major difference. Enrolling in a Program (i.e. Automotive Technology, Construction Trades, Cosmetology, Culinary Arts, and Welding) will allow students to graduate with work credentials to begin a career directly after high school. It is important to note that this does not restrict students to this outcome but provides it as an option. Selecting a Program of Study (i.e. Engineering Technology, Health Science and Medicine, Information Technology, Law Enforcement, and Studio Production and Broadcasting), on the other hand, will provide more of a foundation for students to continue their education at either a two or four year institution directly after high school. Many of these Programs of Study (and some selected Programs) also provide for more dual college credit through the career-specific courses that are taken by students.

Cumberland County Technical Education Center has established the following five (5) Programs to assist students in the preparation of future career goals.

1. Automotive Technology
2. Construction Trades
3. Cosmetology
4. Culinary Arts
5. Welding
Cumberland County Technical Education Center has established the following five (5) Programs of Study to assist students in the identification of future career goals.

1. Engineering Technology
2. Health Science and Medicine
3. Information Technology
4. Law Enforcement
5. Studio Production and Broadcasting

Each of the above noted Programs or Programs of Study correlate to one of the following sixteen (16) nationally recognized career clusters: Agriculture, Food & Natural Resources, Architecture & Construction, Arts, A/V Technology & Communications, Business, Management & Administration, Education & Training, Finance, Government & Public Administration, Health Science, Hospitality & Tourism, Human Services, Information Technology, Law, Public Safety, Corrections & Security, Manufacturing, Marketing, and S.T.E.M..

The Programs and Programs of Study established by the district aim to:

- Help students make career decisions;
- Identify how specific courses correspond to specific careers; and,
- Improve students’ skills and increase their potential for employability and further training and education.

Additionally, the goals of these above noted Programs and Programs of Study prepare students to create a career plan that:

- Helps them to understand and have knowledge of a variety of jobs within a career field;
- Creates awareness of training and educational opportunities; and,
- Provides opportunities for training, re-training and further education.

For more information on the specific career clusters, please visit www.careertech.org/career-clusters.
Graduation Requirements

For a student to graduate from Cumberland County Technical Education Center and receive a state-endorsed Board of Education diploma, a student must do the following:

1. Meet both state and district proficiency standards in the core curriculum content areas and achieve or exceed a passing grade on the Algebra I and English 9 PARCC examinations or the associated, state-approved alternate assessments (class of 2020 only)
2. Successfully complete any course requirements stated in the Administrative Code, unless those of the district are greater, in which case, the district’s standard must be met. The proficiencies required must include the New Jersey Student Learning Standards and Next Generation Science Standards approved by the State Board of Education; and
3. Select and successfully complete enough elective credits to meet the district minimum of 120 credits.

Successful completion means that the student has demonstrated the degree of proficiency required by the district to indicate achievement of the district goals for the particular course and has attended the required number of course sessions. Transfer students must meet all state and local requirements in order to receive a high school diploma.

Students entering grade 9 are required to complete a selected program of study or program of not fewer than 120 credits in courses designated to meet all of the New Jersey Student Learning Standards and Next Generation Science Standards. These programs include but are not limited to the following credits:

1. At least 20 credits in language arts literacy
2. At least 15 credits in mathematics (must include Algebra, Geometry, and a 3rd year math based upon algebra and geometry)
3. At least 15 credits in science
4. At least 10 credits in U. S. History
5. At least 5 credits in World History
6. At least 5 credits in visual and performing arts
7. At least 5 credits in world languages
8. At least 5 credits in consumer, family, and life skills; career; or vocational-technical education
9. At least 15 (3.75 per year) credits in health, safety, and physical education
10. At least 2.5 credits in Economics/Financial Literacy
<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>REQUIRED CREDITS</th>
<th>EXAMPLE ELIGIBLE COURSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANGUAGE ARTS LITERACY</td>
<td>20</td>
<td>English I,II,III,IV</td>
</tr>
<tr>
<td>MATHEMATICS</td>
<td>15</td>
<td>Algebra I, Geometry, Algebra II, Trigonometry/Pre-calculus, Calculus</td>
</tr>
<tr>
<td>SCIENCE</td>
<td>15</td>
<td>Biology, Chemistry, Physics, Integrated Science</td>
</tr>
<tr>
<td>SOCIAL STUDIES</td>
<td>15</td>
<td>World History, US History I, US History II. etc.</td>
</tr>
<tr>
<td>FINANCIAL, ECONOMIC, BUSINESS, AND</td>
<td>2.5</td>
<td>CTE Seminar, Fundamentals of Business, Financial Literacy</td>
</tr>
<tr>
<td>ENTREPRENEURIAL LITERACY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEALTH, SAFETY, AND PHYSICAL EDUCATION</td>
<td>15</td>
<td>9-12 PE/HE</td>
</tr>
<tr>
<td>VISUAL AND PERFORMING ARTS</td>
<td>5</td>
<td>Art I, Graphic Design</td>
</tr>
<tr>
<td>WORLD LANGUAGES</td>
<td>5</td>
<td>Spanish I, II, III, IV</td>
</tr>
<tr>
<td>21ST CENTURY LIFE AND CAREERS, OR CAREER-</td>
<td>5</td>
<td>All CTE-related courses fall in this category</td>
</tr>
<tr>
<td>TECHNICAL EDUCATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL CREDITS (State Minimum)</td>
<td>120</td>
<td></td>
</tr>
</tbody>
</table>

In addition, during the four years, students must complete a program in cross-content workplace readiness, which may be satisfied through existing courses or career education courses.
Graduation Options

INDIVIDUALIZED STUDENT LEARNING OPPORTUNITIES

The 120 credit requirement set forth in N.J.A.C. 6A:8-5.1 may be met in whole or in part through program completion of a range of experiences that enable students to pursue a variety of personalized learning opportunities, as follows:

District boards of education shall establish a process to approve individualized student learning opportunities that meet or exceed the New Jersey Student Learning Standards.

Individualized student learning opportunities in all Core Curriculum Content standards areas include, but are not limited, to the following:

(A) Independent study;
(B) Online learning;
(C) Work-based programs, internships, apprenticeships;
(D) Study abroad programs;
(E) Student exchange programs;
(F) Service learning experiences; and
(G) Structured learning experiences.

Individualized student learning opportunities based upon specific instructional objectives aimed at meeting or exceeding the Core Curriculum Content Standards shall:

(A) Be based on student interest and career goals as reflected in the Personalized Student Learning Plans as they are phased in according to the schedule of implementation set forth at N.J.A.C. 6A:8-3.2(a)1;
(B) Include demonstration of student competency;
(C) Be certified for completion based on the district process adopted
(D) Be on file in the school district and subject to review by the Commissioner of his/her designee.

Students wishing to apply for individualized learning opportunities must fill out an application, in its entirety, and submit it to the Guidance Department for administrative approval.

Applications can be found in the guidance office.
Grading

All teachers will use the following Grading System in determining the grades of students:

<table>
<thead>
<tr>
<th>Numerical Grade Range</th>
<th>Letter Grade</th>
<th>Non-weighted scale number</th>
<th>Half-weighted scale number</th>
<th>Full-weighted scale number</th>
</tr>
</thead>
<tbody>
<tr>
<td>98 – 100</td>
<td>A+</td>
<td>4.25</td>
<td>4.75</td>
<td>5.25</td>
</tr>
<tr>
<td>95 – 97</td>
<td>A</td>
<td>4.00</td>
<td>4.50</td>
<td>5.00</td>
</tr>
<tr>
<td>93 – 94</td>
<td>A-</td>
<td>3.75</td>
<td>4.25</td>
<td>4.75</td>
</tr>
<tr>
<td>90 – 92</td>
<td>B+</td>
<td>3.25</td>
<td>3.75</td>
<td>4.25</td>
</tr>
<tr>
<td>87 – 89</td>
<td>B</td>
<td>3.00</td>
<td>3.50</td>
<td>4.00</td>
</tr>
<tr>
<td>85 – 86</td>
<td>B-</td>
<td>2.75</td>
<td>3.25</td>
<td>3.75</td>
</tr>
<tr>
<td>81 – 84</td>
<td>C+</td>
<td>2.25</td>
<td>2.75</td>
<td>3.25</td>
</tr>
<tr>
<td>78 – 80</td>
<td>C</td>
<td>2.00</td>
<td>2.50</td>
<td>3.00</td>
</tr>
<tr>
<td>75 – 77</td>
<td>C-</td>
<td>1.75</td>
<td>2.25</td>
<td>2.75</td>
</tr>
<tr>
<td>73 – 74</td>
<td>D+</td>
<td>1.25</td>
<td>1.75</td>
<td>2.25</td>
</tr>
<tr>
<td>71 – 72</td>
<td>D</td>
<td>1.00</td>
<td>1.50</td>
<td>2.00</td>
</tr>
<tr>
<td>70</td>
<td>D-</td>
<td>0.75</td>
<td>1.25</td>
<td>1.75</td>
</tr>
<tr>
<td>0 – 69</td>
<td>F</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Students who fail to earn at least a 70 final average in a non-elective course as defined in N.J.A.C. 6A:8-5.1 and who attend and receive a passing grade in an approved summer school make-up program will receive the grade that they earn. Both grades will appear on the student’s transcript. Both grades will be used to calculate student’s grade point average and rank in class.

Incompletes

Students who are absent from school with excused absences, will be assigned an “Incomplete” and given the opportunity to make up their missing assignments.

Students who receive an “Incomplete” will adhere to the following guidelines:

- For every day absent, students will have one day to make up the missed assignment(s).
- If the student fails to complete the assignments within the designated time period, zeros (0) will be assigned for any outstanding assignments, and the final grade will be calculated.
- The principal has the discretion to extend the deadlines for extended illnesses or other extenuating circumstances.
- In the case of an IEP or 504, the plan will be followed.
Class Rank and Grade Point Average

The Superintendent, in consultation with the teaching staff, parents, and community members, shall develop a uniform system to compute grade point average and class rank. The system should be clear, easily understood by parents/guardians and students, and able to be applied with consistency of interpretation. Speakers at graduation will be the class valedictorian and salutatorian as based upon the class rank system.

A grade point average (GPA) is a common scale used by many schools to calculate student academic achievement. Each range of number grades assigned to students will correspond to a scale number. Calculation of the GPA and class ranking will take into consideration the number of credits associated with each course, the weight of the course, and the grade received by the student. The grade scale can be seen below:

### Grade Scale Chart

<table>
<thead>
<tr>
<th>Numerical Grade Range</th>
<th>Letter Grade</th>
<th>Non-weighted scale number</th>
<th>Half-weighted scale number</th>
<th>Full-weighted scale number</th>
</tr>
</thead>
<tbody>
<tr>
<td>98 – 100</td>
<td>A+</td>
<td>4.25</td>
<td>4.75</td>
<td>5.25</td>
</tr>
<tr>
<td>95 – 97</td>
<td>A</td>
<td>4.00</td>
<td>4.50</td>
<td>5.00</td>
</tr>
<tr>
<td>93 – 94</td>
<td>A-</td>
<td>3.75</td>
<td>4.25</td>
<td>4.75</td>
</tr>
<tr>
<td>90 – 92</td>
<td>B+</td>
<td>3.25</td>
<td>3.75</td>
<td>4.25</td>
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<tr>
<td>87 – 89</td>
<td>B</td>
<td>3.00</td>
<td>3.50</td>
<td>4.00</td>
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<tr>
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<td>2.75</td>
<td>3.25</td>
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<tr>
<td>75 – 77</td>
<td>C-</td>
<td>1.75</td>
<td>2.25</td>
<td>2.75</td>
</tr>
<tr>
<td>73 – 74</td>
<td>D+</td>
<td>1.25</td>
<td>1.75</td>
<td>2.25</td>
</tr>
<tr>
<td>71 – 72</td>
<td>D</td>
<td>1.00</td>
<td>1.50</td>
<td>2.00</td>
</tr>
<tr>
<td>70</td>
<td>D-</td>
<td>0.75</td>
<td>1.25</td>
<td>1.75</td>
</tr>
<tr>
<td>0 – 69</td>
<td>F</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Courses in the various subject areas will be categorized into one of the following levels: Full-Weighted, Half-Weighted, or Non-Weighted. The listing of these can be found in the chart below:

<table>
<thead>
<tr>
<th>Weighted Levels:</th>
<th>Full-weighted</th>
<th>Half-weighted</th>
<th>Non-weighted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AP Language and</td>
<td></td>
<td>English I, II, III, IV</td>
<td>Spanish I, II</td>
</tr>
<tr>
<td>Composition</td>
<td></td>
<td>Algebra I, II</td>
<td>Applied Art</td>
</tr>
<tr>
<td>AP Literature and</td>
<td></td>
<td>Geometry</td>
<td>Graphic Design</td>
</tr>
<tr>
<td>Composition</td>
<td></td>
<td>Trig/Pre-Calculus</td>
<td>Health and PE</td>
</tr>
<tr>
<td>AP Chemistry</td>
<td></td>
<td>Calculus</td>
<td>CTE Seminar</td>
</tr>
<tr>
<td>AP Biology</td>
<td></td>
<td>Integrated Science</td>
<td></td>
</tr>
<tr>
<td>AP Physics I</td>
<td></td>
<td>Biology</td>
<td></td>
</tr>
<tr>
<td>AP Physics II</td>
<td></td>
<td>Chemistry</td>
<td></td>
</tr>
<tr>
<td>Pre-AP US History</td>
<td></td>
<td>Physics</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>Spanish III</td>
<td></td>
</tr>
<tr>
<td>Pre-AP US History</td>
<td></td>
<td>World History</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td></td>
<td>US History I</td>
<td></td>
</tr>
<tr>
<td>AP Calculus AB</td>
<td></td>
<td>US History II</td>
<td></td>
</tr>
<tr>
<td>AP Calculus BC</td>
<td></td>
<td>All CTE-related courses</td>
<td></td>
</tr>
<tr>
<td>AP Spanish IV</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Calculating Class Rank:**

The GPA can be calculated as weighted or unweighted. For final GPA and class rank, CCTEC will utilize the weighted GPA. The following two sections describe how to calculate both weighted and unweighted GPA.

**Weighted GPA**

Determine which types of weighting each of your classes are categorized as (non-weighted, half-weighted, or full-weighted). Match the numerical grade to the corresponding scale number in the Grade Scale chart. Determine the number of course credits allotted for each course. Multiply the course credits by the scale number for each course to get a final score number for each course. Add all of the final score numbers together and divide that number by the total number of credits. This will give you your weighted GPA.

**Unweighted GPA**

Match the numerical grades received in each of your classes to the non-weighted scale number. Determine the number of course credits allotted for each course. Multiply the course credits by the non-weighted scale number for each course to get a final score number for each course. Add all of the final score numbers together and divide that number by the total number of credits. This will provide you with your unweighted GPA.
Guidance and Counseling Options

Cumberland County Technical Education Center has guidance counselors on staff who are “specialists” in both career planning and college admissions requirements. By working with them, students can be assured that the courses they are placed in each year will prepare them for the career goals they have set.

The process for course placement encourages open discussion between students, parents, counselors and teachers so the student is comfortable with his or her schedule and parents are assured that their child is prepared for a successful future.

This Course Description Guide includes the academic and career preparation courses offered for the next school year within each of the programs.
Program of Study Offerings
Science and engineering occupations are leaders in economic competitiveness in an increasingly globalized world. Science and engineering workforces of sufficient size and quality are essential for any 21st century economy to prosper. These professional workforces also are crucial for addressing challenges such as international security, global climate change, and domestic and global health. Of the top 10 highest-paying college majors, seven of them are in engineering.

Our Engineering program engages students in open-ended problem-solving, where they learn to apply the engineering design process to solve real-world problems and help to make the world a better place through innovation. Students will utilize the same industry-leading technology and software present in some of the world’s top companies. They will be immersed in design as they investigate topics such as sustainability, forces, structures, digital electronics and circuit design, manufacturing, and the environment. All of these exposures provide our students with the opportunity to learn about different engineering disciplines before beginning post-secondary education or careers. Additionally, our program provides opportunities for students to develop highly transferable skills in collaboration, communication, and critical thinking, which are relevant for any coursework or career.

This pathway includes a rigorous series of courses designed by Project Lead The Way (a nonprofit, STEM education program taught across the U.S. and endorsed by the nationally recognized College Board). The courses include: Introduction to Engineering Design, Digital Electronics, Principles of Engineering, Environmental Sustainability, Computer Integrated Manufacturing, and Civil Engineering and Architecture. Students who successfully complete CCTEC’s Engineering program and meet the acceptance criteria of Rowan University will automatically be accepted into Rowan’s College of Engineering. Furthermore, as a part of our dual credit arrangement with the University, students will earn dual college engineering credits.
<table>
<thead>
<tr>
<th></th>
<th>CORE</th>
<th>GRADE 9</th>
<th>GRADE 10</th>
<th>GRADE 11</th>
<th>GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGLISH</td>
<td></td>
<td>ENGLISH I</td>
<td>ENGLISH II</td>
<td>ENGLISH III OR AP LANGUAGE/COMP</td>
<td>ENGLISH IV OR AP LITERATURE</td>
</tr>
<tr>
<td>SOCIAL STUDIES</td>
<td></td>
<td>WORLD HISTORY</td>
<td>US HISTORY I</td>
<td>US HISTORY II</td>
<td>AP GOVERNMENT</td>
</tr>
<tr>
<td>MATHEMATICS</td>
<td></td>
<td>GEOMETRY</td>
<td>ALGEBRA II OR PRECALCULUS</td>
<td>PRECALCULUS OR AP CALCULUS AB</td>
<td>AP CALCULUS AB OR AP CALCULUS BC</td>
</tr>
<tr>
<td>SCIENCE</td>
<td></td>
<td>BIOLOGY</td>
<td>CHEMISTRY</td>
<td>PHYSICS OR AP PHYSICS</td>
<td>AP SCIENCE</td>
</tr>
<tr>
<td>HEALTH/PHYSICAL EDUCATION</td>
<td></td>
<td>FITNESS AND HEALTH I</td>
<td>FITNESS AND HEALTH II</td>
<td>FITNESS AND HEALTH III</td>
<td>FITNESS AND HEALTH IV</td>
</tr>
<tr>
<td>CTE MAJOR</td>
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<td>INTRODUCTION TO ENGINEERING DESIGN*</td>
<td>DIGITAL ELECTRONICS</td>
<td>COMPUTER INTEGRATED MANUFACTURING</td>
<td>CIVIL ENGINEERING AND ARCHITECTURE*</td>
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<td>INTERDISCIPLINARY STUDIES</td>
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<td>GRAPHIC DESIGN OR ALGEBRA II (OPTIONAL)</td>
<td>PRINCIPLES OF ENGINEERING*</td>
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<td>GRAPHIC DESIGN OR ELECTIVE</td>
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<td>SPANISH I</td>
<td>SPANISH II</td>
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<td>AP SPANISH</td>
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</tbody>
</table>

* Potential College Credits Awarded by Rowan University
# Engineering Program of Study

## Course Credits

### Freshman
- English I: 5 credits
- World History: 5 credits
- Algebra I or Geometry: 5 credits
- Biology: 5 credits
- Spanish I: 5 credits
- Fitness and Health I: 5 credits
- Graphic Design: 5 credits
- Introduction to Engineering Design: 5 credits

### Sophomore
- English II: 5 credits
- US History I or AP US History I: 5 credits
- Geometry or Algebra II: 5 credits
- Chemistry: 5 credits
- Spanish II: 5 credits
- Fitness and Health II: 5 credits
- Digital Electronics: 5 credits
- Principles of Engineering: 5 credits

### Junior
- English III or AP Language/Comp: 5 credits
- US History II or AP US History II: 5 credits
- Algebra II or Pre-calculus: 5 credits
- Physics or AP Physics I: 5 credits
- Spanish III: 5 credits
- Fitness and Health III: 5 credits
- Computer Integrated Manufacturing: 5 credits
- Environmental Sustainability: 5 credits

### Senior
- English IV/AP Literature/Comp: 5 credits
- AP Government: 5 credits
- Pre-calculus or AP Calculus: 5 credits
- AP Science: 5 credits
- AP Spanish: 5 credits
- Fitness and Health IV: 5 credits
- Civil Engineering and Architecture: 5 credits
- Elective: 5 credits
Course Title: Introduction to Engineering Design  
Grade Level: 9  
Credits: 5

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.

Course Title: Principles of Engineering  
Grade Level: 10  
Credits: 5

Through 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.

Course Title: Digital Electronics  
Grade Level: 10  
Credits: 5

From smart phones 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.

Course Title: Environmental Sustainability  
Grade Level: 11  
Credits: 5

In Environmental Sustainability (ES), students investigate and design solutions in response to real-world challenges related to clean and abundant drinking water, food supply issues, and renewable energy. Applying their knowledge through hands-on activities and simulations, students research and design potential solutions to these true-to-life challenges.
Course Title: Computer Integrated Manufacturing  
Grade Level: 11  
Credits: 5

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.

Course Title: Civil Engineering and Architecture  
Grade Level: 12  
Credits: 5

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 3D architecture design software.
HEALTH SCIENCE AND MEDICINE PROGRAM OF STUDY

Pathway Description

The health care industry is one of the fastest growing sectors in the realm of employment opportunities, as well as the number one employer in Cumberland County. The overall health, both of New Jersey’s economy and its people, is clearly tied to the capabilities of this evolving profession. Our program will help to prepare students for a wide array of career opportunities in the health care field including: nurses, surgical technicians, physicians, dentists, pediatricians, physical therapists, dietitians, pharmacists, and various other health care occupations. The curriculum provides an overview of the different fields present in the health care sector along with targeted courses on systems of the human body, medical terminology, nutrition, and various aspects of clinical research and emergency care.

This pathway includes a rigorous series of courses including: Dynamics of HealthCare, Medical Terminology, Emergency Clinical Care, Scientific Principles of Nutrition, Anatomy and Physiology I & II, and Introduction to Clinical Research.

Students additionally will have the opportunity to earn dual credit by taking these classes through CCTEC’s partnership with Rutgers University. As an additional program feature, students will be able to gain certifications for entry-level health care positions upon high school graduation.
## HEALTH SCIENCE AND MEDICINE PROGRAM OF STUDY
### Course Sequence

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<td>SCIENCE</td>
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<td>FITNESS AND HEALTH II</td>
<td>FITNESS AND HEALTH III</td>
<td>FITNESS AND HEALTH IV</td>
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<td>CTE MAJOR</td>
<td>DYNAMICS OF HEALTH CARE</td>
<td>MEDICAL TERMINOLOGY*</td>
<td>EMERGENCY CLINICAL CARE * &amp; SCIENTIFIC PRINCIPLES OF NUTRITION*</td>
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<td>ANATOMY AND PHYSIOLOGY I *</td>
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* Potential College Credits Awarded by Rutgers University
# Health Science and Medicine Program of Study

## Course Credits

### Freshman
- English I: 5 credits
- World History: 5 credits
- Algebra I or Geometry: 5 credits
- Biology: 5 credits
- Spanish I: 5 credits
- Fitness and Health I: 5 credits
- Applications in Art: 5 credits
- Dynamics of Healthcare: 5 credits

### Sophomore
- English II: 5 credits
- US History I or AP US History I: 5 credits
- Geometry or Algebra II: 5 credits
- Chemistry: 5 credits
- Spanish II: 5 credits
- Fitness and Health II: 5 credits
- Anatomy and Physiology I: 5 credits
- Medical Terminology: 5 credits

### Junior
- English III or AP Language/Comp: 5 credits
- US History II or AP US History II: 5 credits
- Algebra II or Pre-calculus: 5 credits
- Physics or AP Physics I: 5 credits
- Spanish III: 5 credits
- Fitness and Health III: 5 credits
- Anatomy and Physiology II: 5 credits
- Scientific Principles of Nutrition: 2.5 credits
- Emergency Clinical Care: 2.5 credits

### Senior
- English IV or AP Literature /Comp: 5 credits
- AP Government: 5 credits
- Pre-calculus or Calculus: 5 credits
- AP Biology: 5 credits
- AP Spanish: 5 credits
- Fitness and Health IV: 5 credits
- Introduction to Clinical Research: 5 credits
- Elective: 5 credits
Course Title: Dynamics of Health Care in Society  
Grade Level: 9  
Credits: 5

Dynamics of Health Care in Society is an orientation to health care and delivery, from an interdisciplinary perspective, with a focus on process skills to include critical thinking, ethical reasoning, effective communication, and self-directed learning abilities. The professional competencies stress application to general issues and topics common to all health care providers. Emphasis is placed on the role of the health care practitioner as both provider and consumer of health care services.

Course Title: Medical Terminology  
Grade Level: 10  
Credits: 5

Medical Terminology is the study of words that pertain to body systems, anatomy, physiology, medical processes and procedures and a variety of diseases. It provides specialized language for the health care team, enabling health care workers to communicate in an accurate, articulate and concise manner. This course is designed to give the students a comprehensive knowledge of word construction, definition and use of terms related to all areas of medical science. The course includes but is not limited to terms related to anatomy of the human body, functions of health and disease, and the use of language in processing medical/dental records and claim forms.

Course Title: Anatomy and Physiology I  
Grade Level: 10  
Credits: 5

Anatomy and Physiology is the study of the structure and function of the human body. This course follows a sequential development of the major body systems in an organized and structured curriculum. The course is designed to give the students a selective overview of human anatomical structure and an analysis of human physiological principles. Labs will include slide work, dissection of various animals and studies of the human skeleton. The course will also use computer simulated dissection.
Course Title: Anatomy and Physiology II  
Grade Level: 11  
Credits: 5

Anatomy and Physiology II is a continuation of the study of structures and functions of the body from part one. The course examines various systems of the body that were not previously studied in Anatomy and Physiology I. Students gain greater insight into the functioning of the body as a whole and develop a broader perspective on homeostatic imbalances.

Course Title: Scientific Principles of Nutrition  
Grade Level: 11  
Credits: 2.5

Scientific Principles of Nutrition outlines the relationship of diet, lifestyle, and the prevention of disease. An overview of the digestion, absorption, and metabolism of protein, carbohydrates, fat, vitamins, and minerals is provided. Nutrition needs at various stages of the lifespan are stressed. Applying the science of nutrition to your life including needs for fitness and physical activity, evaluating nutrition claims, food labeling, and other consumer concerns are emphasized.

Course Title: Emergency and Clinical Care  
Grade Level: 11  
Credits: 2.5

Emergency and Clinical Care is a course that describes how to respond to emergencies before medical help arrives. The course is designed to give the student the knowledge of how to recognize and respond to an emergency. The intent of the course is to help the student feel more confident in his/her ability to act appropriately in the event of an emergency. Students are prepared to 1) obtain a patient medical history, 2) take and record vital signs relative to medical/dental treatment, and 3) acquire cardiopulmonary resuscitation certification.

Course Title: Introduction to Clinical Research  
Grade Level: 12  
Credits: 5

This course is designed to provide students with a basic understanding of what clinical research is and the scientific principles on which it is based. The course starts with a historical perspective on clinical research and then goes on to explore in detail the following topics: purpose and phases of clinical research, clinical trial development and conduct, ethical and regulatory implications, and the roles and responsibilities of all parties involved in clinical research.
INFORMATION TECHNOLOGY PROGRAM OF STUDY

Pathway Description

Information Technology (IT) remains one of the fastest growing and highest paid employment sectors in the state of New Jersey. The annual average wage for job opportunities in New Jersey’s technology cluster was $103,797 in 2014 (That’s 173% of the statewide average ($60,146) for all industries). Like many other STEM fields, the current demand and supply are mismatched, as computer science career openings outpace students’ skills and interest. Also, like many other fields, computer science interest starts long before a student decides on a major or even applies to college.

Our Information Technology program gives our students access to the very latest in computational thinking. The curriculum empowers students to become creators rather than consumers of the technology, coupled with exploring the impact of computing on society and building skills in digital citizenship and cybersecurity. Through this program students will learn the latest on the creation of apps for mobile devices, game design, programming language, visualization of data, cybersecurity, and designing and implementing user interfaces and web-based databases.

This pathway includes a rigorous series of courses designed by Project Lead The Way (a nonprofit, STEM education program taught across the U.S. and endorsed by the nationally recognized College Board). The courses include: Introduction to Computer Science, Computer Science Principles, Computer Science A, and Cybersecurity. The pathway will also integrate various technology-driven business courses to ensure students have a broader perspective on consumer demands including: Fundamentals of Business, Digital Business Tools, and Digital Technology and Management.
# INFORMATION TECHNOLOGY PROGRAM OF STUDY

## Course Sequence

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<td><strong>INTRODUCTION TO COMPUTER SCIENCE</strong></td>
<td><strong>COMPUTER SCIENCE PRINCIPLES</strong></td>
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<td><strong>ELECTIVE</strong></td>
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</tbody>
</table>
# Information Technology Program of Study

## Course Credits

### Freshman
- English I  
  - 5 credits
- World History  
  - 5 credits
- Algebra I or Geometry  
  - 5 credits
- Biology  
  - 5 credits
- Spanish I  
  - 5 credits
- Fitness and Health I  
  - 5 credits
- Fundamentals of Business  
  - 5 credits
- Introduction to Computer Science  
  - 5 credits

### Sophomore
- English II  
  - 5 credits
- US History I or AP US History I  
  - 5 credits
- Geometry or Algebra II  
  - 5 credits
- Chemistry  
  - 5 credits
- Spanish II  
  - 5 credits
- Fitness and Health II  
  - 5 credits
- Digital Business Tools  
  - 5 credits
- Computer Science Principles  
  - 5 credits

### Junior
- English III or AP Language/Comp  
  - 5 credits
- US History II or AP US History II  
  - 5 credits
- Algebra II or Pre-calculus  
  - 5 credits
- Physics or AP Physics I  
  - 5 credits
- Spanish III  
  - 5 credits
- Fitness and Health III  
  - 5 credits
- Computer Science A  
  - 5 credits
- Business Technology and Management  
  - 5 credits

### Senior
- English IV/AP Literature/Comp  
  - 5 credits
- AP Government  
  - 5 credits
- Pre-calculus or AP Calculus  
  - 5 credits
- AP Science  
  - 5 credits
- AP Spanish  
  - 5 credits
- Fitness and Health IV  
  - 5 credits
- Cybersecurity  
  - 5 credits
- Elective  
  - 5 credits
Course Title: Fundamentals of Business
Grade Level: 9
Credits: 2.5

Fundamentals of Business provides students with the understanding of how business impacts and is influenced by a global economy in the 21st century. This course is designed to strengthen students’ skills across the curriculum and acquaint students with the activities associated with a business. The goals of this course are to introduce students to the different internal and external elements of a business and the context in which a business operates. Students will gain a comprehensive understanding of business procedures and issues emerging in today’s global economy. Fundamentals of Business explores common elements and characteristics of business such as marketing, accounting, economics, management, technology, and ethics. Topics are grouped in occupational clusters to assist students in choosing pathways of interest for college and/or a career. Overall, the course gives students a broad exposure to business operations and a solid background for additional business courses.

Course Title: Financial Literacy
Grade Level: 9
Credits: 2.5

This course is required for graduation, and will emphasize finance, economics, business, and entrepreneurial literacy as it applies to everyday life situations. Personal decision-making regarding budgeting, career choices, investments, loans and insurance will be covered.

Course Title: Introduction to Computer Science
Grade Level: 9
Credits: 5

Designed to be the first computer science course for students who have never programmed before, ICS is an optimal starting point for the PLTW Computer Science program. Students work in teams to create apps for mobile devices using MIT App Inventor®. They explore the impact of computing in society and build skills in digital citizenship and cybersecurity. Beyond learning the fundamentals of programming, students build computational thinking skills by applying computer science to collaboration tools, modeling and simulation, and data analysis. In addition, students transfer the understanding of programming gained in App Inventor to text-based programming in Python® and apply their knowledge to create algorithms for games of chance and strategy.
Course Title: AP Computer Science Principles  
Grade Level: 10  
Credits: 5

Using Python® as a primary tool and incorporating multiple platforms and languages for computation, this course aims to develop computational thinking, generate excitement about career paths that utilize computing, and introduce professional tools that foster creativity and collaboration. While this course can be a student's first in computer science, students without prior computing experience are encouraged to start with Introduction to Computer Science. CSP helps students develop programming expertise and explore the workings of the Internet. Projects and problems include app development, visualization of data, cybersecurity, and simulation.

Course Title: Digital Business Tools  
Grade Level: 10  
Credits: 5

Students will develop proficiency with Microsoft Access®, Excel®, Word®, and PowerPoint® software, as well as integrate these software programs. This course is designed to focus on advanced functions that will help students learn to navigate one of the most utilized software programs throughout high school and college.

Course Title: AP Computer Science A  
Grade Level: 11  
Credits: 5

CSA focuses on further developing computational thinking skills through the medium of Android™ App development for mobile platforms. The course utilizes industry-standard tools such as Android Studio, Java™ programming language, XML, and device emulators. Students collaborate to create original solutions to problems of their own choosing by designing and implementing user interfaces and Web-based databases. The course curriculum is a College Board-approved implementation of AP CS A.

Course Title: Business Technology and Management  
Grade Level: 11  
Credits: 5

Students will evaluate career information and learn the different forms of business organization and how they operate. Emphasis is placed on the impact of technology on business organization, human resources, marketing, and finance. Each student develops a business plan.
Cybersecurity (SEC) introduces the tools and concepts of cybersecurity and encourages students to create solutions that allow people to share computing resources while protecting privacy. Nationally, computational resources are vulnerable and frequently attacked; in SEC, students solve problems by understanding and closing these vulnerabilities. This course raises students' knowledge of and commitment to ethical computing behavior. It also aims to develop students' skills as consumers, friends, citizens, and employees who can effectively contribute to communities with a dependable cyber-infrastructure that moves and processes information safely.
LAW ENFORCEMENT PROGRAM OF STUDY

Pathway Description

New Jersey ranks as one of the top states when it comes to employment of protective service occupations. The State also ranks as the second highest in the nation for wage and compensation levels for protective service and law enforcement professionals. Our Law Enforcement Program is a four year multi-level program designed for students interested in pursuing careers in public safety such as police officers, detectives and criminal investigators, Federal Bureau of Investigation (FBI) agents, correctional officers, private detectives, investigators, and various other protective service professions. The curriculum provides an overview of the entire criminal justice system’s response to crime from the commission of the crime, to law enforcement response, to the administration (courts and prosecution), to corrections.

The core courses include: Introduction to Law Enforcement, Administration of Justice, Cultural Diversity Issues in Criminal Justice, Crime Analysis and Mapping, Criminalistics, Police Role in the Community, and Public Administration. These courses will provide an overview in areas such as public safety, corrections, private security, criminal investigation, forensic science, homeland security and cybersecurity.

CCTEC has also established relationships with key law enforcement professionals along with dual credit at Cumberland County College for the provided Law Enforcement courses.
# LAW ENFORCEMENT PROGRAM OF STUDY

**Course Sequence**

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<td><strong>CTE MAJOR</strong></td>
<td><strong>INTRODUCTION TO LAW ENFORCEMENT</strong></td>
<td>*<em>ADMINISTRATION OF JUSTICE <em>/CULTURAL DIVERSITY ISSUES IN CRIMINAL JUSTICE</em></em></td>
<td><strong>CRIME ANALYSIS AND MAPPING</strong></td>
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</tbody>
</table>

* Potential College Credits Awarded by Cumberland County College
# Law Enforcement Program of Study

## Course Credits

### Freshman
- English I: 5 credits
- World History: 5 credits
- Algebra I or Geometry: 5 credits
- Biology: 5 credits
- Spanish I: 5 credits
- Fitness and Health I: 5 credits
- Applications in Art: 5 credits
- Introduction to Law Enforcement: 5 credits

### Sophomore
- English II: 5 credits
- US History I or AP US History I: 5 credits
- Geometry or Algebra II: 5 credits
- Chemistry: 5 credits
- Spanish II: 5 credits
- Fitness and Health II: 5 credits
- Administration of Justice: 2.5 credits
- Cultural Diversity Issues in Criminal Justice: 2.5 credits
- Police Role in the Community: 5 credits

### Junior
- English III or AP Language/Comp: 5 credits
- US History II or AP US History II: 5 credits
- Algebra II or Pre-calculus: 5 credits
- Physics or AP Physics I: 5 credits
- Spanish III: 5 credits
- Fitness and Health III: 5 credits
- Crime Analysis and Mapping: 5 credits
- Criminalistics: 5 credits

### Senior
- English IV/AP Literature/Comp: 5 credits
- AP Government: 5 credits
- Pre-calculus or AP Calculus: 5 credits
- AP Science: 5 credits
- AP Spanish: 5 credits
- Fitness and Health IV: 5 credits
- Public Administration: 5 credits
- Elective: 5 credits
Law Enforcement Program of Study

Course Descriptions

Course Title: Introduction to Law Enforcement
Grade Level: 9
Credits: 5

Law Enforcement broadly refers to any system by which some members of society act in an organized manner to enforce the law by discovering, deterring, rehabilitating or punishing persons who violate the rules and norms governing that society. The Law Enforcement and Homeland Security curriculum is designed to prepare students for a career opportunity in the Law Enforcement field. The course instruction includes specialized training in the following areas: Law and Lawmaking, Advocacy and Settling Disputes, The Court System and Lawyers, and Crime in America and Criminal Law. The goal of the course is to provide a real work environment where students utilize skills and concepts learned in class and apply them in the field. The curriculum includes theory and a physical fitness component. Emphasis is also placed on job seeking/keeping skills, such as effective communication, customer service, teamwork, filling out a job application, building a resume, and interviewing techniques. The appropriate use of technology and industry-standard equipment is an integral part of this course. The students will develop personal growth, and the necessary attitudes and skills needed for seeking employment. They will become self-confident and understand the responsibilities and roles of a police officer.

Course Title: Administration of Justice
Grade Level: 10
Credits: 5

In this course, students will examine the manner in which the criminal justice system operates in U.S. society—from initial incident to final disposition.

Course Title: Diversity Issues in Criminal Justice
Grade Level: 10
Credits: 2.5

Students in this course will critically examine issues of race, gender, and other diversity issues in the development, organization, and operation of the U.S. criminal justice system.
Course Title: Police Role in the Community  
Grade Level: 10  
Credits: 2.5

In this course, students will analyze the philosophical and historical role of a police presence, the rights of individual citizens, and the policies, procedures, and practices of police agencies in the community.

Course Title: Crime Analysis and Mapping  
Grade Level: 11  
Credits: 5

This course presents an overview of and hands-on experience in determining the significant features of crime pattern analysis including mapping and the interpretation of data.

Course Title: Criminalistics  
Grade Level: 11  
Credits: 5

This course outlines a descriptive presentation of forensic science practices, focusing on how enforcement practitioners examine crime scenes to identify, collect, and preserve physical evidence.

Course Title: Public Administration  
Grade Level: 12  
Credits: 5

In this course, students will examine the relationships between government and business, and contemporary theories of leadership practices and principles.
STUDIO PRODUCTION AND BROADCASTING PROGRAM OF STUDY

Pathway Description

Careers in communications are found at all levels of an organization. In particular, the video field offers a wide range of specialties to choose from. Our program focuses on the methods and techniques for reporting, producing, and delivering news programs and other digital content via television and video/film media. It is a four-year pathway designed for students interested in pursuing careers in the digital media industry including: professional broadcast journalists, editors, producers, directors, managers, and various other video broadcasting professions.

Major areas of study include: the principles of broadcast technology; broadcast reporting, on- and off-camera and microphone procedures and techniques; program, sound, and video/film editing; program design and production; media law and policy; and professional standards and ethics.

The core courses include: Introduction to Media Production and Broadcasting, Digital Video Production, Motion Graphic Design, Studio Production, Digital Production and Audio Engineering, and Digital Film Making and Appreciation. Various CCTEC courses will align with Rowan University’s College of Communication and Creative Arts course offerings.
# Studio Production and Broadcasting Program of Study

## Course Sequence

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<tbody>
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<td><strong>English</strong></td>
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<td>English II</td>
<td>English III/AP Language/Comp</td>
<td>English IV/AP Literature</td>
</tr>
<tr>
<td><strong>Social Studies</strong></td>
<td>World History</td>
<td>US History I or AP US History I</td>
<td>US History II or AP US History II</td>
<td>AP Government</td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td>Algebra I or Geometry</td>
<td>Geometry or Algebra II</td>
<td>Algebra II or Precalculus</td>
<td>Precalculus or AP Calculus</td>
</tr>
<tr>
<td><strong>Science</strong></td>
<td>Biology</td>
<td>Chemistry</td>
<td>Physics or AP Physics I</td>
<td>AP Science</td>
</tr>
<tr>
<td><strong>Health/Physical Education</strong></td>
<td>Fitness and Health I</td>
<td>Fitness and Health II</td>
<td>Fitness and Health III</td>
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<td><strong>CTE Major</strong></td>
<td>Intro to Media Production and Broadcasting</td>
<td>Digital Video Production</td>
<td>Studio Production and Digital Editing</td>
<td>Digital Film Making &amp; Appreciation</td>
</tr>
<tr>
<td><strong>Interdisciplinary Studies</strong></td>
<td>Graphic Design</td>
<td>Motion Graphic Design</td>
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<tr>
<td><strong>World Language</strong></td>
<td>Spanish I</td>
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<td>Spanish III</td>
<td>AP Spanish</td>
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</tbody>
</table>
Studio Production and Broadcasting Program of Study

Course Credits

**Freshman**
- English I 5 credits
- World History 5 credits
- Algebra I or Geometry 5 credits
- Biology 5 credits
- Spanish I 5 credits
- Fitness and Health I 5 credits
- Graphic Design 5 credits
- Introduction to Media Production and Broadcasting 5 credits

**Sophomore**
- English II 5 credits
- US History I or AP US History I 5 credits
- Geometry or Algebra II 5 credits
- Chemistry 5 credits
- Spanish II 5 credits
- Fitness and Health II 5 credits
- Digital Video Production 5 credits
- Motion Graphic Design 5 credits

**Junior**
- English III or AP Language/Comp 5 credits
- US History II or AP US History II 5 credits
- Algebra II or Pre-calculus 5 credits
- Physics or AP Physics I 5 credits
- Spanish III 5 credits
- Fitness and Health III 5 credits
- Studio Production and Digital Editing 5 credits
- Digital Production and Audio Engineering 5 credits

**Senior**
- English IV or AP Literature/Comp 5 credits
- AP Government 5 credits
- Pre-calculus or AP Calculus 5 credits
- AP Science 5 credits
- AP Spanish 5 credits
- Fitness and Health IV 5 credits
- Digital Film Making and Appreciation 5 credits
- Elective 5 credits
Course Title: Introduction to Media Production and Broadcasting  
Grade Level: 9  
Credits: 5

Introduction to Media Production and Broadcasting provides a hands-on overview of the practical theory and technology currently applied in the fields of television, film, and new media. This course will provide students with the opportunity to learn the basics of television, especially Electronic News Gathering (ENG) production. It will cover three aspects of television: broadcasting, technology and production. This course covers the history of broadcasting and technology, aspects of preproduction, process of ENG production and basic computer video editing. Emphasized in this course are genres of television broadcasting, methods and practical applications of television preproduction including script writing, and storyboarding. The course will also apply the responsibilities of production personnel including ENG setup and the execution of camera shots and moves. Students will demonstrate the ability to work independently and cooperatively to complete projects based on curriculum. From elements of digital media, video and sound capture, editing, and lighting, students will rotate through workshops and assignments that will give them the necessary foundations to pursue more field-specific courses in media production.

Course Title: Motion Graphic Design  
Grade Level: 10  
Credits: 5

This course will teach students how to put together interesting, compelling motion graphics for video production using Motion and Live Type software. Students will learn to define vector graphics and multimedia concepts, which relate to motion graphics production. Students will learn professional and industry relevant tools and techniques. The emphasis will be placed on the process of creating effective, efficient, and dynamic motion graphics/animations for broadcast TV, DVD, and the Web. Students will explore each stage of the development and production process with the intention of encouraging individual working style and problem solving. Students become familiar with industry standard tools in order to make video productions communicate more effectively. This course will teach students successful motion graphic application through the use of storyboarding, composition and scene sequencing techniques, emphasizing editing and compression methods for broadcast TV, DVD and the Web.
**Course Title: Digital Video Production**  
**Grade Level: 10**  
**Credits: 5**

This course will allow students to refine and expand the skills acquired in Introduction to Media Production and Broadcasting and receive advanced instruction in newsgathering techniques. Students will further develop skills in script writing, storyboarding and digital editing. Students will also learn advanced techniques in audio production. Emphasis will be placed on completing independent and cooperative production assignments in which students will demonstrate the ability to organize ideas, complete preproduction writing assignments and produce ENG segments for broadcasting.

**Course Title: Studio Production and Digital Editing**  
**Grade Level: 11**  
**Credits: 5**

This course will allow students to use production skills acquired in previous classes to produce news segments and receive advanced instruction in digital editing. Students will understand the importance of ENG/EFP equipment and demonstrate the ability to produce on location. Students will add definition to nonlinear editing by adding computer-generated images and graphics. Emphasis will be placed on completing proficient ENG/EFP productions which demonstrate the ability to conceive production ideas, complete preproduction writing assignments, and organize a production crew while working professionally outside of the classroom studio to complete television segments. Students are also required to produce in-studio segments with professionalism and skills acquired in Digital Video Production using the control room and studio equipment proficiently, produce morning announcements for the high school and segments for a video yearbook. Students will also develop a documentary during the course.

**Course Title: Digital Production and Audio Engineering**  
**Grade Level: 11**  
**Credits: 5**

The purpose of this course is to teach students the technological and philosophical concepts of digital music engineering and production on an introductory level. Students will have the ability to explore their musical creativity and talents by recording their own productions as well as properly record live music, film audio, video game audio, and studio recording.

**Course Title: Digital Film Making and Appreciation**  
**Grade Level: 12**  
**Credits: 5**

Students will critically view, write about, and discuss a wide spectrum of narrative films to have a greater understanding of the ways film is used to convey meaning, express point-of-
view, and influence the viewer. Students will develop their aesthetic perception skills by distinguishing, discussing and writing about various film genres. They will analyze content and context of historical and contemporary films as well as the cultural comparison of the film content. Students will engage in critiques, both written and verbal, of each film. Through producing their own digital films, students will gain an understanding of filmmaking from conception to exhibition. Students will develop their own creative expression and problem solving skills by producing their own films. Through careful analysis of professional films and directorial styles, and intense production and aesthetic creation of student films, this course will develop independent filmmakers.
Program Offerings
AUTOMOTIVE TECHNOLOGY PROGRAM

Pathway Description

The automotive industry is quickly evolving and the need for highly-skilled automotive professionals is at the forefront of this new era of mobility. Automotive Technology is designed to meet the ongoing demand for trained, certified Automotive Technicians. This program offers hands-on training to repair and maintain the mechanical and electronic systems on-board today’s vehicles.

Our Automotive Technology program includes high tech training in the following areas: suspension and steering, brakes, electronical/electronic systems, engine performance, engine repair, automatic transmission, transaxle, manual drive train and axles, and heating and air conditioning. Additionally, students are introduced to the workings of computer diagnostics as they relate to modernized transmission systems. These areas combine to give the students an exposure to the entire field. Students will work on vehicles using state of the art equipment in their performance of routine maintenance, and diagnosis and repair.

Our program is certified by the National Automotive Technicians Education Foundation (NATEF). Automotive Technology prepares students to take the Automotive Service Excellence (ASE) Certification Test to gain an entry level position in the field. Students will also have the skills and training to move into higher levels of training for more specialized positions.
# AUTOMOTIVE TECHNOLOGY PROGRAM

## Course Sequence

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<td><strong>SOCIAL STUDIES</strong></td>
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<td><strong>ALGEBRA I OR GEOMETRY</strong></td>
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<tr>
<td><strong>INTERDISCIPLINARY STUDIES</strong></td>
<td><strong>GRAPHIC DESIGN</strong></td>
<td><strong>AUTOMOTIVE TECHNOLOGY I</strong></td>
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<td><strong>AUTOMOTIVE TECHNOLOGY III</strong></td>
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<td><strong>WORLD LANGUAGE OR ELECTIVE</strong></td>
<td><strong>WORLD LANGUAGE OR ELECTIVE</strong></td>
</tr>
</tbody>
</table>
# Automotive Technology Program

## Course Credits

### Freshman
- English I 5 credits
- World History 5 credits
- Algebra I or Geometry 5 credits
- Integrated Science 5 credits
- Spanish I 5 credits
- Fitness and Health I 5 credits
- Graphic Design 5 credits
- CTE Seminar 5 credits

### Sophomore
- English II 5 credits
- US History I or AP US History I 5 credits
- Geometry or Algebra II 5 credits
- Biology 5 credits
- Spanish II 5 credits
- Fitness and Health II 5 credits
- Automotive Technology I 10 credits

### Junior
- English III or AP Language/Comp 5 credits
- US History II or AP US History II 5 credits
- Algebra II or Pre-calculus 5 credits
- Chemistry 5 credits
- World Language or Elective 5 credits
- Fitness and Health III 5 credits
- Automotive Technology II 10 credits

### Senior
- English IV/AP Literature/Comp 5 credits
- History Elective or Internship 5 credits
- Math Elective or Internship 5 credits
- Science elective or Internship 5 credits
- World Language or Elective 5 credits
- Fitness and Health IV 5 credits
- Automotive Technology III 10 credits
Automotive Technology Program

Course Descriptions

Course Title: Career and Technical Education Seminar
Grade Level: 9  
Credits: 5

This course was designed to assist in the transition of students from middle school to high school and to introduce them to the multiple career pathways in their chosen CTE program. The course will serve as an introduction to CCTEC and will provide academic, social, and emotional support to our incoming freshmen. The primary focus of the course will be the development of critical skills pertaining to: studying, personal finance, career exploration, and the exploration of character traits that are vital for academic success. Students will actively participate in projects that promote cooperative learning, community involvement, problem solving, and character education. Students will also be introduced to their CTE program and complete projects in their chosen CTE field.

Course Title: Automotive Technology I
Grade Level: 10  
Credits: 10

Automotive Technology I is an intense course that provides instruction in both automotive mechanical and electronic systems. As a first year student in Automotive Technology, classes will focus on the structure of automobiles as well as their functionality. Students will be given a hands-on approach to the different topics covered. The curriculum is designed to prepare students for a career opportunity in the automotive field. The course instruction includes specialized training in the following areas: Heating and Air Conditioning, Brake Systems, and Engine Repair. Social skills are also embedded into the curriculum; the students will develop personal growth, as well as the necessary attitudes and skills needed for seeking employment. The purpose of the program is to ensure students are eligible to successfully complete the ASE certification exams.

Course Title: Automotive Technology II
Grade Level: 11  
Credits: 10

Automotive Technology II is an extension of Automotive Technology I. As before, the course provides instruction in both automotive mechanical and electronic systems. As a second year student in Automotive Technology, classes will focus on both automotive mechanical and electronic systems. Students will be given a hands-on approach to the different topics covered and will be given the opportunity to pick apart an automobile and put it back together. The curriculum is designed to prepare students for a career opportunity in the automotive field. The
course instruction includes specialized training in the following areas: Steering and Suspension, Manual Drive Train Axles, and Automatic and Manual Transmission. The purpose of the program is to ensure students are eligible to successfully complete the ASE certification exams.

**Course Title: Automotive Technology III**  
**Grade Level: 12**  
**Credits: 10**

Automotive Technology III is an extension of Automotive Technology II. As before, the course provides instruction in both automotive mechanical and electronic systems. As a third year student in Automotive Technology, classes will focus on both automotive mechanical and electronic systems. Students will be given a hands-on approach to the different topics covered and will be given the opportunity to pick apart an automobile and put it back together. The curriculum is designed to prepare students for a career opportunity in the automotive field. The course instruction includes specialized training in the following areas: Engine Performance and Electronic and Electrical Systems. The purpose of the program is to ensure students are eligible to successfully complete the ASE certification exams.
CONSTRUCTION TRADES PROGRAM

Pathway Description

The construction industry has experienced a winding road of recovery. The good news for those considering a construction job is that the industry is starting to hit its stride. The Labor Department remains upbeat on this sector, predicting overall employment growth of 13.6%, or almost 520,000 new jobs by the year 2024. Plumbers, electricians, carpenters, painters and construction managers will be needed to build new structures and update existing buildings. Building professionals must have a broad base of skills and knowledge about the upkeep of buildings, including metal work and electrical equipment. They must also be fully knowledgeable about federal and state OSHA regulations.

Our Construction Trades program will help to prepare students for careers in the construction industry. The program offers a blend of carpentry, plumbing/HVAC, and electrical skills. Students begin with carpentry and then explore the fundamentals of electrical wiring and pipe fitting. They will be trained to operate hand and power tools and other specialized equipment.

At the conclusion of the program, these three areas will culminate in the construction of a fully functioning, sustainable structure. The students will be evaluated on accuracy, speed, and quality of workmanship required to pursue a successful career in the construction trades pathway.
# CONSTRUCTION TRADES PROGRAM

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<td>English I</td>
<td>English II</td>
<td>English III or AP Language/Comp</td>
<td>English IV or AP Literature/Comp</td>
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<td>US History I or AP US History I</td>
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<td>History Elective or Internship</td>
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<td><strong>Mathematics</strong></td>
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<td>Math Elective or Internship</td>
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<td><strong>Science</strong></td>
<td>Integrated Science</td>
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<td>Chemistry</td>
<td>Science Elective or Internship</td>
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<td><strong>Health/Physical Education</strong></td>
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<td>Fitness and Health III</td>
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<td>Spanish II</td>
<td>Elective</td>
<td>Elective</td>
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</tbody>
</table>
## Construction Trades Program
### Course Credits

**Freshman**
- English I: 5 credits
- World History: 5 credits
- Algebra I or Geometry: 5 credits
- Integrated Science: 5 credits
- Spanish I: 5 credits
- Fitness and Health I: 5 credits
- Graphic Design: 5 credits
- CTE Seminar: 5 credits

**Sophomore**
- English II: 5 credits
- US History I or AP US History I: 5 credits
- Geometry or Algebra II: 5 credits
- Biology: 5 credits
- Spanish II: 5 credits
- Fitness and Health II: 5 credits
- Construction Trades I: 10 credits

**Junior**
- English III or AP Language/Comp: 5 credits
- US History II or AP US History II: 5 credits
- Algebra II or Pre-calculus: 5 credits
- Chemistry: 5 credits
- World Language or Elective: 5 credits
- Fitness and Health III: 5 credits
- Construction Trades II: 10 credits

**Senior**
- English IV/AP Literature/Comp: 5 credits
- History Elective or Internship: 5 credits
- Math Elective or Internship: 5 credits
- Science elective or Internship: 5 credits
- World Language or Elective: 5 credits
- Fitness and Health IV: 5 credits
- Construction Trades III: 10 credits
Course Title: Career and Technical Education Seminar  
Grade Level: 9  
Credits: 5

This course was designed to assist in the transition of students from middle school to high school and to introduce them to the multiple career pathways in their chosen CTE program. The course will serve as an introduction to CCTEC and will provide academic, social, and emotional support to our incoming freshmen. The primary focus of the course will be the development of critical skills pertaining to: studying, personal finance, career exploration, and the exploration of character traits that are vital for academic success. Students will actively participate in projects that promote cooperative learning, community involvement, problem solving, and character education. Students will also be introduced to their CTE program and complete projects in their chosen CTE field.

Course Title: Construction Trades I  
Grade Level: 10  
Credits: 10

Construction Trades I prepares students with foundational skills and knowledge in the field of construction. Students will follow the NCCER core curriculum in learning basic safety, construction applied math, proper use of hand and power tools, blueprint reading, basic rigging, and communication and employability skills. Fundamentals of construction are introduced including floor, wall and roof systems along with structure enclosure and an introduction to electrical and plumbing. Students will be involved in actual construction projects in school.

Course Title: Construction Trades II  
Grade Level: 11  
Credits: 10

Construction Trades II continues with hands-on experiences to enhance a student’s abilities in the construction industry. Students will receive advanced training in enclosure techniques, interior finishing, construction design and contracting concepts. Students will be involved in the actual construction-related projects in school and the community.
Course Title: Construction Trades III
Grade Level: 12
Credits: 10

Construction Trades III builds upon Construction Trades II and continues with hands-on experiences to enhance a student’s abilities in the construction industry. Students receive additional advanced training in the areas studied thus far. Student learning will culminate into the construction of a fully functioning, sustainable structure. The students will be evaluated on accuracy, speed, and quality of workmanship required to pursue a successful career in the construction trades pathway.
COSMETOLOGY PROGRAM

Pathway Description

According to the United States Department of Labor, the U.S. employment rates for personal appearance professionals such as hairdressers, hairstylists, cosmetologists, skin care specialists and shampooers are projected to grow. Job growth in cosmetology is expected to rise at a rate of 13% by 2022. This growth could lead to greater demand for hairdressers, stylists, barbers, and cosmetologists over the next decade.

The field of cosmetology offers a variety of options for students to choose from in terms of career pathways. This occupation also allows individuals to choose which work environment suits them best. Our Cosmetology program is a four-year pathway designed for students interested in pursuing careers in the field of beauty that include: hairstylists, barbers, estheticians, manicurists, makeup artists, beauty product designers, and salon managers. In the first and second years, students are taught the basics of draping, shampooing, manicuring, pedicuring, hair cutting and styling, permanent waving, facials, make-up, and hair removal. The third and fourth years concentrate on hair coloring, chemical hair straightening, advanced nail techniques, barbering, hair extensions, and microdermabrasion.

The Cosmetology program fulfills the licensing requirements of the New Jersey State Board of Cosmetology and provides students with the 1,000 hours needed to take the state exam. Students who have completed the program are given the opportunity to take the State Board Examination to become a Certified Cosmetologist.
## COSMETOLOGY PROGRAM
### Course Sequence

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<tr>
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<td><strong>ART I</strong></td>
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### Cosmetology Program

**Course Credits**

**Freshman**
- English I: 5 credits
- World History: 5 credits
- Algebra I or Geometry: 5 credits
- Integrated Science: 5 credits
- Spanish I: 5 credits
- Fitness and Health I: 5 credits
- Cosmetology I: 10 credits

**Sophomore**
- English II: 5 credits
- US History I or AP US History I: 5 credits
- Geometry or Algebra II: 5 credits
- Biology: 5 credits
- Spanish II: 5 credits
- Fitness and Health II: 5 credits
- Cosmetology II: 10 credits

**Junior**
- English III or AP Language/Comp: 5 credits
- US History II or AP US History II: 5 credits
- Algebra II or Pre-calculus: 5 credits
- Chemistry: 5 credits
- World Language or Elective: 5 credits
- Fitness and Health III: 5 credits
- Cosmetology III: 10 credits

**Senior**
- English IV/AP Literature/Comp: 5 credits
- History Elective or Internship: 5 credits
- Math Elective or Internship: 5 credits
- Science elective or Internship: 5 credits
- World Language or Elective: 5 credits
- Fitness and Health IV: 5 credits
- Cosmetology IV: 10 credits
Course Title: Cosmetology I  
Grade Level: 9  
Credits: 10

The Cosmetology I course is the foundation for the Cosmetology Program. It will enable students to comprehend and perform entry level skills in wet hairstyling, including braiding, roller placement, pin curls, and fingerwaves, shampooing and scalp treatments, properties of hair and scalp, infection control, and basic nail techniques. State laws, rules and regulations, related theory, safety, sanitation and professionalism will also be integrated in this course of study.

Course Title: Cosmetology II  
Grade Level: 10  
Credits: 10

The Cosmetology II course entails more progressive practical skills – chemical texture services/permanent waving and its related chemistry; haircutting; and thermal styling, inclusive of blow dry styling, thermal curling, and thermal pressing. Skin structure, diseases and disorders, hair removal, facials, and massage and make-up techniques will also be studied in this course. During this level students are eligible to apply for a State of New Jersey Cosmetology Student Permit. Related theory, safety, sanitation, and professionalism are integrated in this course of study.

Course Title: Cosmetology III  
Grade Level: 11  
Credits: 10

The Cosmetology III course continues to build more progressive practical skills – techniques in hair coloring and its related chemistry, men’s hairstyling and grooming, chemical texture services/relaxers, wigs and hair enhancements, professional shave, and employment skills. During this level students will also work on clientele in the school salon to begin to prepare for the globally competitive workforce. Related theory, safety, sanitation, and professionalism are integrated in this course of study.

Course Title: Cosmetology IV  
Grade Level: 12  
Credits: 10

The Cosmetology IV course is the conclusion to the Cosmetology Program. During the first half of the school year students will continue to build their practical skills in advanced nail
techniques, principles of hair design, chemistry and electricity, anatomy review, and the salon business. During this level students will also work on clientele in the school salon to prepare for the globally competitive workforce. The second half of the school year is dedicated to state board licensure preparation. Licensure preparation is designed to prepare the senior cosmetology student to take the New Jersey State Board of Cosmetology Licensing Exam. It will include both practical and theoretical skills necessary to successfully pass the exam and obtain the state license required to seek employment in the salon Industry.
CULINARY ARTS PROGRAM

Pathway Description

The U.S. Department of Labor reports that job growth in the culinary arts field is expected to increase in the next decade. The field of Culinary Arts offers extensive career opportunities in an exciting and challenging profession. Individuals interested in careers in the culinary arts have substantial and varied opportunities. These individuals can choose to work in any food service facility including restaurant settings, resorts, cruise ships, hotels, cafeterias and bakeries. This field can even offer work as private chefs/cooks, caterers, consultants or managers. Employment opportunities are not geographically limited; positions in culinary arts can be obtained in nearly every region of the country and around the globe. Industry professionals can obtain positions as head cooks, sous chefs, sub chefs, executive chefs, chefs de cuisine, cafeteria chefs or short order cooks. These individuals can specialize in certain types of cuisine or food preparation. The possibilities in the culinary arts field for interested individuals are endless.

Our program prepares students for a professional role in the fast growing commercial food industry. Students begin with basic food preparation skills and advance to areas such as purchasing, managing, and leading. The program emphasizes safety and sanitation along with the proper use of equipment and utensils. The curriculum combines theoretical foundations of terminology, culinary skills, safety, and industry standards with practical, hands-on experiences.

Upon program completion, students will take the ServSafe New Jersey certification for safe food handling. Students will also have the skills and training necessary to continue their studies at a culinary institute or to enter into the work force upon graduation.
# CULINARY ARTS PROGRAM

## Course Sequence

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<th>GRADE 10</th>
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<tr>
<td><strong>ENGLISH</strong></td>
<td>ENGLISH I</td>
<td>ENGLISH II</td>
<td>ENGLISH III OR AP LANGUAGE/COMP</td>
<td>ENGLISH IV OR AP LITERATURE/COMP</td>
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<td>GEOMETRY OR ALGEBRA II</td>
<td>ALGEBRA II OR PRECALCULUS</td>
<td>MATH ELECTIVE OR INTERNSHIP</td>
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<td>FITNESS AND HEALTH II</td>
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<td>FITNESS AND HEALTH IV</td>
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<td>CTE SEMINAR</td>
<td>CULINARY ARTS I</td>
<td>CULINARY ARTS II</td>
<td>CULINARY ARTS III</td>
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<td><strong>INTERDISCIPLINARY STUDIES</strong></td>
<td>ART I</td>
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<td>CULINARY ARTS II</td>
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## Culinary Arts Program

### Course Credits

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<td>World History</td>
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<td>Integrated Science</td>
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<td>Spanish I</td>
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<td>Fitness and Health I</td>
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<tr>
<td>Applications in Art</td>
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<tr>
<td>CTE Seminar</td>
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<td>Biology</td>
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<td>Spanish II</td>
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<td>Fitness and Health II</td>
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<td>Algebra II or Pre-calculus</td>
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<td>Chemistry</td>
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<td>World Language or Elective</td>
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<td>Fitness and Health III</td>
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<tr>
<td>Culinary Arts III</td>
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</tbody>
</table>
Course Title: Career and Technical Education Seminar  
Grade Level: 9  
Credits: 5

This course was designed to assist in the transition of students from middle school to high school and to introduce them to the multiple career pathways in their chosen CTE program. The course will serve as an introduction to CCTEC and will provide academic, social, and emotional support to our incoming freshmen. The primary focus of the course will be the development of critical skills pertaining to: studying, personal finance, career exploration, and the exploration of character traits that are vital for academic success. Students will actively participate in projects that promote cooperative learning, community involvement, problem solving, and character education. Students will also be introduced to their CTE program and complete projects in their chosen CTE field.

Course Title: Culinary Arts I  
Grade Level: 10  
Credits: 10

The first year course of the Culinary Arts program provides a working knowledge of classical culinary techniques through theory and hands-on experiences. Students learn basic skills through instruction and practice in sanitation, hot food production, meat identification and fabrication, pantry preparation, breakfast cookery, and basic culinary skills, as well as in baking and pastries. The Culinary Arts program prepares students for entry into a variety of culinary employment opportunities.

Course Title: Culinary Arts II  
Grade Level: 11  
Credits: 10

The second year of the Culinary Arts program builds upon the first year in providing a working knowledge of classical culinary techniques through theory and hands-on experiences. Students will learn basic culinary skills through instruction and practice in budgeting, purchasing, baking, culinary nutrition, and hot food preparation. The Culinary Arts program combines a foundation of culinary and management skills that meet the industry demands.
Course Title: Culinary Arts III
Grade Level: 12

Credits: 10

The final year of the Culinary Arts program builds upon the first and second year in providing a working knowledge of classical culinary techniques through theory and hands-on experiences. Students will learn basic culinary skills through instruction and practice in hot food preparation, breakfast cookery, cold food preparation, and table service. Students will also have the opportunity to become certified in ServSafe.
WELDING PROGRAM

Pathway Description

From skyscrapers to cars, bridges to boats – welding shapes lives and communities every day. In fact, most people are surprised to learn that half of our nation’s total gross national product includes welding work, products, and services of some kind. From manufacturing to construction, the demand for welders is strong. Specifically, in the state of New Jersey, hundreds of welding jobs are expected to become available at the brand new Holtec Center being built in Camden. The Center is being configured to foster a synergistic environment for developing innovative designs for the power industry and for the manufacturing of complex weldments in a 21st century world.

Over the course of four years, the CCTEC welding program will help to develop student skills in the following areas: shielded metal arc welding, gas metal arc welding, gas tungsten arc welding, plasma arc welding, and oxyfuel gas cutting. Students will also be able to prepare parts from simple sketches or blueprints, prepare welded joints from welding symbol information, and make minor external repairs to equipment and accessories.

Prior to program completion, students will take the American Welding Society Entry Level Welding Certification Workmanship Qualification Test. CCTEC has also established partnerships with Holtec to bring job opportunities to students in our welding program.
# WELDING PROGRAM

## Course Sequence

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<td><strong>CTE MAJOR</strong></td>
<td><strong>CTE SEMINAR/FINANCIAL LITERACY</strong></td>
<td><strong>WELDING I</strong></td>
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<td><strong>WELDING III</strong></td>
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</table>
# Welding Program

**Course Credits**

**Freshman**
- English I: 5 credits
- World History: 5 credits
- Algebra I or Geometry: 5 credits
- Integrated Science: 5 credits
- Spanish I: 5 credits
- Fitness and Health I: 5 credits
- Applications in Art: 5 credits
- CTE Seminar: 5 credits

**Sophomore**
- English II: 5 credits
- US History I or AP US History I: 5 credits
- Geometry or Algebra II: 5 credits
- Biology: 5 credits
- Spanish II: 5 credits
- Fitness and Health II: 5 credits
- Welding I: 10 credits

**Junior**
- English III or AP Language/Comp: 5 credits
- US History II or AP US History II: 5 credits
- Algebra II or Pre-calculus: 5 credits
- Chemistry: 5 credits
- World Language or Elective: 5 credits
- Fitness and Health III: 5 credits
- Welding II: 10 credits

**Senior**
- English IV/AP Literature/Comp: 5 credits
- History Elective or Internship: 5 credits
- Math Elective or Internship: 5 credits
- Science elective or Internship: 5 credits
- World Language or Elective: 5 credits
- Fitness and Health IV: 5 credits
- Welding III: 10 credits
Welding Program

Course Descriptions

Course Title: Career and Technical Education Seminar
Grade Level: 9
Credits: 5

This course was designed to assist in the transition of students from middle school to high school and to introduce them to the multiple career pathways in their chosen CTE program. The course will serve as an introduction to CCTEC and will provide academic, social, and emotional support to our incoming freshmen. The primary focus of the course will be the development of critical skills pertaining to: studying, personal finance, career exploration, and the exploration of character traits that are vital for academic success. Students will actively participate in projects that promote cooperative learning, community involvement, problem solving, and character education. Students will also be introduced to their CTE program and complete projects in their chosen CTE field.

Course Title: Welding I
Grade Level: 10
Credits: 10

This course will provide students with an introduction to the welding field. Students will spend time in class studying terminology, safety, set-up and shut-down of all welding equipment and related tools of the trade. Time will also be spent in the welding shop so students will get hands-on experiences with oxy-acetylene cutting, welding and brazing along with arc welding.

Course Title: Welding II
Grade Level: 11
Credits: 10

This course will build on skills learned in Welding I. A higher percentage of time will be spent in the shop reviewing the basic skills along with learning Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW). These welding skills will be developed by progressing from flat, horizontal, vertical and overhead positions. In addition to this, pipe welding in the horizontal rolled, horizontal fixed and vertical fixed position are taught.
This course will provide students with the opportunity to apply and develop skills learned in Welding I and II by laying out and fabricating school projects and doing job cards for the community. Students will also be able to prepare parts from simple sketches or blueprints, prepare welded joints from welding symbol information, and make minor external repairs to equipment and accessories. Prior to program completion, students will take the American Welding Society Entry Level Welding Certification Workmanship Qualification Test.
Academics and Electives
Course Title: English I
Grade Level: 9
Credits: 5

In 9th grade English, students will critically read grade-level works of literature and informational texts. Students will closely analyze for literal and inferred meaning and support their thinking by effectively citing textual evidence. Students will expand their literary worldview through a review of classic and contemporary literature that represents a variety of time periods and cultures. There will be an increased emphasis on building a strong academic and domain-specific vocabulary. Students will acquire general academic words from content-specific texts and independently integrate domain-specific words into reading, writing, and speaking building up to college and career readiness. The students will develop the skill, fluency, and concentration to produce high-quality writing, as well as the capacity to revise and edit their writing, as well as peer writing, over multiple drafts. Students will write routinely over shorter and extended time frames for a range of tasks, purposes, and audiences; including research writing, argumentative writing, creative writing, and explanatory writing. Students will be challenged to initiate and participate effectively in a range of collaborative groups and participate in discussions with peers on grade 9 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively. Students of various backgrounds, interests, and skills will be empowered with the ability to begin to exercise their critical thinking and problem solving skills in order to enrich their personal and professional lives.

Course Title: English II
Grade Level: 10
Credits: 5

In 10th grade English, students will closely and critically read increasingly complex works of literature and informational texts. Students will continue to analyze, infer, and support their thinking by citing textual evidence, developing an increased sophistication in choice of textual support and paraphrasing. Students will build on prior learning through on-going review and synthesis of classic and contemporary literature that represents an increasing variety of time periods and cultures. There will be a continued emphasis on building a strong academic and domain-specific vocabulary. Students will acquire general academic words from content-specific texts and independently integrate domain-specific words into reading, writing, and speaking. The students will demonstrate increased complexity in their ability to produce high-quality writing, as well as the capacity to revise and edit their writing, as well as peer writing, over multiple drafts. Students will continue to write routinely over shorter and extended time frames for a range of tasks, purposes, and audiences; including research writing, argumentative writing, creative writing, and explanatory writing. Students will be challenged to make choices and take ownership in a range of collaborative groups and participate in discussions with peers on grade 10 topics, texts, and issues, building on others’ ideas and expressing their own clearly.
and persuasively. Students of various backgrounds, interests, and skills will continue to build their critical thinking and problem solving skills to grow personally, academically, and in their career programs.

**Course Title: English III**  
**Grade Level: 11**  
**Credits: 5**

In 11th grade English, students will continue to closely and critically read complex works of literature, making increasingly sophisticated personal connections, connections to other texts, and/or global/historical connections when relevant. Students will synthesize multiple texts to identify shared topics or themes, and identify multiple themes/main ideas in a single literary work or informational text. Students will determine what the text actually means, considering satire, sarcasm, irony, and understatement, describing how an author uses various rhetorical strategies to advance that purpose, and analyzing how and why those choices contribute to the overall effectiveness of the text. There will be an increased emphasis on building strong academic and domain-specific vocabulary to prepare students for college placement exams and advanced career options as well as to improve grade-level comprehension. Students will continue to develop their reading and writing skills and apply a greater depth of knowledge and analysis as they progress through the year. Students will be expected to write regularly, for a variety of purposes, and to have developed an expertise in using technology proficiently for production, publication, and collaboration. Historical documents and primary texts will be discussed, analyzed, and evaluated. Students will write about topics of increased complexity, drawing from these documents. By grade 11, students will have developed a shared culture and classroom community, and will continue to problem-solve, create, and think collaboratively in extended projects and discussions. This collaboration will start to mirror the expectations of the workplace and higher-education, preparing students for college and careers.

**Course Title: Advanced Placement English Language and Composition**  
**Grade Level: 11**  
**Credits: 5**

The AP English Language and Composition course aligns to an introductory college-level rhetoric and writing curriculum, which requires students to develop evidence-based analytic and argumentative essays that proceed through several stages or drafts. Students evaluate, synthesize, and cite research to support their arguments. Throughout the course, students develop a personal style by making appropriate grammatical choices. Additionally, students read and analyze the rhetorical elements and their effects in non-fiction texts, including graphic images as forms of text, from many disciplines and historical periods. By grade 11, students will have developed a shared culture and classroom community, and will continue to problem-solve, create, and think collaboratively in extended projects and discussions. This collaboration will start to mirror the expectations of higher-education, preparing students for college and careers. Students who choose to take the AP English Language and Composition Test in May
and score at an appropriate level may be offered credit for the first year college composition course. An AP test score of 4 or 5 is recommended to ensure college credit transferability. This course may also qualify for dual credit through an accredited college.

**Course Title:** English IV  
**Grade Level:** 12  
**Credits:** 5

In 12th grade English, students will continue to closely and critically read increasingly sophisticated works of literature, using their wealth of cross-curricular knowledge to make relevant and pertinent global/historical connections. Students will independently research and synthesize academic resources and primary texts to support a position or make a claim. Students will continue to analyze elements of satire, sarcasm, irony, and understatement. By building a repertoire of college and career level academic and domain-specific vocabulary, students will build a strong foundation to support their future goals. Students will continue to develop their reading and writing skills and be challenged to apply even greater depth of knowledge and analysis as they progress through the year, working to college-level/post-secondary reading and writing. Students will be expected to continue to write regularly, and for a variety of purposes, and demonstrate expertise in using technology proficiently for production, publication, and collaboration. Historical documents and primary texts will be discussed, analyzed, and evaluated. Students will write about topics of increased complexity, drawing from these documents. By grade 12, students will have developed a shared culture and classroom community, and problem-solving, creation, and collaboration will mirror the environments of the workplace and college, demonstrating that students are ready to meet the demands and expectations of career and higher education.

**Course Title:** Advanced Placement English Literature and Composition  
**Grade Level:** 12  
**Credits:** 5

The AP English Literature and Composition course aligns to an introductory college-level literary analysis course. The course engages students in the close reading and critical analysis of imaginative literature to deepen their understanding of the ways writers use language to provide both meaning and pleasure. As they read, students consider a work’s structure, style, and themes, as well as its use of figurative language, imagery, symbolism, and tone. Writing assignments include expository, analytical, and argumentative essays that require students to analyze and interpret literary works. By grade 12, students will have developed a shared culture and classroom community, and problem-solving, creation, and collaboration will mirror the environments of college, demonstrating that students are ready to meet the demands and expectations of career and higher education. Students will have the option of taking the Advanced Placement test in May for college credit. An AP test score of 4 or 5 is recommended to ensure college credit transferability. This course may also qualify for dual credit through an accredited college.
Health and Physical Education

Course Title: Health and Physical Education I
Grade Level: 9
Credits: 5

In order for students to pursue a successful career and technical education, they must lead a healthy and active lifestyle. Our physical education program addresses the issues of the total body, physically and mentally. The curriculum is intertwined so that the concepts learned in the freshman year are reinforced in the upperclassmen years. In participating in the Health and PE program at CCTEC, students will be equipped with the information and skills they will need to make good decisions, and to become responsible, active, healthy and productive citizens. In Grade 9, Health and Physical Education is divided into four units of instruction: Fitness for Life, Project Adventure, Competitive Sports, and Health. The units are not meant to be taught in isolation from one another. They are meant to be continuously connected to one another throughout the school year as a reinforcement of our Health and PE philosophy: “Fit for Life.” Students will be introduced to a very unique program called Project Adventure in which they will engage in experiential learning techniques that will teach them critical life skills such as: responsible personal and social behavior, the ability to problem-solve, and the ability to use effective interpersonal skills. Specifically, in the Health unit, there is a focus on bullying and suicide prevention, character development and communication skills, and reproductive health. Students develop an understanding of the importance of bullying and suicide prevention by developing skills to build positive self-esteem, coping skills, and strategies for the prevention of unhealthy feelings and practices. Students are introduced to contraception and reproductive health and making positive choices when in relationships.

Course Title: Health and Physical Education II
Grade Level: 10
Credits: 5

Building upon the ideals learned during the ninth grade year, students in tenth grade Health and PE will continue to engage in learning about critical life skills. The philosophy of “Fit for Life” will continue to be emphasized, as students learn to incorporate this idea into both physical and mental aspects of their lives along with how this idea fits in with their career interests and goals. Students will once again engage in four units of study: Fitness for Life, Project Adventure, Competitive Sports, and Health/Driver’s Education. As a part of the health unit, students will engage in New Jersey standards linked to Driver Education. As a culminating assessment, students will take the written portion of the NJ mandated driver’s test in order to assist them in preparing to obtain a New Jersey Driver’s License.
Course Title: Health and Physical Education III  
Grade Level: 11  
Credits: 5

Building upon the ideals learned during the tenth grade year, students in eleventh grade Health and PE will continue to engage in learning about critical life skills. The philosophy of “Fit for Life” will continue to be emphasized, as students learn to incorporate this idea into both physical and mental aspects of their lives along with how this idea fits in with their career interests and goals. Students will once again engage in four units of study: Fitness for Life, Project Adventure, Competitive Sports, and Health. As a part of the health unit, students will engage in studies on mental and physical wellness, nutrition, dietary trends, disease prevention, health-related fitness components, proper usage of medicines, stress management, and the basics of first aid/CPR.

Course Title: Health and Physical Education IV  
Grade Level: 12  
Credits: 5

Building upon the ideals learned during the eleventh grade year, students in twelfth grade Health and PE will continue to engage in learning about critical life skills. The philosophy of “Fit for Life” will continue to be emphasized, as students learn to incorporate this idea into both physical and mental aspects of their lives along with how this idea fits in with their career interests and goals. Students will once again engage in four units of study: Fitness for Life, Project Adventure, Competitive Sports, and Health. As a part of the health unit, students will engage in studies on healthy and unhealthy decision-making, medical advancements, disease prevention, societal impact of drug abuse, healthy relationships, domestic violence, unique family structures, pregnancy and parenting strategies, core ethical values, communication skills, issues facing individuals with disabilities, health issue solutions, and emergency response and CPR.
Mathematics

Course Title: Algebra I
Grade Level: 9
Pre-Requisite: Pre-Algebra

Credits: 5

The fundamental purpose of this course is to formalize and extend the mathematics that students learned in the middle grades. Many of the concepts presented in Algebra I are progressions of the concepts that were started in grades 6 through 8. The critical areas deepen and extend understanding of linear and exponential relationships by contrasting them with each other and by applying linear models to data that exhibit a linear trend. Students also engage in methods for analyzing, solving, and using quadratic functions. In the context of a career and technical school, this course will offer activities, performance tasks, and projects that link the students’ specific program interests to the content and skills covered. The skills of constructing and interpreting graphs and collecting and analyzing data are applicable to the CTE courses offered at the school. This course will also involve work with more complicated equations and inequalities, additional applications, functions and their graphs, systems of equations, polynomials, factoring, and various other topics. Students should be proficient working with functions and decimals without a calculator. The Mathematical Practice Standards apply throughout the course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

Course Title: Geometry
Grade Level: 9, 10
Pre-Requisite: Algebra I

Credits: 5

The fundamental purpose of the course in Geometry is to formalize and extend students’ geometric experiences from the middle grades. Students explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. In the context of a career and technical school, this course will offer activities, performance tasks, and projects that link the students’ specific program interests to the content and skills covered. The skills of creating two-dimensional and three-dimensional drawings, accuracy with measurement, and demonstrating logic and reasoning are applicable to the CTE courses offered at the school. Additionally, important differences exist between this Geometry course and the historical approach taken in Geometry classes. For example, transformations are emphasized early in this course. The class starts with two-dimensional geometry and its functional uses, and it is extended to coordinate with three-dimensional geometry. Also included are angles related to parallel lines and circles as well as proving triangles congruent by use of reasoning. Formulas are used in conjunction with finding area, volume, and perimeter of various polygons. The Mathematical Practice Standards apply
throughout the course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

**Course Title: Algebra II**  
**Grade Level:** 9, 10, 11  
**Pre-Requisite:** Algebra I and Geometry

Building on their work with linear, quadratic, and exponential functions, students extend their repertoire of functions to include polynomial, rational, and radical functions. Students work closely with the expressions that define the functions, and continue to expand and hone their abilities to model situations and to solve equations, including solving quadratic equations over the set of complex numbers and solving exponential equations using the properties of logarithms. The students will review, strengthen, and expand the skills acquired in Algebra I. In the context of a career and technical school, this course will offer activities, performance tasks, and projects that link the students’ specific program interests to the content and skills covered. The skills of constructing and interpreting graphs and understanding and applying boundaries within inequalities are applicable to the CTE courses offered at the school. Topics will also include linear equations and inequalities, graphing, complex numbers, and quadratics. The Mathematical Practice Standards apply throughout the course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

**Course Title: Trigonometry/Pre-calculus**  
**Grade Level:** 10, 11, 12  
**Pre-Requisite:** Algebra II

Trigonometry/Pre-calculus creates a solid foundation for further mathematical endeavors. The intent of this course is to enable students to move toward independent learning within the context of review and extension, as well as to provide an introduction of topics essential for further study. Attention will be given to strengthening skills learned in previous courses and using these skills to develop problem solving strategies in advanced mathematical topics. In the context of a career and technical school, this course will offer activities, performance tasks, and projects that link the students’ specific program interests to the content and skills covered. The skills of solving for missing lengths and angle measurements within right triangle trigonometry are applicable to the CTE courses offered at the school. This is a full-year course that, in addition to right triangle trigonometry, will also cover basic circular trigonometric functions. Additional topics will include: the six trigonometric functions and their applications, trigonometric identities, the conic sections, real number systems, functions and their graphs, quadratic equations, logarithms, complex number systems, combinations, permutations, and probability. The Mathematical Practice Standards apply throughout the course and, together
with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

Course Title: Calculus
Grade Level: 11, 12  
Credits: 5
Pre-Requisite: Trigonometry/Pre-calculus

The fundamental purpose of this course is to develop the students’ understandings of the concepts of calculus and provide experiences with its methods and applications. The course emphasizes a multi-representational approach to calculus, with concepts, results, and problems being expressed graphically, numerically, analytically, and verbally. The connections among these representations also are important. Students will learn to appreciate the value of calculus as the mathematics of change and motion. This course will prepare students for further study in all branches of higher mathematics, science, and related fields. Topics that will be included are limits and continuity, differentiation with applications, and integration with applications. Calculus is not only the language for expressing physical laws in precise terms, but it is also a tool for studying these laws. Technology is used regularly to reinforce these approaches, to confirm written work, to implement experimentation, and to assist in interpreting results. In the context of a career and technical school, this course will offer activities, performance tasks, and projects that link the students’ specific program interests to the content and skills covered. The Mathematical Practice Standards apply throughout the course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

Course Title: Advanced Placement Calculus
Grade Level: 11, 12  
Credits: 5
Pre-Requisite: Trigonometry/Pre-calculus

AP Calculus is a course intended for students who have a thorough knowledge of college preparatory mathematics, including algebra, axiomatic geometry, trigonometry, and analytic geometry. It is an introduction to calculus with elementary functions. The topics in the scope of the course are divided into three broad categories: limits and continuity, differential calculus, and integral calculus. Students will learn to appreciate the value of calculus as the mathematics of change and motion. In the context of a career and technical school, this course will offer activities, performance tasks, and projects that link the students’ specific program interests to the content and skills covered. This course will prepare students for further study in all branches of higher mathematics, science, and related fields. Students will receive instruction that emphasizes topics found on the AP Calculus exam. This course may qualify for dual credit through an accredited college. An AP test score of 4 or 5 is recommended to ensure college credit transferability.
Science

Course Title: Biology
Grade Level: 9, 10
Credits: 5

Biology is an introduction to the study of living things and their interdependence with the environment. This course will emphasize the development of students’ scientific process skills, laboratory techniques, and an understanding of the fundamental principles of living organisms. Students will develop understandings of key concepts that help them make sense of life science. The ideas are building upon students’ science understanding of disciplinary core ideas, science and engineering practices, and crosscutting concepts from earlier grades. There are five life science topics in high school: 1) Structure and Function, 2) Inheritance and Variation of Traits, Matter and Energy in Organisms and Ecosystems, 4) Interdependent Relationships in Ecosystems, and 5) Natural Selection and Evolution. The performance expectations for high school life science blend core ideas with scientific and engineering practices and crosscutting concepts to support students in developing useable knowledge that can be applied across the science disciplines. This course is supplemented with a required laboratory component corresponding to the material studied in the classroom. Students will gain skills using laboratory apparatuses and correct laboratory techniques and procedures along with being able to properly report their findings. In the context of a career and technical school, this course will also offer activities, projects, and labs that link the students’ specific program interests to the content and skills covered.

Course Title: Integrated Science
Grade Level: 9
Credits: 5

Students in Integrated Science develop their understanding of the major ideas in the physical, life, and earth sciences. These ideas include the most fundamental concepts from chemistry, physics, and earth and space sciences, but are intended to leave room for expanded study in upper-level high school courses. These performance expectations blend the major ideas with scientific and engineering practices and crosscutting concepts to support students in developing useable knowledge to explain ideas across the science disciplines. In the integrated science performance expectations at the high school level, there is a focus on several scientific practices. These include developing and using models, planning and conducting investigations, analyzing and interpreting data, using mathematical and computational thinking, and constructing explanations; and using these practices to demonstrate understanding of the major ideas. Students are also expected to demonstrate understanding of several engineering practices, including design and evaluation. This course is supplemented with a required laboratory component corresponding to the material studied in the classroom. Students will gain skills using laboratory apparatuses and correct laboratory techniques and procedures along with being able to properly report their findings. In the context of a career and technical school, this
course will also offer activities, projects, and labs that link the students’ specific program interests to the content and skills covered.

Course Title: Chemistry
Grade Level: 9, 10, 11
Credits: 5
Pre-Requisite: Biology

Students in Chemistry will develop an understanding of the major ideas in the physical sciences. These ideas include the most fundamental concepts from chemistry, but are intended to leave room for expanded study in upper-level high school courses. These performance expectations blend the major ideas with scientific and engineering practices and crosscutting concepts to support students in developing useable knowledge to explain ideas across the science disciplines. In the chemistry performance expectations at the high school level, there is a focus on several scientific practices. These include: developing and using models, planning and conducting investigations, analyzing and interpreting data, using mathematical and computational thinking, and constructing explanations. Students will use these practices to demonstrate understanding of the major ideas. They are also expected to demonstrate understanding of several engineering practices, including design and evaluation. This course is supplemented with a required laboratory component corresponding to the material studied in the classroom. Students will gain skills using laboratory apparatuses and correct laboratory techniques and procedures along with being able to properly report their findings. In the context of a career and technical school, this course will also offer activities, projects, and labs that link the students’ specific program interests to the content and skills covered.

Course Title: Physics
Grade Level: 9, 10, 11
Credits: 5
Pre-Requisite: Chemistry and Algebra I

In Physics, students will study the physical world around them, including kinematics, dynamics, energy, momentum, electrostatics, circuits, and waves. Students will analyze and model real physical systems and predict changes in order to engineer possible solutions to problems. Student will accomplish this through guided, cooperative, and independent inquiry-based activities in which they apply their conceptual understanding. This course is supplemented with a required laboratory component corresponding to the material studied in the classroom. Students will gain skills using laboratory apparatuses and correct laboratory techniques and procedures along with being able to properly report their findings. In the context of a career and technical school, this course will also offer activities, projects, and labs that link the students’ specific program interests to the content and skills covered.
Course Title: Advanced Placement Biology
Grade Level: 10, 11, 12  
Credits: 5
Pre-Requisite: Biology

This course is designed for the individual whose intentions are to pursue a science or medical-related major in college. The Advanced Placement level explores the finer details of biological processes and requires a highly motivated student. The student will be required to recall many of the principles acquired in biology and chemistry. These skills will be utilized in many of the college-level laboratory exercises that support the content. Topics to be covered include molecules and cells, energy and metabolism, heredity and evolution, organisms and populations, ecology, and a comparative invertebrate study. This course is supplemented with a required laboratory component corresponding to the material studied in the classroom.

Students will gain skills using laboratory apparatuses and correct laboratory techniques and procedures along with being able to properly report their findings. The successful completion and comprehension of these topics will prepare the student for the Advanced Placement National exam. This course may qualify for dual credit through an accredited college. An AP test score of 4 or 5 is recommended to ensure college credit transferability. In the context of a career and technical school, this course will also offer activities, projects, and labs that link the students' specific program interests to the content and skills covered.

Course Title: Advanced Placement Physics I
Grade Level: 11, 12  
Credits: 5
Pre-Requisite: Physics and Algebra II

This is a course for the college-bound student who has demonstrated a proficiency in science and mathematics. The principles of Trigonometry will be introduced in connection with physical concepts. An understanding of the basic principles involved and the ability to apply these principles, along with the necessary mathematical tools in the solution of problems, will be a major goal of this program. The program will cover a broad range of physical topics that form the basis of a one-year terminal college course. The course provides a foundation in physics for the student in life sciences, pre-medicine, and applied sciences, as well as other fields not directly related to science. Advanced physics or engineering programs in college may require additional course work. AP Physics 1 is an algebra-based, introductory college-level physics course that explores topics such as Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. Through inquiry-based learning, students will develop scientific critical thinking and reasoning skills. This course requires that 25 percent of the instructional time be spent in hands-on laboratory work, with an emphasis on inquiry-based investigations that provide students with opportunities to apply the science practices. The laboratory program will include procedures, experiments, and projects designed to illustrate physical principles, data collection methodologies, and the appropriate analysis of physical data. Lab procedures will include data collection using classical and computer interfaced data collection equipment, as well as
computer-simulated data. This course may qualify for dual credit through an accredited college. An AP test score of 4 or 5 is recommended to ensure college credit transferability. In the context of a career and technical school, this course will also offer activities, projects, and labs that link the students’ specific program interests to the content and skills covered.

Course Title: Advanced Placement Physics II
Grade Level: 11, 12
Pre-Requisite: Physics and Algebra II

This is a course for the college-bound student who has demonstrated a proficiency in science and mathematics. The principles of Calculus will be introduced in connection with physical concepts. An understanding of the basic principles involved and the ability to apply these principles, along with the necessary mathematical tools in the solution of problems, will be a major goal of this program. AP Physics II is an algebra-based, introductory college-level physics course that explores topics such as fluid statics and dynamics; thermodynamics with kinetic theory; PV diagrams and probability; electrostatics; electrical circuits with capacitors; magnetic fields; electromagnetism; physical and geometric optics; and quantum, atomic, and nuclear physics. Through inquiry-based learning, students will develop scientific critical thinking and reasoning skills. This course requires that 25 percent of the instructional time be spent in hands-on laboratory work, with an emphasis on inquiry-based investigations that provide students with opportunities to apply the science practices. Lab procedures will include data collection using classical and computer interfaced data collection equipment, as well as computer-simulated data. This course may qualify for dual credit through an accredited college. An AP test score of 4 or 5 is recommended to ensure college credit transferability. In the context of a career and technical school, this course will also offer activities, projects, and labs that link the students’ specific program interests to the content and skills covered.

Course Title: Advanced Placement Chemistry
Grade Level: 11, 12
Pre-Requisite: Chemistry

The goal of the AP Chemistry course is to act as a supplement to a first-year college or university general chemistry course. Some topics such as stoichiometry, atomic structure, electron configuration, VSEPR structures, Lewis structures, gas laws, phases and phase changes, and thermodynamics that were covered in students’ previous chemistry classes will be covered in a much greater depth. New topics that also will be covered at a college level are oxidation reduction chemistry, equilibrium and constants, electrochemistry, nuclear chemistry, and reaction rates. There is a greater emphasis placed on the lab section of the course when compared to previous science classes. Labs will be expected to be performed in a professional manner and at a level equivalent to what would be experienced in a college or university. This course may qualify for dual credit through an accredited college. An AP test score of 4 or 5 is
recommended to ensure college credit transferability. In the context of a career and technical school, this course will also offer activities, projects, and labs that link the students' specific program interests to the content and skills covered.
Social Studies

Course Title: World History
Grade Level: 9  
Credits: 5

The ninth grade World History course provides students with a comprehensive and interdisciplinary approach to studying history and its relationships to present-day society. The course begins with a segment on digital literacy and teaching the students to become responsible digital citizens. Elements of responsible digital literacy will be integrated throughout the course over the ninth grade year. In the realm of history, the course will cover World History from 1350 to the present. It begins with the emergence of the first global age, emphasizing technological and economic development based on trade and the growth of empires. The course will then lay the foundations for the modern era beginning with the Renaissance and proceeding through the Scientific Revolution, Reformation, and Enlightenment. The third unit centers on industrialism, imperialism, and political revolution in the 18th and 19th centuries. The second semester begins with World War I, emphasizing its causes and the consequences that led to the political and economic developments of the interwar period and the outbreak of World War II. The fifth unit is an investigation into the Cold War and the impact of the bipolar system on decolonization and independence movements. The course concludes with the study of contemporary issues, such as population growth, the environment, human rights, the proliferation of intergovernmental organizations, and the impact of threats, such as terrorism on national security. Throughout this course, students will be challenged to recognize the continuity of human behavior through time and to engage in analysis and synthesis utilizing primary documents. Students will also engage in various project-based learning modules, writing, and Document-Based Question (DBQ) projects that may include content matter focusing on specific career and technical programs.

Course Title: United States History I
Grade Level: 10  
Credits: 5

This course is designed to provide students with an in-depth examination of the political, economic, and social development of the United States. It will cover topics from Westward Expansion through the Great Depression and New Deal. The year will begin with a review of US expansionist policy prior to the Civil War and then continue with US expansionist policy through the closing of the frontier in 1890 with a focus on conflicts between the US government and Native American nations. Next, students will study the topics of Industrialization, Immigration, Urbanization, and Progressivism to describe changes in the U.S. as the country moved from an agrarian to an industrial society. In this unit, students will examine how the labor movement tried to improve conditions for all workers and how progressive reformers attacked social, political, and economic problems. Students will then examine how the US developed as a world power through a unit on imperialism and WWI. The year will conclude
with a study of the Era between the World Wars, where students will learn about the Roaring Twenties, Great Depression, and New Deal. This course will also allow students to analyze and synthesize materials at a high level and will give them an opportunity to examine historical information from a variety of sources. Students will also engage in various project-based learning modules, writing, and Document-Based Question (DBQ) projects that may include content matter focusing on specific career and technical programs.

Course Title: Pre-Advanced Placement United States History I
Grade Level: 10
Credits: 5

The Pre-Advanced Placement course in United States History I is designed to provide students with the analytical skills and factual knowledge necessary to deal critically with the problems and materials in United States history between the years of 1607-1865. The Pre-AP U.S. History I course focuses on the development of historical thinking skills (chronological reasoning, comparing and contextualizing, crafting historical arguments using historical evidence, and interpreting and synthesizing historical narrative) and an understanding of content learning objectives organized around seven themes, such as identity, peopling, and America in the world. The program prepares students for intermediate and advanced college courses by making demands upon them equivalent to those made by full-year introductory college courses. This approach involves the use of a basic college-level textbook and the examination of supplemental readings in the forms of documents, essays, or books on special themes. Students will also engage in various project-based learning modules, writing, and Document-Based Question (DBQ) projects that may include content matter focusing on specific career and technical programs. After completion of AP United States History II, students will be eligible to take the Advanced Placement examination. These courses may qualify for dual credit through an accredited college. An AP test score of 4 or 5 is recommended to ensure college credit transferability.

Course Title: United States History II
Grade Level: 11
Credits: 5

This course is designed to provide students with an overview of the political, economic, and social development of the United States between 1920 and the present. This course continues the study of United States history begun in the previous year. Units of study will include those of the capitalist economic system, giving special attention to the Great Depression and current economic theories and practices; the causes of World War II and its effects upon global and domestic developments; a comparative study of various political systems; and tracing and evaluating the development of United States foreign policy, giving specific attention to our involvement in the Cold War. Students will also engage in various project-based learning modules, writing, and Document-Based Question (DBQ) projects that may include content matter focusing on specific career and technical programs.
Course Title: Advanced Placement United States History II  
Grade Level: 11  
Credits: 5

The Advanced Placement program in United States History II is designed to provide students with the analytical skills and factual knowledge necessary to deal critically with problems and materials in United States history between the years 1865 and the present. The AP U.S. History II course focuses on the development of historical thinking skills (chronological reasoning, comparing and contextualizing, crafting historical arguments using historical evidence, and interpreting and synthesizing historical narrative) and an understanding of content learning objectives organized around seven themes, such as identity, peopling, and America in the world. This program will prepare students for intermediate and advanced college courses by providing them with tasks equivalent to those made by full year introductory college courses. This approach involves the use of a college-level textbook and the examination of supplemental readings in the forms of documents, essays, or books on special themes. Students will also engage in various project-based learning modules, writing, and Document-Based Question (DBQ) projects that may include content matter focusing on specific career and technical programs. Students in this course will also be given the opportunity to take the Advanced Placement Examination given in May. This course may qualify for dual credit through an accredited college. An AP test score of 4 or 5 is recommended to ensure college credit transferability.

Course Title: Advanced Placement United States Government and Politics  
Grade Level: 11  
Credits: 5

AP United States Government and Politics introduces students to key political ideas, institutions, policies, interactions, roles, and behaviors that characterize the political culture of the United States. The course examines politically significant concepts and themes through which students learn to apply disciplinary reasoning, assess causes and consequences of political events, and interpret data to develop evidence-based arguments. Students will also engage in various project-based learning modules, writing, and Document-Based Question (DBQ) projects that may include content matter focusing on specific career and technical programs. Students in this course will also be given the opportunity to take the Advanced Placement Examination given in May. This course may qualify for dual credit through an accredited college. An AP test score of 4 or 5 is recommended to ensure college credit transferability.
Visual and Performing Arts

Course Title: Applications in Art
Grade Level: 9  
Credits: 5

This one-year course introduces students to the Elements of Art and Principles of Design while developing drawing skills, painting techniques, sculpting experiences, and printmaking. Studio experiences in the classroom will give students opportunities to experience a variety of media (pencil, pen, ink, charcoal, pastel, watercolor, and tempera paint) while developing students’ individual styles and creative problem solving skills. Students will demonstrate their ability to respond, to analyze and to interpret their own artwork and the work of others through discussions, critiques, and writings. The goal is to encourage students to utilize creative, flexible thinking and risk-taking to advance in the job training and/or education necessary for their chosen career.

Course Title: Graphic Design
Grade Level: 9  
Credits: 5

The Graphic Design course allows students to engage in the creative process that combines art and technology to communicate ideas. The designer works with a variety of communication tools in order to visually convey a message for a client’s product or service to a particular target audience. Students will work on projects utilizing industry standard software and hardware in a classroom environment that stimulates a real-world design studio. Students will be introduced to the basic design principles and processes that must be followed in order to successfully complete projects that meet specific criteria. Students will become familiar with industry standard software such as Adobe Photoshop, Illustrator and InDesign. Additionally, students will become familiar with post-production techniques for finishing, mounting, and the creation of mock-ups. In addition to the computer and software portion of the course, students will properly handle and use digital cameras, scanners, and other various output devices, such as printers and backup storage disks. The goal is to encourage students to utilize creative, flexible thinking and risk-taking to advance in the job training and/or education necessary for their chosen career. This course will also include a basic understanding of skills a graphic designer needs to be successful in this field as well as various career options a designer can pursue.
World Language

Course Title: Spanish I  
Grade Level: 9  
Credits: 5

As part of a career and technical education, learning another language can be instrumental in providing students with additional communication skills. Spanish I will offer activities and projects that link specific program interests to the content and skills covered. Students will be introduced to common vocabulary, phrases and concepts necessary for daily interpersonal interaction. Emphasis will be placed on basic communication and comprehension in everyday situations, i.e. survival skills. Students will gain a working knowledge of the basic structure of the target language using the present tense. Students will engage in activities such as, the creation and performance of original dialogues, question and answer situations as posed by the teacher or other students, and various paired and group projects all centered in thematic units. Students will begin to talk about topics and situations that are of interest to them, their friends and the target language community. They will begin to speak Spanish and will discover how they can greet others in Spanish and talk to them about the daily routines of student life. Gradually, they will develop their ability to understand spoken and written Spanish. Thematic learning objectives are presented within the framework of the three modes of communication, as outlined by the American Council on the Teaching of Foreign Languages (ACFTL): Interpersonal, Interpretive and Presentational. All activities and assignments are aligned with the three modes and with the New Jersey Standards for Learning for the Novice-Mid level. The textbook series, Realidades, includes many online resources for students to be able to practice with outside of school.

Course Title: Spanish II  
Grade Level: 10  
Credits: 5

Spanish II is designed for students who have completed one year of Spanish I or who have passed a placement test with a sufficient score. Second year students will learn to use different verb tenses (present and past tenses), continue to build vocabulary, and become more proficient in speaking and comprehension skills. As a part of a career and technical education, learning another language can be instrumental in providing students with additional communication skills. Spanish II will offer activities and projects that link specific program interests to the content and skills covered. Thematic learning objectives are presented within the framework of the three modes of communication, as outlined by the American Council on the Teaching of Foreign Languages (ACFTL): Interpersonal, Interpretive and Presentational. All activities and assignments are aligned with the three modes and with the New Jersey Standards for Learning for the Novice-High level. The textbook series, Realidades, includes many online resources for students to be able to practice with outside of school.
Course Title: Spanish III
Grade Level: 11
Credits: 5

Spanish III is designed for students who have completed Spanish I and II. It starts with a strong language program in the beginning levels. Students in the upper levels of study are most successful when earlier levels have featured thematic instruction with integrated vocabulary, grammar, communication and culture. The third year will provide further development in the areas of speaking, listening and writing. As a part of a career and technical education, learning another language can be instrumental in providing students with additional communication skills. Spanish III will offer activities and projects that link specific program interests to the content and skills covered. This course will build communicative activities and pronunciation skills using song and various supplemental resources. It also builds bridges to cultural understanding through readings on cultural products, practices and comparisons.

Course Title: Advanced Placement Spanish IV
Grade Level: 12
Credits: 5

The AP Spanish Language and Culture Curriculum presents six primary learning objectives areas within the three modes of communication described by the Standards for Foreign Language Learning in the 21st Century: Interpersonal, Interpretive, and Presentational. These six primary learning objective areas identify what students should know and be able to do across the three modes. The list of primary learning objective areas include: Spoken Interpersonal Communication; Written Interpersonal Communication; Audio, Visual, and Audiovisual Interpretive Communication; Written and Print Interpretive Communication; Spoken Presentational Communication; and Written Presentational Communication. As a part of a career and technical education, learning another language can be instrumental in providing students with additional communication skills. AP Spanish IV will offer activities and projects that link specific program interests to the content and skills covered.