2020-21
High School Course Catalog
Prince William County Public Schools
Dear High School Student:

Prince William County Public Schools (PWCS) are committed to your high school success and transition to a meaningful post-secondary choice for future study and employment. With a clear focus on your learning, we provide you with rich and engaging experiences to help you to make these decisions. Many new courses have been developed to provide you with opportunities to explore a variety of career areas. Options are also available to earn college credits through increased advanced placement, International Baccalaureate, Cambridge, and dual enrollment offerings. We have created an environment where you will learn about your strengths, how these personal strengths connect with career opportunities, and what preparation is needed to successfully transition to the world beyond high school.

The “2020-21 High School Course Catalog” provides you with information about available courses and support services, and serves as a resource to you throughout the school year. A quick reference guide that lists courses by grade level and indicates the page numbers to go to in the “Catalog” for details is included. If you prefer, the “Catalog” can also be accessed on the Division’s website at pwcs.edu. Please take the time to carefully review the “Catalog” with your family. This will begin the process of selecting courses for the next school year that are meaningful to you and will help you meet your personal goals.

Our PWCS counselors, teachers, and administrators will work with you to ensure your continued success in meeting graduation requirements and to be certain that your 2020-21 academic program meets your interests and needs.

Sincerely,

Steven L. Waltz
Superintendent of Schools
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The full content of this guide is available online at pwcs.edu by selecting Students – High School Course Catalog.
# Table of Contents

## Introduction
Grade Placement ........................................ 7  
Ways to Earn Credit ................................. 8

## General Information
Grade-Point Values .................................. 10  
Omitting a Grade for a High School Credit  
  Taken in Middle School ......................... 10  
Schedule Changes .................................. 10  
Graduation Requirements and Diploma Options .... 10  
Graduation Requirements ............................... 15  
Transfer Students .................................. 16  
Diploma Warranty .................................. 17  
Diploma Seals ....................................... 17  
Post-Secondary “Ready to Go” Checklist .......... 18  
General College Admission Information .......... 19  
Post-Secondary Planning Timeline ................. 21  
Terminology ........................................ 24  
Course Selection .................................. 26  
Dual Enrollment .................................. 27  
Eligibility Requirements ............................... 30

## Specialty Programs
Pre-Governor's School @ Osbourn Park High School .. 32  
The Governor's School @ Innovation Park .......... 34  
Advanced Placement Scholars  
  (Patriot High School and  
  Woodbridge High School) ....................... 37  
Center for Applied Science, Interactive and Information Technology (CASiIT) ......... 40  
The Center for Biotechnology and Engineering  
  (Osbourn Park High School) .................... 42  
The Center for Environmental and Natural Sciences  
  (Freedom High School) ....................... 46  
The Center for the Fine and Performing Arts  
  (Colgan High School) ....................... 49  
Center for International Studies and Languages  
  (Hylton High School) ....................... 51  
Information Technology Program  
  (Forest Park High School) ................... 54  
The Cambridge Programme  
  (Brentsville District High School and  
  Potomac Senior High School) .................. 57  
International Baccalaureate Programme  
  (Gar-Field High School and  
  Stonewall Jackson High School) ............. 60

## Virtual Prince William ......................... 64

## Courses and Descriptions
Career and Technical Education ................... 66  
JROTC .............................................. 80  
English ............................................. 95  
English Learner (EL) Programs .................... 101  
Fine and Performing Arts Program ............... 103  
  Dance, Music, Theatre, and Visual Arts  
  World Language ................................ 114  
  General Cross-Curricular ...................... 122  
  Gifted Education ............................... 124  
  Health and Physical Education ............... 125  
  Mathematics .................................. 133  
  Science ......................................... 141  
  The Governor's School @ Innovation Park ...... 148  
  Social Studies ................................ 151  
  Special Education .............................. 159  
  Student Assistants ......................... 160

## Appendix
Weighted Courses ................................ 162  
Sample Course Schedules ......................... 165  
Sequential Electives ................................ 166  
List of Courses Offered ......................... 167
Make the Most of a World-Class School Division’s High School Program

Making the transition to high school is an exciting and challenging time for students and their families. There are many options to choose from and a number of requirements to meet. In Prince William County Public Schools, we believe that all students should have a rigorous educational experience based on our World-Class curriculum that builds on what students have learned at home, in our community, and at school. The high school experience is designed to prepare students for future employment, further study at the college and university level, and to be effective citizens in our local, national, and global community. It consists of high quality diploma options, a wide choice of specialty programs, core required coursework, an array of elective offerings, and non-traditional options for earning credits. While academic programs form the core of our high school program, it is also important to take advantage of the many opportunities to participate in the rich extra-curricular programs at all of our high schools.

Where Do I Start?

Select the diploma type you wish to earn. Students entering the 9th grade are strongly encouraged to consider the advanced diploma option to maintain the greatest number of options as they progress through their high school career. School counseling services provide regular opportunities for families to evaluate student progress toward diploma requirements and to make adjustments to the type of diploma selected. All Prince William County high schools provide diplomas and certificates to meet the needs of students with different interests and needs.

The purpose of this course description catalog is to describe in general terms the courses taught in Prince William County Public Schools’ high schools, grades 9-12. Students should study this course catalog and consult with their parent/guardian, school counselors, and teachers in planning their individual program of study. It is the responsibility of each student and his/her family to ensure that requirements for an Advanced Studies Diploma or a Standard Diploma are met. Graduation requirements are based on the year a student first enters 9th grade. School counselors can help with planning by reviewing test scores and records of past achievements and by discussing current interests and long-term goals. School counselors also have up-to-date information available about various training programs, schools, colleges, universities, and employment possibilities. School counselors review graduation requirements with students annually, and the school counseling staff at each school is available to assist you. Please work closely with your school counselor in making academic planning decisions.

Academic Year

The state requires that the regular academic year is at least 180 days, divided into two semesters. Courses are generally one year in length, and students receive a final grade and one standard unit of credit at the end of the school year for each course successfully completed. Some courses, however, are individually designed for one semester only. A one-semester course receives one-half credit, upon successful completion.

Registration

Courses listed will be included in the curriculum for the 2020-21 school year if there is sufficient enrollment and available staff. Grade levels listed for courses indicate the grade(s) in which the course is normally taken. All students will be expected to maintain a full-day schedule of classes required to meet the minimum standards necessary for graduation and Virginia Board of Education regulations.

All courses described may not be offered at all schools due to staffing and/or enrollment limitations. School counselors will work very closely with students and parents/guardians to develop academic plans where appropriate substitutions can be made for courses not offered.

Placement/Promotion Procedure

Recommendations concerning instructional placement of students are the responsibility of the teacher and other professional staff directly involved with the students. The final decision concerning placement, however, rests with the principal. Promotion at the high school level is based on the following guidelines:

- Students who are promoted from grade 8 will be placed in grade 9.
Students in high school progress toward graduation on a course-by-course basis. Students take courses based upon academic performance, academic needs, graduation requirements, and previous credits earned.

Graduation requirements for students shall be those in effect at the time the student entered the 9th grade for the first time.

The requirements for membership in grades 9-12 are as follows:

**Grade Placement**

- **9th Grade:** Successful completion of grade eight.
- **10th Grade:** Five units of credit, three of which must be in required courses.
- **11th Grade:** Eleven units of credit, six of which must be in required courses.
- **12th Grade:** Sixteen units of credit, nine of which must be in required courses.

To be classified as a 12th grader, a student must be in a program of studies which will enable the student to acquire the minimum number of standard units of credit and verified units of credit required for graduation by June of the senior year or by the end of summer school following the senior year. All alternative programs require the approval of the principal of the high school from which the student will graduate.

**Course Requirements**

All students, regardless of the diploma type or specialty program selected, will have to complete a set of required core classes in mathematics, science, social studies, English/language arts, physical education, and other subjects. The charts on pages 11-13 are designed to help students see what required courses must be completed for each diploma type. Some specialty programs offer courses which may be substituted for required classes. Students and their families need to work closely with their school counselor to explore their available course options.

**Specialty Programs**

Specialty programs allow for career exploration, subject area concentration, and college/university preparation. Prince William County Public Schools provide excellent opportunities for students to explore a wide variety of special programs. These “specialty” programs give students the chance to investigate careers ranging from the various building trades to advanced computer science. Students participating in these programs can earn certifications, licenses, or other professional credentials in an area of study.

In addition to career exploration and concentrated study in fields of interest, all of our high schools provide rigorous college preparation through the College Board’s Advanced Placement (AP) courses, the IB, or the Cambridge Programme. All three of these programs offer students the possibility of earning college credit for courses completed while in high school. There are also Dual Enrollment and Early College courses available to students in PWCS.

Families can explore the wide range of options available in their neighborhood high school program or consider one of the many options presented at our specialty program fairs and information nights held annually across the county. You can contact the counseling office of any high school for more information about programs of particular interest to you. Be sure to visit the Prince William County Public Schools Web site at pwcs.edu for information concerning transfer policies and application deadlines.

**Electives**

In addition to the core course requirements and specialty programs, all Prince William County high schools offer elective course options which extend and enrich the curriculum, and challenge students. Students may choose these electives to customize their educational experience to meet their interests. Some examples are: advanced physical education, journalism, theater, geography, astronomy, international relations, and many more. Speak with your school counselor to learn about the offerings available at your school.
Ways to Earn Credit

Traditional Classroom
The vast majority of students experience Prince William County Public Schools through the traditional classroom environment where face-to-face collaboration leads to a deep construction of knowledge with our World-Class teaching staff. The classroom environment provides the greatest potential for student interaction. It also creates the opportunity to form life-long friendships with their classmates over an entire school year.

Virtual Courses
As technology has evolved, so have our educational tools and opportunities. An increasing number of students are seeking alternatives to the face-to-face classroom experience through virtual learning opportunities:

Virtual Prince William
Prince William County Public Schools is a pioneer in online schooling through our Virtual High School. Virtual Prince William continues to lead the online school movement with over a decade of experience of providing accelerated courses for students who are motivated to work in a more independent learning environment and are disciplined enough to manage their coursework and time. The online experience in Virtual Prince William is truly World-Class. Students taking our courses have highly skilled, certified, Prince William County teachers conducting their classes. Courses include a wide variety of state of the art media, course management, and collaboration tools. Virtual Prince William offers students the opportunity to take courses online to accelerate completion of graduation requirements, recover credits, and balance academic and extracurricular opportunities. With the exception of face-to-face tutorials, these courses are delivered via computer and the coursework is done outside school hours. Students have direct access to their instructors by telephone and by communication tools inside the course delivery platform such as email and instant messaging.

While the content and requirements of online coursework are the same as in the traditional classroom, online courses require different skills and learning styles than traditional face-to-face courses. For instance, students enrolled in an online course are responsible for scheduling their own “class time.” Online students must be very focused and self-disciplined. Information about the nature of online learning, the necessary computer equipment, the cost, and other aspects of this opportunity can be found on the Virtual Prince William web page at virtualhs.pwcs.edu.

Courses offered in any given school year are dependent on sufficient enrollment and the availability of qualified and appropriately endorsed instructional staff.

Students interested in virtual course options should see their school counselor or contact the Virtual Prince William. Contact information is available on the Prince William County Public Schools’ Web site at pwcs.edu.

Virtual Virginia
Virtual Virginia, sponsored by the Virginia Department of Education, provides online courses to students across the Commonwealth. Students have the opportunity to enroll in courses that they may not be able to fit into their regular school day or take advantage of courses that are not currently available in their school.

While some courses require tuition, any students participating in the Early College Scholars program have their AP course tuition covered by the Virginia Department of Education. Students who plan to take the AP exam are required to pay the AP exam fee. Students who enroll in a Virtual Virginia course and choose to drop the course once it begins, will be assessed a $75.00 fee. Students who are successful in online classes are generally skilled in the use of technology, are self-disciplined and self-motivated, have good communication skills (reading and writing), and have an interest in interacting with others in an online course environment. To learn more about Virtual Virginia opportunities, please visit your school counselor.

Night School
A limited number of courses are available in the evenings. These courses are some of the most critical necessary for graduation. Course availability is subject to meeting sufficient enrollment. Your school counselor can provide more information about the Night School Program.
Summer School
We also offer some courses over the summer. The Summer School Program allows students to accelerate the completion of required coursework to free up their school year for participation in more elective programs while also concentrating on advanced academic coursework. Other students take advantage of the Summer School Program to retake coursework that proved difficult for them during the previous school year. Students interested in exploring summer coursework should contact their school counselor for more information. All students taking a summer school course that requires an End-of-Course SOL test, must take the SOL test scheduled during summer school, unless the student has already passed the test. Students who have not passed a state assessment may be required to enroll in available summer remediation programs. In support of Prince William County Public Schools’ students who must meet the Standards of Learning verified credit diploma criteria, an optional summer tutoring program is provided. This voluntary program is available to students who have passed their classroom instruction and received Carnegie credit, but have not earned verified credit due to failing the corresponding End-of-Course SOL test. Summer school courses not taken in Prince William County Public Schools must meet the requirements as outlined in regulation. See your school counselor for more information.

Alternative Methods for Granting Standard Units of Credit
In some instances, currently enrolled students find it necessary to look for other options to earn a standard unit of credit. Students seeking to earn high school credits from educational institutions outside Prince William County Public Schools or the Virtual Virginia program must request permission to take the course. Credit will only be awarded for the course if permission is granted by the Office of Student Learning prior to course enrollment. See your school counselor for more information about alternative options for earning standard units of credit.

Regional Advanced Academic Schools
Thomas Jefferson High School for Science and Technology – Virginia Regional Academic-Year Governor’s School
The Thomas Jefferson High School for Science and Technology accepts Prince William County Public Schools’ students into its four-year program through an application and testing process. Interested students should ask a designated middle school counselor for an information packet. \textit{Students must complete Algebra I by the end of eighth grade or receive written authorization to apply to Thomas Jefferson from the Admissions Director.} Additional information is available through the Thomas Jefferson Admissions Office at 571.423.3370 or at \url{www.fcps.edu/registration/thomas-jefferson-admissions}.

The Governor’s School @ Innovation Park – Virginia Regional Academic-Year Governor’s School
The Governor’s School @ Innovation Park is a science, technology, engineering, and mathematics (STEM) initiative of three school divisions, Prince William County, Manassas City, and Manassas Park, in collaboration with George Mason University. The instructional design of the program integrates strands in biology, chemistry, and physics with mathematics, concepts of engineering and technology, and with laboratory research. Learning experiences focus on real-world research with mentorship opportunities in business, industry, government, and university settings. Rising juniors are eligible to apply for the program. Interested students can access the application online at \url{governors.pwcs.edu}. \textit{Students must have completed Algebra II/Trigonometry and both Biology I and Chemistry I by the end of the 10th grade in order to apply.}

Alternative Education
New Directions Alternative Education Center (Grades 9-12)
New Directions offers students in grades 9-12 a comprehensive instructional program that merges leadership, career, and social skills necessary for success in the 21st century with existing Prince William County Public Schools curricula. Students can expect a rigorous curriculum which promotes the development of academic resilience, social responsibility, and self-respect. The innovative education environment provides flexible learning opportunities to support student success. Day and evening programs are offered. Age-appropriate interventions that address effective and affective development, second language acquisition, and special needs are provided in an inclusive manner.

Students are recommended for placement by school administrators, parents/guardians, or the Office of Student Management and Alternative Programs. A nontraditional education plan for each student designed collaboratively by New Directions staff, parents/guardians, and the student ensures each student meets his/her educational and graduation goals. Multiple instructional options support seamless student transitions to additional academic, extracurricular, and service learning opportunities.

Individual Student Alternative Education Plan (ISAEP) –
The Individual Student Alternative Education Plan (ISAEP) is a program offered through the Virginia Department of Education, which provides students ages 16 through 18, who are at risk of dropping out of school, an opportunity to work toward a General Educational Development (GED) certificate while developing a vocational or career skill. Students must be referred to the program by the school counseling office, with the permission of the parents/guardians, and must meet the eligibility criteria to be admitted to the program. The ISAEP will only be considered for students after all measures to maintain students in a traditional diploma program have been exhausted. Contact the school counseling office for more information regarding the program.
General Information

Grade-Point Values: All courses taught for credit in Prince William County Public Schools are assigned grade-point values as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Point Value for Courses</th>
<th>Point Value for Courses Designated as Advanced Placement, International Baccalaureate, Cambridge, and Certain Career and Technical Education Courses</th>
<th>Point Value for Designated Prerequisite Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4 points (90-100)</td>
<td>5 points (90-100)</td>
<td>4.5 points (90-100)</td>
</tr>
<tr>
<td>B+</td>
<td>3.4 points (87-89)</td>
<td>4.4 points (87-89)</td>
<td>3.9 points (87-89)</td>
</tr>
<tr>
<td>B</td>
<td>3 points (80-86)</td>
<td>4 points (80-86)</td>
<td>3.5 points (80-86)</td>
</tr>
<tr>
<td>C+</td>
<td>2.4 points (77-79)</td>
<td>3.4 points (77-79)</td>
<td>2.9 points (77-79)</td>
</tr>
<tr>
<td>C</td>
<td>2 points (70-76)</td>
<td>3 points (70-76)</td>
<td>2.5 points (70-76)</td>
</tr>
<tr>
<td>D+</td>
<td>1.4 points (67-69)</td>
<td>1.4 points (67-69)</td>
<td>1.4 points (67-69)</td>
</tr>
<tr>
<td>D</td>
<td>1 point (60-66)</td>
<td>1 point (60-66)</td>
<td>1 point (60-66)</td>
</tr>
<tr>
<td>F</td>
<td>0 points (59 and below)</td>
<td>0 points (59 and below)</td>
<td>0 points (59 and below)</td>
</tr>
</tbody>
</table>

When students successfully complete courses identified as 9th, 10th, 11th, or 12th grade courses prior to entering 9th grade, they will receive standard units of credit toward graduation. Such courses will be used in computing the student’s high school GPA. Weighted grade points are used to encourage students to take more challenging course work with less risk to their report card grades. Students and their families should note that colleges and universities routinely remove weighted credits to better compare applicants' performance in rigorous courses across school divisions where weighting practices vary. (See paragraph below)

Omitting a Grade for a High School Credit Taken in Middle School

The Regulations Establishing Standards of Accrediting Public Schools in Virginia have provided families with the option of requesting that grades be omitted from a student's transcript for any high school credit-bearing course taken in middle school. Requests to have a high school credit-bearing course grade removed from a student's transcript must be submitted using the form available in the counseling office or on the school website to the appropriate principal before the deadlines established by the School Division. Families who elect to have a grade removed from the transcript should be aware that the decision to have the grade removed is binding and that no grade or associated credit will be awarded for the course once the request has been granted.

Schedule Changes

Each high school sets their own schoolwide schedule change procedures and guidelines. Students must comply with the schedule change process established at their school. Should a student elect to change a class, the following rules will apply:

- Students who drop a year-long course before the end of the first quarter or before the end of the first four weeks for a semester based course, shall not have the attempt recorded on their transcript.
- Students who drop a year-long course after the end of the first quarter or after the end of the first four weeks for semester based course, shall receive no credit and a notation shall be made on the student’s transcript indicating withdraw failing or withdraw passing.

Graduation Requirements and Diploma Options

The Virginia Board of Education sets forth requirements for students associated with the year the student entered 9th grade for the first time. The diploma options available to students can be found, organized by the year the student entered 9th grade for the first time, on the following pages. Students will meet with their school counselor each year to update their individual graduation plan and diploma type.
# Standard Diploma

**22 Standard Credits, 6 Verified Credits:** Students who enter 9th grade PRIOR TO 2018-19

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Verified Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>4</td>
<td>2</td>
<td>Courses shall include English 9, 10, 11, and 12 or an advanced equivalent.</td>
</tr>
<tr>
<td>Math</td>
<td>3</td>
<td>1</td>
<td>Courses shall include at least two different course selections from among Algebra I; Geometry; Algebra Functions and Data Analysis; Algebra II, or other mathematics courses above the level of Algebra II.</td>
</tr>
<tr>
<td>Science</td>
<td>3</td>
<td>1</td>
<td>Courses shall include at least two different course selections from among Earth Science, Biology, Chemistry, or Physics or completion of the sequence of science courses required for the IB Diploma.</td>
</tr>
<tr>
<td>Social Studies</td>
<td>3</td>
<td>1</td>
<td>Courses shall include U.S. and Virginia History, U.S. and Virginia Government and one of the following: World History to 1500; World History from 1500.</td>
</tr>
</tbody>
</table>
| Health and Physical Education       | 2       | 1                | **CPR/First Aid/AED Training**  
Courses shall include Health PE I and II.  
*Students will meet the CPR/First Aid/AED Training requirement while enrolled in an HPE I and II course in Prince William County Public Schools.* |
| Economics/Personal Finance (Virtual course component included) | 1       |                  | Students will meet the Virtual Course graduation requirement after taking and passing this course in a Prince William County Public School.                                                                   |
| Electives                           | 6       |                  | Credits earned for this requirement shall include one credit in fine or performing arts or Career and Technical Education. A computer science course credit earned by students may be considered a Career and Technical Education course credit. Courses shall also include two electives which are sequential. The World Language, Fine Arts, or Career and Technical Education course credit may be used to partially satisfy the sequential elective requirement. |
| Other Requirements                  |         |                  | **CTE Credentialing Exam:** Students must take and pass a Career and Technical Education credentialing exam that has been approved by the Virginia Board of Education. |
| **1 Student Selected Verified Credit:** |         |                  | This verified credit may be earned by passing an SOL test and the corresponding course in any subject area. A student may also utilize additional tests for earning verified credit in computer science, technology, Career and Technical Education, economics, or other areas as prescribed by the Virginia Board of Education. |

*Students who entered the 9th grade prior to the 2016-17 school year do not need to meet this requirement.*
## Advanced Studies Diploma

**26 Standard Credits, 9 Verified Credits:** Students who enter 9th grade **PRIOR TO 2018-19**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Verified Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td>4</td>
<td>2</td>
<td>Courses shall include English 9, 10, 11, and 12 or an advanced equivalent.</td>
</tr>
<tr>
<td><strong>Math</strong></td>
<td>4</td>
<td>2</td>
<td>Courses shall include at least three different course selections from among Algebra I, Geometry, Algebra II, or other mathematics courses above the level of Algebra II.</td>
</tr>
<tr>
<td><strong>Science</strong></td>
<td>4</td>
<td>2</td>
<td>Courses shall include at least three different course selections from among Earth Science, Biology, Chemistry, or Physics or completion of the sequence of science courses required for the IB Diploma.</td>
</tr>
<tr>
<td><strong>Social Studies</strong></td>
<td>4</td>
<td>2</td>
<td>Courses shall include U.S. and Virginia History, U.S. and Virginia Government, and both World History to 1500 and World History from 1500; World Geography may be accepted as one of the required World History courses for transfer students.</td>
</tr>
<tr>
<td><strong>World Language</strong></td>
<td>3 or 4</td>
<td></td>
<td>Courses shall include three years of one language or two years each of two languages.</td>
</tr>
<tr>
<td><strong>Health and Physical Education</strong></td>
<td>2</td>
<td></td>
<td><strong>CPR/First Aid/AED Training</strong>&lt;sup&gt;*&lt;/sup&gt; Courses shall include Health PE I and II.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Students will meet the CPR/First Aid/AED Training requirement while enrolled in an HPE I and II course in Prince William County Public Schools.</td>
</tr>
<tr>
<td><strong>Economics/Personal Finance</strong></td>
<td>1</td>
<td></td>
<td>Students will meet the Virtual Course graduation requirement after taking and passing this course in a Prince William County Public School.</td>
</tr>
<tr>
<td><strong>(Virtual course component included)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td>3 or 4</td>
<td></td>
<td>One elective must be a Fine Arts or Career and Technical Education course.</td>
</tr>
<tr>
<td><strong>Other Requirements</strong></td>
<td></td>
<td></td>
<td><strong>1 Student Selected Verified Credit:</strong> This verified credit may be earned by passing an SOL test and the corresponding course in any subject area. A student may also utilize additional tests for earning verified credit in computer science, technology, career and technical education, economics, or other areas as prescribed by the Virginia Board of Education.</td>
</tr>
</tbody>
</table>

*Students who entered the 9th grade prior to the 2016-17 school year do not need to meet this requirement.*
## Standard Diploma

### 22 Standard Credits, 5 Verified Credits: Students who enter 9th grade in 2018-19 and beyond

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Verified Credits</th>
<th>Courses shall include</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td>4</td>
<td>2</td>
<td>Courses shall include English 9, 10, 11, and 12 or an advanced equivalent.</td>
<td></td>
</tr>
<tr>
<td><strong>Math</strong></td>
<td>3</td>
<td>1</td>
<td>Courses shall include at least two different course selections from among Algebra I; Geometry; Algebra Functions and Data Analysis; Algebra II, or other mathematics courses above the level of Algebra II.</td>
<td></td>
</tr>
<tr>
<td><strong>Science</strong></td>
<td>3</td>
<td>1</td>
<td>Courses shall include at least two different course selections from among Earth Science, Biology, Chemistry, or Physics or completion of the sequence of science courses required for the IB Diploma.</td>
<td></td>
</tr>
<tr>
<td><strong>Social Studies</strong></td>
<td>3</td>
<td>1</td>
<td>Courses shall include U.S. and Virginia History, U.S. and Virginia Government, and one of the following: World History to 1500; World History from 1500.</td>
<td></td>
</tr>
<tr>
<td><strong>Health and Physical Education</strong></td>
<td>2</td>
<td></td>
<td><strong>CPR/First Aid/AED Training</strong>&lt;br&gt;Courses shall include Health PE I and II.&lt;br&gt;*Students will meet the CPR/First Aid/AED Training requirement while enrolled in an HPE I and II course in Prince William County Public Schools.</td>
<td></td>
</tr>
<tr>
<td><strong>Economics/Personal Finance</strong></td>
<td>1</td>
<td></td>
<td>Students will meet the Virtual Course graduation requirement after taking and passing this course in a Prince William County Public School.</td>
<td></td>
</tr>
<tr>
<td>(Virtual course component included)</td>
<td></td>
<td></td>
<td>Credits earned for this requirement shall include one credit in fine or performing arts or Career and Technical Education. A computer science course credit earned by students may be considered a Career and Technical Education course credit. Courses shall also include two electives which are sequential. The World Language, Fine Arts, or Career and Technical Education course credit may be used to partially satisfy the sequential elective requirement.</td>
<td></td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td>6</td>
<td></td>
<td><strong>CTE Credentialing Exam:</strong> Students must take and pass a Career and Technical Education credentialing exam that has been approved by the Virginia Board of Education&lt;br&gt;<strong>OR</strong>&lt;br&gt;Take one advanced course during their high school career. An advanced course can be defined as any AP/Pre-AP, IB/Pre-IB, AICE/IGSCE courses, or dual enrollment.</td>
<td></td>
</tr>
<tr>
<td><strong>Other Requirements</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

*Note: The CPR/First Aid/AED Training requirement is part of the Health and Physical Education course requirements.*
Advanced Studies Diploma

26 Standard Credits, 5 Verified Credits: Students who enter 9th grade in 2018-19 and beyond

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Verified Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Math</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Science</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Social Studies</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>World Language</td>
<td>3 or 4</td>
<td></td>
</tr>
<tr>
<td>Health and Physical Education</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Economics/Personal Finance</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>3 or 4</td>
<td></td>
</tr>
<tr>
<td>Other Requirements</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Courses shall include English 9, 10, 11, and 12 or an advanced equivalent.

Courses shall include at least three different course selections from among Algebra I, Geometry, Algebra II, or other mathematics courses above the level of Algebra II.

Courses shall include at least three different course selections from among Earth Science, Biology, Chemistry, or Physics or completion of the sequence of science courses required for the IB Diploma.

Courses shall include U.S. and Virginia History, U.S. and Virginia Government, and both World History to 1500 and World History from 1500; World Geography may be accepted as one of the required World History courses for transfer students.

Courses shall include three years of one language or two years each of two languages.

Courses shall include Health PE I and II.

Students will meet the Virtual Course graduation requirement after taking and passing this course in a Prince William County Public School.

Courses shall include two electives which are sequential and one elective which qualifies as a World Language, Fine Arts, or Career and Technical Education course. One elective must be a Fine Arts or Career and Technical Education course.

Students must take and pass a Career and Technical Education credentialing exam that has been approved by the Virginia Board of Education

Take one advanced course during their high school career. An advanced course can be defined as any AP/Pre-AP, IB/Pre-IB, AICE/IGSCE courses, or dual enrollment.

*CPR/First Aid/AED Training
Courses shall include Health PE I and II.

*Students will meet the CPR/First Aid/AED Training requirement while enrolled in an HPE I and II course in Prince William County Public Schools.

Students will meet the Virtual Course graduation requirement after taking and passing this course in a Prince William County Public School.
Graduation Requirements

Diploma Options for students with an Individualized Education Plan (IEP) or 504 Plan

Students with disabilities who have an IEP or 504 plan are encouraged to pursue the Advanced Studies or Standard Diploma. The IEP or 504 team will work with students and their families to determine the appropriate individual path to graduation for the student.

Credit Accommodations

Students entering 9th grade for the first time in 2013-14 and beyond are eligible to pursue an Advanced Studies Diploma, Standard Diploma, or Applied Studies Diploma. These students who would have previously been candidates for the Modified Standard Diploma may use credit accommodations to earn the Standard Diploma if they meet the following eligibility requirements: (i) the student has a current IEP or 504 plan with standards-based content goals; (ii) the student has a disability that precludes him or her from achieving and progressing commensurate with grade level expectation, but is learning grade level content; (iii) the student needs significant instructional supports to access grade level Standards of Learning (SOL) content and to show progress; and (iv) based on multiple objective measures of past performance, student might not be expected to achieve the required standard and verified units of credit within the standard time frame. Credit accommodations shall be determined and documented by the student’s IEP team or 504 plan committee, including the student where appropriate, at any point after the student’s eighth grade year.

Applied Studies Diploma (For students with an IEP)

Courses Needed: Students with disabilities who complete the requirements of their Individualized Education Program (IEP) and do not meet the requirements for other diplomas shall be awarded the Applied Studies Diploma.

Transition Services (For students with an IEP)*

Realizing successful post-secondary outcomes is a goal we have for all students. Depending on the severity of disability and the support services required in adult life, successful transition from high school to adult life may require that planning activities begin in elementary school with students exploring their interests in middle school. Starting the process early prepares students with disabilities to think about what they want to be able to do in adult life. High school transition planning includes exploring post-secondary opportunities and employment options and may include connecting with the adult service agencies that may provide the student with services.

Statement of Needed Transition Services - beginning no later than the first IEP developed when the eligible student is 14.

Recognizing the need for students with disabilities to engage in effective transition planning, the Individuals with Disabilities Education Act (IDEA) requires that transition planning be part of the Individualized Education Program (IEP). Beginning no later than the first IEP developed when the eligible student is 14, the Team considers the student’s need for transition services and documents this discussion. If appropriate, the IEP includes a statement of needed transition services. Such documentation must be reviewed and updated annually thereafter. Students must be invited to all meetings and allowed to participate actively when transition planning is discussed and are encouraged to actively participate.

Linkages to Post School Options – beginning no later than the first IEP developed when the eligible student is 14 and update annually.

Beginning no later than the first IEP developed when the eligible student is 14, the IEPs of students should include a post school vision statement as well as identify the transition services necessary to support the vision. IDEA 2004 defines transition services as a coordinated set of activities for a student with a disability that -

A. Is designed to be within a results-oriented process, that is focused on improving the academic and functional achievement of the student with a disability to facilitate the student’s movement from school to post-school activities, including post-secondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation;

B. Is based on individual strengths, preferences and interest; and

C. Includes instruction, related services, community experiences, the development of employment and other post-school adult living objectives, and when appropriate, acquisition of daily living skills and functional vocational evaluation. (P.L. 108-446, Sec 603 (34))
Transfer Students

Students who transfer to a Prince William County Public School from a public school system within the state of Virginia must meet all graduation requirements set forth by the Virginia Department of Education. Students who transfer to a Prince William County Public School from a private or out-of-state school will work with their school counselor to make an individualized graduation plan that allows the student some flexibility in meeting graduation requirements as set forth by the Virginia Department of Education. Students who enroll during the school year after the first 20 hours of instruction will be required to meet the following verified unit of credit requirements for graduation:

### Verified Units of Credit Requirement

#### Transfer Students from Non-Virginia Public Schools

<table>
<thead>
<tr>
<th>Standard Diploma</th>
<th>Advanced Studies Diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student enters the 9th grade for the first time prior to 2018-19</strong></td>
<td><strong>Student enters at the beginning of or during 9th grade:</strong></td>
</tr>
<tr>
<td><strong>Student enters at the beginning of or during 9th grade:</strong></td>
<td><strong>Student must obtain all six required verified units of credit</strong></td>
</tr>
<tr>
<td><strong>Student enters at the beginning of or during 10th grade and at the beginning of 11th grade:</strong></td>
<td><strong>Student must obtain four verified units of credit</strong></td>
</tr>
<tr>
<td><strong>One in English</strong></td>
<td><strong>Two in English</strong></td>
</tr>
<tr>
<td><strong>One in Math</strong></td>
<td><strong>One in Math</strong></td>
</tr>
<tr>
<td><strong>One in History/Social Science</strong></td>
<td><strong>One in History/Social Science</strong></td>
</tr>
<tr>
<td><strong>One in Science</strong></td>
<td><strong>One in Science</strong></td>
</tr>
<tr>
<td><strong>Student enters during 11th grade or at the beginning of 12th grade:</strong></td>
<td><strong>Student must obtain two verified units</strong></td>
</tr>
<tr>
<td><strong>One in English</strong></td>
<td><strong>One in English</strong></td>
</tr>
<tr>
<td><strong>One student selected</strong></td>
<td><strong>Three student selected</strong></td>
</tr>
<tr>
<td><strong>Student enters during 12th grade:</strong></td>
<td><strong>Student may apply for a waiver of verified units with the State Board of Education</strong></td>
</tr>
<tr>
<td><strong>Student enters the 9th grade for the first time during 2018-19 and beyond</strong></td>
<td><strong>Student enters at the beginning of or during 9th grade:</strong></td>
</tr>
<tr>
<td><strong>Student enters at the beginning of or during 9th grade or at the beginning of 10th grade:</strong></td>
<td><strong>Student must obtain all five required verified units of credit</strong></td>
</tr>
<tr>
<td><strong>Student enters at the beginning of or during 10th grade and at the beginning of 11th grade:</strong></td>
<td><strong>Student must obtain all five required verified units of credit</strong></td>
</tr>
<tr>
<td><strong>Student enters during 11th grade or at the beginning of 12th grade:</strong></td>
<td><strong>Student enters at the beginning of or during 10th grade and at the beginning of 11th grade:</strong></td>
</tr>
<tr>
<td><strong>Student enters during 11th grade or at the beginning of 12th grade:</strong></td>
<td><strong>Student must obtain four verified units of credit</strong></td>
</tr>
<tr>
<td><strong>One in English</strong></td>
<td><strong>One in English</strong></td>
</tr>
<tr>
<td><strong>One student selected</strong></td>
<td><strong>Three student selected</strong></td>
</tr>
<tr>
<td><strong>One must be earned in mathematics if participation in mathematics testing is required by federal law</strong></td>
<td><strong>Student enters during 12th grade:</strong></td>
</tr>
<tr>
<td><strong>Student enters during 12th grade:</strong></td>
<td><strong>Student may apply for a waiver of verified units with the State Board of Education</strong></td>
</tr>
</tbody>
</table>

Students transferring with weighted credits from other divisions will have those credits assessed and aligned with similar courses in PWCS. Students may also be granted additional flexibility in meeting some of the course requirements for graduation as outlined in the Virginia Standards of Accreditation. Any student or parent with questions about graduation requirements for transfer students should consult with their assigned school counselor. Students whose parents are active duty military may receive additional flexibility as outlined in the Interstate Military Compact on Educational Opportunity for Military Children. Information for transfer students who enter during 10th grade in 2019-20 and beyond is available in each school counseling office.
**Diploma Warranty**

Prince William County Public Schools will provide a two-year warranty for diploma recipients. The diploma warranty guarantees minimum competencies in reading, writing, and mathematics. Students receiving a diploma from Prince William County Public Schools:

- Understand, interpret, and analyze written material;
- Carry out oral and written directions or obtain clarification when necessary;
- Express ideas both orally and in writing, using appropriate vocabulary and proper grammar;
- Locate and obtain needed information from common reference materials, computerized data-bases, maps and diagrams, and resource people;
- Apply basic computation skills; and
- Use problem-solving strategies in the work environment.

Prince William County Public Schools’ graduates who are identified by employers as lacking one or more of these minimum competencies may be retrained through Prince William County Public Schools’ Night School Program at no expense to the graduate.

**Diploma Seal**

Regulations Establishing Standards for Accrediting Public Schools in Virginia contain provisions for awards for exemplary performance for students who meet the requirements for graduation as follows:

- Students who complete the requirements for an Advanced Studies Diploma with an average grade of “B” or better and successfully complete college-level coursework that will earn the student at least nine transferable college credits in Advanced Placement (AP), IB (IB), Cambridge (AICE), or dual enrollment courses will receive the Governor’s Seal on the Diploma.
- Students who complete the requirements for a Standard Diploma or an Advanced Studies Diploma with an average of “A” will receive a Board of Education Seal on the Diploma.
- The Board of Education’s Career and Technical Education Seal will be awarded to students who earn a Standard Diploma or an Advanced Studies Diploma, complete a prescribed sequence of Career and Technical Education courses, and either:
  - Maintain a “B” or better average in those courses; or
  - Pass one of the Virginia Department of Education approved industry certifications, occupational competence assessments, or professional licenses. See your school counselor for a list of approved industry certifications.
- The Board of Education’s Diploma Seal for Science, Technology, Engineering, and Mathematics (STEM) will be awarded to students who:
  - Earn either a Standard Diploma or an Advanced Studies Diploma.
  - Satisfy all Math and Science requirements for the Advanced Studies diploma with a “B” average or better in all course work.
  - Successfully complete a 50 hour or more work-based learning opportunity in a STEM area.
  - Satisfy all requirements for a Career and Technical Education concentration. A concentration is a coherent sequence of two or more state-approved courses as identified in the course listing within the CTE Administrative Planning Guide.
  - Pass one of the following:
    - A Board of Education CTE STEM-H credential examination;
    - An examination approved by the Board that confers a college-level credit in a STEM field.
- The Board of Education Seal of Biliteracy will be awarded to students who meet the following criteria:
  - Complete U.S. and Virginia History and U.S. and Virginia Government with a grade of “B” or higher; (ii) complete 50 hours of voluntary participation in community service or extracurricular activities that have a civics focus; and (i) have good attendance and no disciplinary infractions. Any student who enlists in the United States military prior to graduation will be deemed to have completed the community service requirement for this seal.
- The Board of Education’s Seal of Biliteracy will be awarded to students who earn either a Board of Education-approved diploma and (i) pass all required End-of-Course Assessments in English reading and writing at the proficient or higher level; and (ii) be proficient at the intermediate-mid level or higher in one or more languages other than English, as demonstrated through an assessment from a list to be approved by the Superintendent of Public Instruction. For purposes of this seal, “foreign language” means a language other than English, and includes American Sign Language.
- The Board of Education’s Seal for Excellence in Science and the Environment is awarded to students who earn a Modified Standard Diploma, Standard Diploma or an Advanced Studies Diploma and satisfy all of the following criteria: (i) complete U.S. and Virginia History and U.S. and Virginia Government with a grade of “B” or higher; (ii) complete 50 hours of voluntary participation in community service or extracurricular activities that have a civics focus; and (iii) have good attendance and no disciplinary infractions. Any student who enlists in the United States military prior to graduation will be deemed to have completed the community service requirement for this seal.
- The Board of Education’s Seal for Excellence in Science and the Environment is awarded to students who earn either a Board of Education-approved diploma and (i) pass all required End-of-Course Assessments in English reading and writing at the proficient or higher level; and (ii) be proficient at the intermediate-mid level or higher in one or more languages other than English, as demonstrated through an assessment from a list to be approved by the Superintendent of Public Instruction. For purposes of this seal, “foreign language” means a language other than English, and includes American Sign Language.
- The Board of Education’s Seal for Excellence in Science and the Environment is awarded to students who earn a Modified Standard Diploma, Standard Diploma or an Advanced Studies Diploma and satisfy all of the following criteria: (i) complete U.S. and Virginia History and U.S. and Virginia Government with a grade of “B” or higher; (ii) complete 50 hours of voluntary participation in community service or extracurricular activities that have a civics focus; and (iii) have good attendance and no disciplinary infractions. Any student who enlists in the United States military prior to graduation will be deemed to have completed the community service requirement for this seal.

Prior to 2018-2019 awarding to students who earn a Standard Diploma or an Advanced Studies Diploma and satisfy all of the mathematics requirements for the Advanced Studies Diploma (four standard units of credit including Algebra II; two verified units of credit) with a “B” average or better and either (i) pass an examination in a career and technical education field that confers certification from a recognized industry, trade, or professional association; or (ii) acquire a professional license in a career and technical education field from the Commonwealth of Virginia; or (iii) pass an examination approved by the Board that confers college-level credit in a technology or computer science area. The Board of Education shall approve all professional licenses and examinations used to satisfy these requirements.
Prince William County Public Schools
“Ready to Go” Checklist

- Students completing the courses and other graduation requirements outlined below will be “Ready to Go” to post-secondary education institutions of their choice to include Northern Virginia Community College and four year universities.
- Students may opt to take a standard level or advanced level (AP, IB, AICE) of any required course depending on the program available at their school.
- Students must complete all requirements for their chosen diploma to include earning verified units of credit for courses which have a Standard of Learning (SOL) test attached.
- Students are encouraged to research admission requirements for highly selective colleges and universities during their 9th grade year.

<table>
<thead>
<tr>
<th>Grade 9</th>
<th>Grade 10</th>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td>English 9</td>
<td>English 10</td>
<td>English 11</td>
</tr>
<tr>
<td></td>
<td>○ Completed</td>
<td>○ Completed</td>
<td>○ Completed</td>
</tr>
<tr>
<td><strong>Math</strong></td>
<td>Algebra I or Higher</td>
<td>Geometry or Higher</td>
<td>Algebra Functions and Data Analysis, Algebra II, or higher</td>
</tr>
<tr>
<td></td>
<td>○ Completed</td>
<td>○ Completed</td>
<td>○ Completed</td>
</tr>
<tr>
<td><strong>Science</strong></td>
<td>Earth Science I or Biology I</td>
<td>Biology I or Chemistry I</td>
<td>Chemistry I or Physics I</td>
</tr>
<tr>
<td></td>
<td>○ Completed</td>
<td>○ Completed</td>
<td>○ Completed</td>
</tr>
<tr>
<td><strong>Social Studies</strong></td>
<td>World History I</td>
<td>World History II</td>
<td>U.S. and Virginia History</td>
</tr>
<tr>
<td></td>
<td>○ Completed</td>
<td>○ Completed</td>
<td>○ Completed</td>
</tr>
<tr>
<td><strong>World Language</strong></td>
<td>Level 1 or higher</td>
<td>Level 2 or higher</td>
<td>Level 3 or higher</td>
</tr>
<tr>
<td></td>
<td>○ Completed</td>
<td>○ Completed</td>
<td>○ Completed</td>
</tr>
<tr>
<td><strong>Health and Physical Education</strong></td>
<td>Health and Physical Education I</td>
<td>Health and Physical Education II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ Completed</td>
<td>○ Completed</td>
<td></td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td>Fine Arts or Career and Technical Education (1 Credit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ Completed (list below)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sequential Elective (2 Credits – Standard Diploma Only) for students who enter 9th grade prior to 2018-19. Required for all students who enter the 9th grade in 2018-19 and beyond.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ Completed (list below)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Electives (2 or more credits depending on diploma type)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ Completed (list below)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Additional Graduation Requirements</strong></td>
<td>Economics and Personal Finance</td>
<td>CTE Credentialing Exam or One Advanced Course#</td>
<td>Virtual Course</td>
</tr>
<tr>
<td></td>
<td>○ Completed</td>
<td>○ Completed</td>
<td>○ Completed</td>
</tr>
</tbody>
</table>

See your school counselor for more information about your high school course plan and your post-secondary education plans!

# All students entering the 9th grade for the first time during the 2018-19 school year and beyond must take EITHER one advanced course or pass a CTE credentialing exam. All students entering the 9th grade for the first time during the 2013-14, 2014-15, 2015-16 or 2017-18 must pass a CTE credentialing exam if they plan to receive a STANDARD diploma.
## Prince William County Public Schools
### General College Admissions Information

Data below based on acceptance information reported for the class of 2018 from Prince William County Public Schools

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
<th>Average GPA of accepted students</th>
<th>Average SAT of accepted students (combined Verbal and Math)</th>
<th>Average ACT of accepted students (composite score)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elite – National</strong></td>
<td>Massachusetts Institute of Technology, Princeton, Cornell University</td>
<td>4.5</td>
<td>1400</td>
<td>33</td>
</tr>
<tr>
<td><strong>Exclusive – State</strong></td>
<td>University of Virginia, College of William &amp; Mary, University of Richmond</td>
<td>4.2</td>
<td>1275</td>
<td>28</td>
</tr>
<tr>
<td><strong>Highly Selective – State</strong></td>
<td>George Mason, Virginia Tech, James Madison University</td>
<td>3.9</td>
<td>1175</td>
<td>25</td>
</tr>
<tr>
<td><strong>Moderately Selective – State</strong></td>
<td>Virginia Commonwealth University, University of Mary Washington, Christopher Newport University</td>
<td>3.7</td>
<td>1128</td>
<td>23</td>
</tr>
<tr>
<td><strong>Selective – State</strong></td>
<td>Old Dominion University, Longwood University, Shenandoah University, Radford University, Hampton University</td>
<td>3.33</td>
<td>1033</td>
<td>21</td>
</tr>
</tbody>
</table>

## What are the Odds?

See below for information from the Class of 2019 and their acceptance rate at colleges to which over 100 students applied.

- Radford University: 63%
- West Virginia University: 63%
- Bridgewater College: 63%
- Longwood University: 59%
- Hampton University: 48%
- Shenandoah University: 54%
- Virginia Commonwealth University: 57%
- Old Dominion University: 60%

<table>
<thead>
<tr>
<th>University</th>
<th>Acceptance Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Mary Washington</td>
<td>60%</td>
</tr>
<tr>
<td>Marymount University</td>
<td>58%</td>
</tr>
<tr>
<td>George Mason University</td>
<td>60%</td>
</tr>
<tr>
<td>Christopher Newport University</td>
<td>55%</td>
</tr>
<tr>
<td>James Madison University</td>
<td>52%</td>
</tr>
<tr>
<td>Norfolk State University</td>
<td>44%</td>
</tr>
<tr>
<td>Virginia State University</td>
<td>48%</td>
</tr>
<tr>
<td>Virginia Tech</td>
<td>52%</td>
</tr>
<tr>
<td>College of William and Mary</td>
<td>32%</td>
</tr>
<tr>
<td>University of Virginia</td>
<td>30%</td>
</tr>
<tr>
<td>George Washington University</td>
<td>28%</td>
</tr>
<tr>
<td>Howard University</td>
<td>21%</td>
</tr>
<tr>
<td>New York University</td>
<td>12%</td>
</tr>
<tr>
<td>Penn State</td>
<td>56%</td>
</tr>
</tbody>
</table>

## Virginia Public Four Year Colleges and Universities

- Christopher Newport University
- College of William and Mary
- George Mason University
- James Madison University
- Longwood University
- Norfolk State University
- Old Dominion University
- University of Mary Washington
- University of Virginia
- University of Virginia's College at Wise
- Virginia Commonwealth University
- Virginia Military Institute
- Virginia State University
- Virginia Tech

## Virginia Public Community Colleges

- Virginia Public Community Colleges
- Blue Ridge Community College
- Central Virginia Community College
- Dabney S. Lancaster Comm. College
- Danville Community College
- Eastern Shore Community College
- Germanna Community College
- J Sergeant Reynolds Comm. College
- John Tyler Community College
- Lord Fairfax Community College
- Mountain Empire Community College
- New River Community College
- Northern Virginia Community College
- Patrick Henry Community College
- Paul D Camp Community College
- Piedmont Virginia Community College
- Rappahannock Community College
- Southside Virginia Community College
- Southwest Virginia Comm. College
- Thomas Nelson Community College
- Tidewater Community College
- Virginia Highlands Community College
- Virginia Western Community College
- Wytheville Community College
**Historically Black Colleges & Universities**

<table>
<thead>
<tr>
<th>State</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Alabama A&amp;M University</td>
</tr>
<tr>
<td></td>
<td>Alabama State University</td>
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**Colleges with large Hispanic enrollments (50% or more)**

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Post-Secondary Planning Timeline
Are you “Ready to Go”?

9th Grade

Investigate
- High school graduation requirements;
- Interests as they relate to careers;
- Personal strengths; and
- Skills you have and those which you need to build.

Create
- Personal portfolio – gather your report cards, evidence of awards and honors, and a list of school and community activities; and
- Personal goals using the Naviance Student Program.

Action
- Take challenging courses;
- Meet with your school counselor to discuss post-secondary goals;
- Read as much as you can from a variety of materials;
- Prepare for the PSAT and Pre-ACT;
- Volunteer or work part-time;
- Participate in extra-curricular activities; and
- Update your Academic and Career Plan.

10th Grade

Investigate
- Career options;
- College entrance requirements at most competitive colleges include:
  - English (4 units);
  - Social Studies (4 units);
  - Science (3-4 units);
  - World Language (3-4 units);
  - Mathematics (3-4 units, at least up to Algebra II); and
  - Fine/Practical Arts Electives (with a focus).
- The cost of post-secondary education; and
- AP/IB/AICE Courses.

Create
- Update your personal portfolio throughout the school year.
- Create a resume using the Naviance Student Program.
- Update and modify your personal goals as needed.

Action
- Continue to take challenging courses.
- Meet with your school counselor to evaluate your current performance as it pertains to future goals.
- Read as much as you can from a variety of materials.
- Take the PSAT and/or Pre-ACT tests.
- Volunteer or work part-time.
- Start saving for college.
- Participate in extra-curricular activities.

11th Grade

Investigate
- College options and the application process;
- NCAA Clearinghouse for potential college athletes;
- Personal traits and how they relate to future plans; and
- Dual Enrollment with Northern Virginia Community College.

Create
- Update personal goals.
- Update personal portfolio.
- Finalize and update your resume in the Naviance Student Program.

Action
- Continue to take challenging courses to include AP/IB/AICE.
- Take the PSAT in the Fall of your junior year.
- Take the SAT or ACT in the Spring of your junior year. Remember, SAT preparation is now free at www.khanacademy.org.
- Form relationships with teachers and determine who you may ask for a letter of recommendation.
- Participate in extra-curricular activities and consider options for leadership within organizations.
- Attend college fairs.
- Visit college campuses during spring break.
- Meet with your school counselor to update your Academic and Career Plan and begin to finalize your post-secondary plan.
12th Grade

Investigate
• College entrance requirements;
• College application deadlines;
• Financial aid deadlines;
• Scholarship options;
• College majors; and
• Community College options.

Create
• Update your personal portfolio throughout the school year.
• Finalize your resume using the Naviance Student Program.
• Finalize your personal goals.

Action

June-August:
• Prepare for the SAT/ACT. Remember, preparation is free at www.khanacademy.org.
• Practice completing online applications.
• Practice college essays and ask family, friends and teachers to review your writing.
• Decide if you will apply to college early.
• Work part-time or intern.

September:
• Meet with your school counselor for your senior interview.
• Register for the fall SAT/ACT tests.
• Search for colleges and make a plan for meeting application deadlines.
• Request letters of recommendation from teachers and family friends.

October-December:
• Complete the Free Application for Federal Student Aid (FAFSA) with your parents.
• Take the SAT I/SAT II/ACT again if needed.
• Request recommendations from teachers.
• Apply to colleges.

January-March:
• Complete scholarship applications.
• Continue to apply to colleges.

April:
• Review college acceptance decisions and finalize your college choice.
• Notify your selected school by sending letter of commitment and submitting a deposit check.
• Review any financial aid packages and scholarship awards with your parents.
• Study for AP/IB/AICE Exams.
• Apply to Northern Virginia Community College if that is your chosen path.
• Take the Northern Virginia Community College placement test if needed.

May:
• Take AP/IB/AICE exams.
• Send thank you notes to people who wrote letters of recommendation.

June:
• Inform your school counselor of any earned scholarships.
• Inform your school counselor about your final post-secondary plan.
• Register for college courses.

July-August:
• Participate in any summer orientation program available at your school of choice.
• Finalize financial aid arrangements.
• Get ready to start college in the fall!

Adapted from Battlefield High School Counseling Department – Counselor, Elizabeth Chase-Kang
20 Questions to Ask your High School Counselor

1. What courses do I need to take to be ready for college?
2. How should I plan my schedule so I'll complete them?
3. Which elective courses do you recommend?
4. Which AP/IB/Cambridge courses should I consider taking?
5. When is the PSAT/NMSQT or Pre-ACT going to be given?
6. How should I study for the SAT or ACT, and is it given at this high school or do I need to go somewhere nearby?
7. Do you have any college planning sessions scheduled?
8. Do you have college handbooks or other guides that I can browse or borrow?
9. What activities can I do at home and over the summer to get ready for college?
10. What kinds of grades do different colleges require?
11. Are there any college fairs at this school, or nearby?
12. What colleges do other kids from our school go to?
13. What are the requirements or standards for the honor society?
14. Can you put me in touch with recent grads who are going to the colleges on my wish list?
15. Do you have any information to help me start exploring careers?
16. If my colleges need a recommendation from you, how can I help you know me better, so it can be more personal?
17. Are there any special scholarships or awards that I should know about now, so I can work toward them?
18. Can I see my transcript as it stands now, to see if everything is as I think it should be?
19. What forms do I use to apply for financial aid and where I can find them online?
20. How does our school compare to others, in terms of test scores and reputation?

Adapted from Collegeboard.com/BigFuture
Terminology

Standards of Learning (SOL)
The Standards of Learning for Virginia Public Schools describe the Commonwealth’s expectations for student learning and achievement in English, mathematics, science, history and social science, technology, the fine arts, world language, health and physical education, and driver education for grades K-12.

Standards of Learning Tests (SOL Tests)
SOL tests are End-of-Course (EOC) tests which are required by the Virginia Department of Education (VDOE) to verify attainment of knowledge and skills in specific English, math, science, and social science courses.

Standard Unit of Credit
A standard unit of credit for graduation is based on a minimum of 140 clock hours of instruction and successful completion of the requirements of the course. A semester course receives one-half credit.

Verified Unit of Credit
A verified unit of credit for graduation is based on a minimum of 140 clock hours of instruction, successful completion of the requirements of the course, and achievement of a passing score on the End-of-Course (EOC) Standards of Learning (SOL) test or additional test for that course as approved by the Board of Education.

Weighted Credit
Weighted credit refers to grade point values assigned to Advanced Placement, IB, and Cambridge courses; certain Career and Technical Education courses; qualifying college courses; and designated prerequisite courses.

Dual Enrolled
Students taking courses from a community college, trade school program, college or university for a credit, while simultaneously enrolled in a Prince William County High School are said to be dual enrolled. Agreements between the college and PWCS must be in place prior to courses being approved for dual enrolled credit.

Elective
Electives are additional courses beyond the required courses that are needed to meet the total minimum standard units of credit for graduation.

Sequential Electives
According to the Virginia Department of Education’s (VDOE) Standards of Quality (SOQ) students who enter the 9th grade for the first time prior to the 2018-19 school year and are pursuing the Standard Diploma or students who enter the 9th grade for the first time during the 2018-19 school year and beyond who are pursuing either the Standard or Advanced Studies diploma must complete at least two sequential electives. Students who successfully complete any career and technical education sequence that consists of at least two 36-week courses or semester equivalents that equal two 36-week courses will fully meet this requirement. For students pursuing the Standard diploma the World Language, Fine Arts, or Career and Technical Education course credit may be used to partially satisfy the sequential elective requirement.

For students pursuing the Advanced Studies diploma who enter the 9th grade during the 2018-19 school year and beyond, the Fine Arts or Career and Technical Education course credit may be used to partially satisfy the sequential elective requirement.

Fine Arts or Career and Technical Education
• Fine Arts courses include those courses which lead to student’s aesthetic education in the areas of visual arts, theatre arts, music, dance, creative writing, journalistic writing, or speech. The course taken to satisfy the fine arts requirement may also serve as one of the two courses required to satisfy the sequential electives requirement.
Career and Technical Education courses are those in which a student is taught 21st century career skills in a real world setting. All courses listed under Career and Technical Education, JROTC, Athletic Training I and II, and Employ I and II courses listed under Special Education meet this graduation requirement. The course taken to satisfy the CTE requirement may also serve as one of the two courses required to satisfy the sequential electives.

**Career and Technical Education Industry Credentialing**

Career and Technical Education industry credentialing can be achieved by successful completion of Career and Technical Education coursework which will enable students to participate in Virginia Board of Education approved assessments for industry credentialing. Students who earn these credentials are eligible to earn verified credits toward graduation requirements. Students pursuing the standard diploma who enter the 9th grade prior to the 2018-19 school year will be required to pass a state approved Career and Technical Education Credentialing exam. All students who enter the 9th grade in 2018-19 and beyond pursuing either the Standard or Advanced Studies diploma will be required to pass a CTE credentialing exam only if he/she has not taken an advanced or honors course for high school credit.

**Advanced Placement, IB Diploma, and Cambridge AICE Courses**

Certain courses have been designated as AP, IB, and Cambridge Courses (AICE). These courses are externally moderated and exceed the expectations of grade-level objectives for a specific subject. Students taking these courses will have a plus sign (+) beside the course title listed on the student report card and on the student transcript. These courses offer the possibility of weighted credit.

**CPR/First Aid and AED Training**

Beginning with first-time 9th grade students in the 2016-17 school year, requirements for the standard and advanced diplomas shall include a requirement to be trained in emergency first aid, cardiopulmonary resuscitation, and the use of automated external defibrillators, including hands-on practice of the skills necessary to perform cardiopulmonary resuscitation. PWCS students will be trained in these skills while enrolled in Health PE I.

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**Student-Selected Verified Credit**

A student-selected Verified Credit can be earned in certain elective courses that include a test approved by the Virginia Board of Education. According to the Standards of Accreditation, a student may utilize additional tests for earning Verified Credit in Computer Science, Technology, or other areas as prescribed by the Board. The Board of Education has provided guidelines for awarding differentiated numbers of Verified Credit for CTE Certification and licensure examinations. Verified credits earned in CTE may be used to satisfy the student selected Verified Credit requirements for the Standard Diploma or the Advanced Studies Diploma. Your school counselor will assist you in determining your Verified Credit status. Beginning with students who enter the 9th grade during the 2018-19 school year and beyond, the student selected verified credit requirement will be eliminated.

**Criteria for Awarding Student-Selected Verified Credit**

Student-selected Verified Credit will be awarded for certification or licensure examinations that meet all of the following criteria:

- Industry certification or licensure examinations that are approved to satisfy the requirements for the Board of Education’s CTE Seal and the Board of Education’s Seal of Advanced Mathematics and Technology will satisfy requirements for student-selected Verified Credits.
- The teacher and/or the CTE program must be certified by the issuing organization relative to the industry certification or license.
- A standard credit may not be verified more than once.

**Earning Student-Selected Verified Credit**

One student-selected Verified Credit will be awarded for passing each certification or licensure examination that meets all of the above criteria, and the student earns one standard unit of credit only in the CTE concentration or specialization.

Two student-selected Verified Credits will be awarded for passing each certification or licensure examination that meets all of the above criteria; and:

- The student meets program completion criteria listed in this course catalog; and
- The student earns at least two standard units of credit in the CTE program completion option.
Course Selection

When selecting courses for the upcoming school year, students and parents/guardians should choose carefully.

The courses selected should be based on the student’s ability, past record of academic achievement, interest in the subject, career goal(s), and teacher recommendations. The pursuit of a course of studies leading to entrance into college may include those courses not directly related to college entrance. Art, music, and Career and Technical Education courses offer students the opportunity to explore new areas of study as well as to gain knowledge and skills that may likely prove useful to them in whatever career they choose.

Through careful course selection and close cooperation between the student and the school counselor, a student will be able to pursue a career goal and still have time for other course offerings without excluding any particular area of study.

This catalog includes a listing of courses taught in Prince William County Public Schools’ high schools. Not all courses are taught in every high school. Course offerings are contingent on sufficient student interest. This may result in some courses not being available in certain schools even though they are listed for those schools. Numbers 1-12 and 99 shown below the course’s descriptive paragraph indicate the schools in which each course is taught. The code number for each high school is as follows:

<table>
<thead>
<tr>
<th>School Number Code:</th>
<th>School</th>
<th>Code:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brentsville</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Gar-Field</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Osbourn Park</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Potomac</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Stonewall</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Woodbridge</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Hylton</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Forest Park</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Battlefield</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Freedom</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Patriot</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Colgan</td>
<td></td>
</tr>
<tr>
<td>99</td>
<td>Virtual @ PWCS</td>
<td></td>
</tr>
</tbody>
</table>

For easy reference, this code is repeated at the bottom of each page of this catalog wherever courses are described. A student desiring to take a course offered at a school other than his/her assigned school should contact his/her school counselor for details.

Course Selection

It should not be assumed that a student must select the Advanced Studies Diploma if the student plans to enter college after high school. The Standard Diploma allows a student the flexibility to schedule courses required for college entrance while leaving time for various electives. It is also possible for a student to select the Advanced Studies Diploma and still have options in areas not necessarily required for college entrance such as art, music, or Career and Technical Education courses.

The scheduling of classes in high school is a highly personal task and should be based on the student’s aptitude and interests, teacher recommendations, and close collaboration among school, student, and parent/guardian.

Driver Education

The classroom driver education course is offered as part of the 10th grade health education curriculum in all high schools. When students successfully complete the classroom phase and have secured a learner's permit, they then may take behind-the-wheel driver instruction. Behind-the-wheel driver instruction in Prince William County Public Schools is offered after school and during the summer. There is a fee for behind-the-wheel driver instruction.
What is dual enrollment?
Dual enrollment is an early college program allowing eligible high school students to simultaneously earn credit toward their high school graduation while also earning college credits.

Who can take a dual enrollment course?
Generally any student who meets the following criteria may take certain dual enrollment courses offered through Northern Virginia Community College (NVCC) and PWCS:
- 11th or 12th Grade standing
- 16 years of age
- Place into college level MATH and ENGLISH courses by receiving a passing score on the Placement Test or an accepted substitute as outlined below:
  - SAT – 480 or higher on both the Reading and Writing section, 530 or higher on the Math section
  - ACT – 18 or higher on both the English Reading and Writing section, 22 or higher on the Math section
  - Virginia SOL – a passing score on the Algebra I, Algebra II, or Geometry SOL will allow students to meet the MATH placement requirement.

Where do I take a dual enrollment course and what is the cost?
PWCS students may take the following courses for dual enrollment credit based on established agreements during the 2020-21 school year:

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology II: Survey of Advanced Topics in Biology</td>
<td>NVCC</td>
</tr>
<tr>
<td>Computer Networking I, II, III, and IV Hardware Operations (CISCO)</td>
<td>NVCC</td>
</tr>
<tr>
<td>Cybersecurity Network Systems</td>
<td>NVCC</td>
</tr>
<tr>
<td>Cybersecurity Systems Technology I and II</td>
<td>NVCC</td>
</tr>
<tr>
<td>Criminal Justice II</td>
<td>NVCC</td>
</tr>
<tr>
<td>Early Childhood Education Services I and II</td>
<td>NVCC</td>
</tr>
<tr>
<td>English College Composition 12</td>
<td>NVCC</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>NVCC</td>
</tr>
<tr>
<td>IB Business Management (SL)</td>
<td>NVCC</td>
</tr>
<tr>
<td>IB Biology (HL)</td>
<td>NVCC</td>
</tr>
<tr>
<td>Intro to Speech Communications</td>
<td>NVCC</td>
</tr>
<tr>
<td>IT Database Design and Management (Oracle)</td>
<td>NVCC</td>
</tr>
<tr>
<td>IT Database Design and Management Advanced (Oracle)</td>
<td>NVCC</td>
</tr>
<tr>
<td>IT Fundamentals</td>
<td>NVCC</td>
</tr>
<tr>
<td>IT Programming, Advanced</td>
<td>NVCC</td>
</tr>
<tr>
<td>IT Web Technologies</td>
<td>NVCC</td>
</tr>
<tr>
<td>IT Web Technologies Advanced</td>
<td>NVCC</td>
</tr>
<tr>
<td>PreCalculus with Trig for AB</td>
<td>NVCC</td>
</tr>
<tr>
<td>Multivariable Calculus</td>
<td>NVCC</td>
</tr>
<tr>
<td>Photography I</td>
<td>NVCC</td>
</tr>
<tr>
<td>SOL English College Composition 11</td>
<td>NVCC</td>
</tr>
<tr>
<td>Survey of World Literature 12</td>
<td>NVCC</td>
</tr>
<tr>
<td>Virginia Teachers for Tomorrow (through Shenandoah University)</td>
<td>NVCC</td>
</tr>
<tr>
<td>US/VA Government</td>
<td>NVCC</td>
</tr>
<tr>
<td>US/VA History</td>
<td>NVCC</td>
</tr>
<tr>
<td>Welding I, II, and III</td>
<td>NVCC</td>
</tr>
</tbody>
</table>

For Northern Virginia Community College courses taken in a Prince William County Public School there will not be a charge for tuition. See your school counselor for more information about fees associated with dual enrollment.

I am ready to take a dual enrollment course! How do I get started?
Indicate your interest in dual enrollment when you meet with your school counselor to discuss course selection prior to the start of your junior year. Your school counselor will guide you through the next steps to include completing a PWCS Dual Enrollment application and the NVCC application.

Can I take NVCC courses for college credit only?
Some students wish to get a head start on their college course work while in high school and wish to take classes that are not included in the dual enrollment agreement. If the student meets admission requirements and has permission from their family and principal, they may enroll in NVCC courses while they are in high school. Interested students should discuss this option with their school counselor for more information.
How Can My High School Course Work Earn Me College Credit?

Students may take dual enrollment courses as "contract dual enrollment" by attending their community college classes on PWCS high school campuses and receiving instruction from PWCS teachers who are authorized to teach dual enrollment courses by the community college or university partners of the Division.

Students may also take "on campus" courses at the community college for dual enrollment credit for those courses identified in the Division's annual list of published dual enrollment offerings.

Students wishing to take courses not included in the Division's list of dual enrollment course offerings may take "college credit only" offerings with the community college or university.

In all cases, students must meet the entrance requirements of the community college or university and have their principal's permission to enroll in courses offered for college credit with those schools the Division has partnered with for these opportunities.

| Dual Enrollment | • Many earned credits with a "C" or better transfer to most four year colleges  
|                 | • Courses may fall within a specific subject area or may be considered an elective  
|                 | • The awarding of college credit for courses taken in high school varies and students should research the specific school they wish to attend. |
| Advanced Placement (AP) | • Earned exam score of 3 or higher may qualify the student to earn college credit  
|                           | • Earned exam scores of 4 or 5 may qualify students for up to 6 college credits per one AP course.  
|                           | • The awarding of college credit for courses taken in high school varies and students should research the specific school they wish to attend. |
| International Baccalaureate (IB) | • Earned exam score of 4 or higher may qualify the student to earn college credit.  
|                                     | • Earned exam scores of 5, 6, and 7 may qualify students for up to 9 college credits per one IB course.  
|                                     | • The awarding of college credit for courses taken in high school varies and students should research the specific school they wish to attend. |
| Cambridge (IGSCE) | • Earned exam grades of C or higher may qualify the student to earn college credit.  
|                           | • Earned exam grades of A or B on A level exams may qualify students for up to 6 college credits per one Cambridge course.  
|                           | • The awarding of college credit for courses taken in high school varies and students should research the specific school they wish to attend. |

Information for all Virginia Public Four Year Colleges can be found at [www.schev.edu/index/students-and-parents/prepare/credit-for-ap-ib-cambridge-and-clep-exams](http://www.schev.edu/index/students-and-parents/prepare/credit-for-ap-ib-cambridge-and-clep-exams)
Why Should I Take Advanced Course Work During High School?

**College Admissions**

**Schedule Strength Matters**
Colleges want to see students challenge themselves to the best of their ability.

**Preparation for College**
Many students find their college course work to be easier after taking a challenging high school curriculum.

**Challenge Yourself**

**Rigor is Best**
Most colleges want to see students take English, Math, Science, Social Studies and World Language each year of high school.

**Life Long Payoff**
Students who take rigorous courses during high school often do better in college and in turn are able to secure more stable employment.

**Start a College Transcript**

**Dual Enrollment**
Students start a college transcript in high school when they take an approved Dual Enrollment course.

**Head Start**
Students who take college courses, at low or no cost during high school, can save money on college tuition and are more likely to graduate college early or on time.

**Balance is Best!**
Students should make sure to leave plenty of time to participate in extracurricular activities both at school and in the community.
Eligibility Requirements
(Extracurricular Activities)

The following applies to interscholastic athletics, cheerleading, marching band, and drill team.

- A student must pass five subjects and earn a “C” or better in two subjects at the end of the first semester, and at the end of the school year to remain eligible for participation. This applies to practice as well as to games.
- Initial determination of eligibility at the beginning of a new semester is made on the first calendar day following the end of the previous semester. Student assistant electives such as science lab assistant, library lab assistant, physical education assistant, and student assistant for special education shall not be counted toward meeting the standards.

**Virginia High School League Athletic Eligibility For Students Who Transfer To Specialty Programs**

Students who are granted approval to transfer to a school outside their established attendance area shall be eligible to participate in Virginia High School League (VHSL) activities when entering the school as a first time 9th grade student. Any student who transfers after establishing eligibility in the freshman year at his or her base school shall be ineligible to participate in VHSL-sponsored activities for 365 days of the transfer to a requested school. Only the Superintendent of Schools or designee may grant a waiver to the VHSL transfer rule based on a decision made by the School Division that requires the transfer of the student, but not for athletic and/or activity purposes. (VHSL Handbook, Transfer Rule 28A-7-1.)

- Students who transfer to a school to participate in a designated site program shall meet all eligibility requirements for VHSL-sponsored activities. The transfer shall become effective when the student enters the program. The student shall meet full participation requirements for the program in order to retain eligibility and remained enrolled at that school.
- Once a student establishes eligibility in a high school, any additional transfer requests for designated site programs shall not be considered for a waiver and the student shall be ineligible for 365 days from the date of the transfer.

**Athletic Activity Participation**

The Virginia High School League rules specify that in order to participate in varsity or junior varsity athletics, drama, forensics, debate, scholastic bowl, cheerleading, and any academic or athletic activities involved in competition between/among schools, a student must have passed five subjects during the preceding semester and must be enrolled in five subjects during the current semester. In addition to meeting Virginia High School League regulations, students will be required to meet PWCS eligibility standard (requirement) each semester. End of the year grades from the previous school year will determine eligibility for the first semester of the next year.
NCAA Eligibility

Students planning to participate in intercollegiate athletics at an NCAA Division I or Division II institution must have their academic and amateurism status certified by the NCAA Eligibility Center. To play sports a student must graduate from high school, earn a minimum GPA of 2.300 for Division I and a GPA of 2.200 for Division II in 16 core courses, and earn a minimum sum ACT or SAT score that matches the core-course GPA on the Division I & II NCAA sliding scale. Middle school credit bearing courses can be used to satisfy core-course requirements.

**Division I Academic Eligibility Requirements**
- Four years English;
- Three years mathematics (at least Algebra I level or higher);
- Two years social science;
- Two years natural or physical science (one lab if offered at any high school attended);
- One year additional English, mathematics, or natural/physical science;
- Four years additional from areas above or World Language, philosophy, or comparative religion;
- 1) Full qualifier = competition, athletics aid (scholarship), and practice the first year;
  2) Academic redshirt = athletics aid in the first year, practice in the first regular academic term (semester or quarter);
  3) Nonqualifier = no athletics aid, practice or competition; and
- 10 core courses required before beginning of the seventh semester.

**Division II Academic Eligibility Requirements**
- Complete 16 core courses;
- Three years English;
- Two years mathematics (Algebra I or higher);
- Two years social science;
- Two years natural or physical science (including one lab course);
- Three years additional courses in English, mathematics, or natural or physical science;
- Grade point average of 2.200 in core courses; and
- Four additional years of English, Math, Natural or Physical Science, World Language, philosophy, or comparative religion.

Core courses, high school transcripts, and test scores for all prospective Division I and Division II students must be reviewed by the NCAA Eligibility Center. School counselors and student activities coordinators at each high school can direct students regarding the submission of the Student Release Form, appropriate records, and a fee.

The NCAA rules are complex, so students should ask coaches, student activities coordinators, and school counselors for help. It is important to let the school counselor know if a student plans to seek an athletic scholarship to ensure that the course selection process is tailored to this need. More detailed information is available on the NCAA Web site at www.ncaa.org/.
The Pre-Governor’s School @ Osbourn Park Senior High School

Key Elements of the Pre-Governor’s School Program Include:

- Students will be supported through the simultaneous study of two math courses in 9th grade, and Precalculus with Trigonometry for AB (or a higher Mathematics course) by the end of 10th grade.
- Students will study two Science courses in 10th grade to allow for the completion of SOL Physics prior to 11th grade.
- A dedicated school counselor will support Pre-Governor’s school students to ensure appropriate course selection in preparation for the various academic pathways available at GS@IP, and work with students during their four years of study.
- Students will have the opportunity to study Health and PE I and Health and PE II through Virtual Prince William at no cost to the student. This allows students to meet an additional graduation requirement prior to joining GS@IP.
- Pre-Governor’s School students will be strategically grouped to support the accelerated study of Math and Science in 9th and 10th grade.

Program Requirements

Students participating in the Pre-Governor’s School at Osbourn Park will maintain year end grades of B or better in their core subject areas. Students will study in eight classes during grades 9 and 10 (HPE I and HPE II through Virtual Prince William during the spring semester). Students will be encouraged to fulfill the Economics and Personal Finance (or AP Economics) graduation requirement in 10th grade. Students will also be required to undergo authentic research in support of the GS@IP application process. Students who do not attend GS@IP will have opportunities to study advanced (college-level) course work with an emphasis in Math, Science, and Engineering at Osbourn Park High School during 11th and 12th grade.

Sample Course Schedule

The following schematic reflects a sample course schedule for a PGS@OP student during a two-year sequence of study. Moreover, it indicates the additional program opportunities that will be available to PGS@OP students in an effort to accelerate the study of math and science.
### 9th Grade

- Pre-AP English 9
- Pre-AP World History I
- Pre-AP Biology
- Pre-AP Geometry
- Algebra II *
- World Language
- Elective/Fine Art
- Health and PE I (Virtual)

### 10th Grade

- Pre-AP English 10
- AP World History, or World History II
- Precalculus with Trigonometry for AB *
- Pre-AP Chemistry
- Physics I *
- World Language
- Economics and Personal Finance or AP Economics
- Health and PE II (Virtual)

Note: Three years of a single world language or two years of two separate languages are required for advanced diploma candidates.

Courses marked with * are courses in which PGS@OP students will be grouped for accelerated study.

**Course Work** The following courses are designated as Pre-Governor’s School courses:

<table>
<thead>
<tr>
<th>COURSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-AP English 9</td>
</tr>
<tr>
<td>Pre-AP English 10</td>
</tr>
<tr>
<td>Pre-AP World History I</td>
</tr>
<tr>
<td>World History II</td>
</tr>
<tr>
<td>AP World History</td>
</tr>
<tr>
<td>AP Economics</td>
</tr>
<tr>
<td>Pre-AP Biology</td>
</tr>
<tr>
<td>Pre-AP Chemistry</td>
</tr>
<tr>
<td>Physics I</td>
</tr>
<tr>
<td>Geometry</td>
</tr>
<tr>
<td>Algebra II</td>
</tr>
<tr>
<td>Precalculus with Trigonometry for AB</td>
</tr>
<tr>
<td>Precalculus for BC</td>
</tr>
</tbody>
</table>
The Governor’s School @ Innovation Park

Program of Study and Curriculum Overview
The Governor’s School @ Innovation Park provides an alternative learning environment in a university-setting designed to meet the needs of academically talented and highly motivated learners. The STEM program provides a uniquely designed integrated science, math, engineering, and technology curriculum with real world research and application opportunities.

Students attending The Governor’s School will be engaged in multiple opportunities to develop their leadership skills and potential by applying their intellectual design based on research into action proposals.

Students attending the partial-day program at The Governor’s School will have opportunity to continue being involved in the social and extracurricular activities offered by their base schools. By providing a dual enrollment program, The Governor’s School @ Innovation Park enables college-bound students to be challenged with college level content while earning both high school and college credits in science and math. Students will also be awarded opportunities to interact with science researchers and learn about possible career opportunities.

Interdisciplinary Connectivity and Technology Integration
The Governor’s School faculty collaborates to integrate content knowledge and skills across disciplines. Students are challenged to understand and engage in the process of scientific investigation using state-of-the art technology and to utilize their technical writing skills to present their findings.
**Courses and Dual Enrollment**

NOTE: All courses are reported on high school transcripts as weighted semester courses

<table>
<thead>
<tr>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Math</strong></td>
<td><strong>Math</strong></td>
</tr>
<tr>
<td>Pre-calculus</td>
<td>Calculus I Parts A/B</td>
</tr>
<tr>
<td>Calculus I Parts A/B</td>
<td>Calculus I/II</td>
</tr>
<tr>
<td>Or</td>
<td>Or</td>
</tr>
<tr>
<td>Calculus I/II</td>
<td>Calculus III/Linear Algebra</td>
</tr>
<tr>
<td><strong>Science</strong></td>
<td><strong>Science</strong></td>
</tr>
<tr>
<td>Biology I</td>
<td>Biology II</td>
</tr>
<tr>
<td>Chemistry I</td>
<td>Chemistry II</td>
</tr>
<tr>
<td>Or</td>
<td>Or</td>
</tr>
<tr>
<td>Physics I</td>
<td>Physics II</td>
</tr>
<tr>
<td><strong>Technology/Engineering</strong></td>
<td><strong>Technology/Engineering</strong></td>
</tr>
<tr>
<td>Principles of Technology and Engineering I</td>
<td>Principles of Technology and Engineering II</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td><strong>Research</strong></td>
</tr>
<tr>
<td>Hands-on research in science area of interest</td>
<td>Hands-on research in science area of interest</td>
</tr>
</tbody>
</table>

**Course Options**

<table>
<thead>
<tr>
<th>GS Course Names</th>
<th>George Mason University Dual Enrollment Option Names</th>
<th>AP Exam Option</th>
<th>University Credit Transferability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Calculus</td>
<td>(Math 105)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Calculus I Parts A and B</td>
<td>(Math 123 – 124)</td>
<td>Yes – Calc AB</td>
<td>Likely – AP waiver equivalent course</td>
</tr>
<tr>
<td>Honors Calculus I/II</td>
<td>(Math 115 and 116)</td>
<td>Yes – Calc BC</td>
<td>Likely – AP waiver equivalent course</td>
</tr>
<tr>
<td>Calculus III – Linear Algebra</td>
<td>(Math 215 and 203)</td>
<td>No</td>
<td>Likely – comparable course</td>
</tr>
<tr>
<td>Advanced Biological Studies I</td>
<td>(Biology 103 – 104)</td>
<td>Yes</td>
<td>Possibly science elective</td>
</tr>
<tr>
<td>Advanced Biological Studies II (Microbiology and Anatomy @ Physiology)</td>
<td>(Biology 124 and 246)</td>
<td>No</td>
<td>Possibly science electives</td>
</tr>
<tr>
<td>Advanced Chemistry I</td>
<td>(Chemistry 211 – 212)</td>
<td>Yes</td>
<td>Likely – AP waiver equivalent course</td>
</tr>
<tr>
<td>Advanced Chemistry II (Intro Organic Biochem and Environmental Chem)</td>
<td>(Chemistry 104 and 155)</td>
<td>No</td>
<td>Possibly science electives</td>
</tr>
<tr>
<td>Advanced Physics I</td>
<td>(Physics 243/244 – 245/246)</td>
<td>Appropriate AP Phys Exam</td>
<td>Likely – AP waiver equivalent course; Possibly science elective for Physics majors</td>
</tr>
<tr>
<td>Principles of Technology and Engineering I</td>
<td>(Computer Science 112, Engineering 107)</td>
<td>No</td>
<td>Likely – comparable courses</td>
</tr>
<tr>
<td>Principles of Technology and Engineering I/II Innovations Strand</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Principles of Technology and Engineering II</td>
<td>(Civil and Infrastructure Engineering – CEIE 203, Computer Science 211, Bioengineering)</td>
<td>CS only</td>
<td>Likely – comparable courses</td>
</tr>
<tr>
<td>Junior Year Research</td>
<td>(COS 120)</td>
<td>No</td>
<td>Possibly science elective</td>
</tr>
<tr>
<td>Senior Year Research</td>
<td>(COS 120)</td>
<td>No</td>
<td>Possibly science elective</td>
</tr>
</tbody>
</table>
George Mason University Courses Equivalents

*Bold and italicized text indicates three math courses generally paid for as dual enrollment by school division. Please note student can select one of the three courses paid for by school division to be science or engineering.*

Schedule for Students enrolling in Pre-Calculus Junior Year:

<table>
<thead>
<tr>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall Semester</strong></td>
<td></td>
</tr>
<tr>
<td>Math Strand</td>
<td>Math 105 (4 Credits)</td>
</tr>
</tbody>
</table>
| Science Strand | Chem 211 (4 Credits)  
Biol 103 (4 Credits)  
Phys 243 (4 Credits) |
| **Spring Semester** | |
| Math Strand | Math 123 (3 Credits) |
| Science Strand | Chem 212 (4 Credits)  
Biol 104 (4 Credits)  
Phys 245 (4 Credits) |

Schedule for Students enrolling in Honors Calculus I/II Junior Year:

<table>
<thead>
<tr>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall Semester</strong></td>
<td></td>
</tr>
<tr>
<td>Math Strand</td>
<td>Math 115 (4 Credits)</td>
</tr>
</tbody>
</table>
| Science Strand | Chem 211 (4 Credits)  
Biol 103 (4 Credits)  
Phys 243 (4 Credits) |
| **Spring Semester** | |
| Math Strand | Math 116 (4 Credits) |
| Science Strand | Chem 212 (4 Credits)  
Biol 104 (4 Credits)  
Phys 245 (4 Credits) |
Advanced Placement Scholars
Patriot High School
Woodbridge High School

Application Process and Levels of Participation
Students will apply to enter the Advanced Placement Scholars program by February 1 by completing the Prince William County Public Schools’ common specialty program online application. To remain in the Advanced Placement Scholars program students must meet the minimum participation criteria as follows:

• 9th Grade – Enroll in two or more Pre-AP courses, and complete the year with a “C” equivalent or better in all courses.
• 10th Grade – Enroll in any combination of two or more Pre-AP or AP courses, and complete the year with a “C” average or better in all courses.
• 11th Grade – Enroll in two or more AP courses, and complete the year with a “C” equivalent or better in all courses.
• 12th Grade – Enroll in two or more AP courses, and complete the year with a “C” equivalent or better in all courses.
• Patriot High School also requires that students enroll in at least six AP courses before graduation.

Instructional/Community Service
As a member of the Advanced Placement Scholars program, students will be required to complete 15 hours of instructional support and/or community service hours per year or 60 hours before graduation. The purpose of including instructional support in the program is to build a support system for all participating students. By providing a structural framework that enables strong students to work with students having initial difficulties, the members of the Advanced Placement Scholars program will form a connection based upon a mutual desire to be academically successful. Types of activities students may complete are indicated below and may vary by school:
1. Volunteer as a research assistant in the library;
2. Assist with the AP Scholars tutoring program;
3. Assist with the SOAR Program in the summer;
4. Mentor new Advanced Placement Scholars participants;
5. Mentor Advanced Placement Scholars probationary students;
6. Assist with core area study sessions established by the teachers; or
7. Participate in other service hours deemed appropriate by the program coordinator.

End Product for Students
The Advanced Placement Scholars program will help to support students in achieving high scores on College Board Advanced Placement exams. In addition to earning AP Scholars distinction at the school level, students participating in the program may be recognized by the College Board in the categories listed below:

• AP Scholar: Granted to students who receive scores of 3 or higher on three or more AP Exams.
• AP Scholar with Honor: Granted to students who receive an average score of at least 3.25 on all AP Exams taken and scores of 3 or higher on four or more of these exams.
• **AP Scholar with Distinction**: Granted to students who receive an average score of at least 3.5 on all AP Exams taken and scores of 3 or higher on five or more of these exams.

• **National AP Scholar**: Granted to students who receive an average score of 4 or higher on eight or more AP exams.

A final portfolio or coursework in AP Research is a required component of the AP Scholars Program at both Patriot and Woodbridge High Schools. Students will receive information about this portfolio or coursework at the school level.

The following schematic reflects a recommended four-year course of study for students in the Advanced Placement Scholars program:

### 9th Grade
- Pre-AP English 9
- Pre-AP World History I
- Pre-AP Biology or Advanced Earth Science
- Algebra I or Pre-AP Geometry
- Level I, II, or III of World Language
- Health and Physical Education I
- Elective

### 10th Grade
- Pre-AP English 10
- AP World History
- Pre-AP Biology I or Pre-AP Chemistry
- Pre-AP Geometry or Algebra 2/Trig
- Level I, II, or III of World Language
- Health and Physical Education II
- Elective

### 11th Grade
- AP English Language and Composition
- AP US History
- AP Science
  - Students may choose from AP Biology, AP Chemistry, AP Physics, or AP Environmental Science
- Precalculus for BC or Precalculus with Trigonometry for AB
- Level IV Advanced or Level V AP Language
- Economics/Finance (for 9th grade class of 2011 and beyond)
- Open Elective
- Suggestions for Open Elective:
  - AP European History, AP Human Geography,
  - AP Economics, AP Music Theory, AP Studio Art,
  - AP Computer Science, AP Statistics

### 12th Grade
- AP English Literature and Composition
- AP US Government
- AP Science
  - Students may choose from AP Biology, AP Chemistry, AP Physics, or AP Environmental Science
- AP Calculus AB or BC
- Level IV Advanced or Level V AP Language
- Open Elective
- Suggestions for Open Elective:
  - AP European History, AP Human Geography,
  - AP Economics, AP Music Theory, AP Studio Art,
  - AP Psychology, AP Computer Science,
  - AP Statistics, AP Art History
The following courses are designated as Pre-Advanced Placement or Advanced Placement Courses and may be used to satisfy the requirements for participation in the Advanced Placement Scholars program:

<table>
<thead>
<tr>
<th>COURSES</th>
<th>COURSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-AP English 9</td>
<td>AP Spanish Literature</td>
</tr>
<tr>
<td>Pre-AP English 10</td>
<td>Pre-AP Geometry</td>
</tr>
<tr>
<td>AP Language and Composition</td>
<td>Pre-AP Alg II/Trig</td>
</tr>
<tr>
<td>AP Literature and Composition</td>
<td>Precalculus for BC</td>
</tr>
<tr>
<td>Pre-AP World History I</td>
<td>Precalculus with Trigonometry for AB</td>
</tr>
<tr>
<td>AP World History</td>
<td>AP Calculus AB</td>
</tr>
<tr>
<td>AP US History</td>
<td>AP Calculus BC</td>
</tr>
<tr>
<td>AP US Government</td>
<td>AP Computer Science A</td>
</tr>
<tr>
<td>AP European History</td>
<td>AP Statistics</td>
</tr>
<tr>
<td>AP Human Geography</td>
<td>Adv. Earth Science</td>
</tr>
<tr>
<td>AP Psychology</td>
<td>Pre-AP Biology</td>
</tr>
<tr>
<td>AP Economics</td>
<td>Pre-AP Chemistry</td>
</tr>
<tr>
<td>Advanced German III</td>
<td>AP Physics 1</td>
</tr>
<tr>
<td>Advanced Latin III</td>
<td>AP Physics 2</td>
</tr>
<tr>
<td>Advanced Russian III</td>
<td>AP Biology</td>
</tr>
<tr>
<td>Advanced Spanish III</td>
<td>AP Chemistry</td>
</tr>
<tr>
<td>Advanced French III</td>
<td>AP Physics C</td>
</tr>
<tr>
<td>Advanced German IV</td>
<td>AP Environmental Science</td>
</tr>
<tr>
<td>Advanced Latin IV</td>
<td>AP Music Theory</td>
</tr>
<tr>
<td>Advanced Russian IV</td>
<td>AP Studio Art</td>
</tr>
<tr>
<td>Advanced Spanish IV</td>
<td>AP Seminar</td>
</tr>
<tr>
<td>Advanced French IV</td>
<td>AP Research</td>
</tr>
<tr>
<td>AP Spanish Language</td>
<td>AP Art History</td>
</tr>
<tr>
<td>AP French Language</td>
<td></td>
</tr>
</tbody>
</table>
Center for Applied Science, Interactive and Information Technology (CASIIT) at Battlefield High School

**Applied Sciences:**
- Computer Science
- Engineering with Robotics
- Renewable Energy and Sustainability

**Interactive Technologies:**
- Computer Graphics
- Multi-Media
- Photography

**Information Technology:**
- Software Design
- Web Technologies
- Database
- Networking
- Cyber

Some courses in the CASIIT program are offered for Dual Enrollment through a partnership with Northern Virginia Community College.

A series of professional certificate programs are designed for the standard or advanced diploma student. These areas of study will immerse the student in a one- or two-year program of study, which after successful completion of the exam, could lead to professional industry certification.

**CASIIT Clubs, Teams and Organizations**
- Computer Science Team
- FTC Robotics Teams
- FRC Robotics Team
- CyberPatriot Team
- BEST Club (computer refurbishment)
- Board Game Club
- CASIIT Newsletter Team
- CASIIT Website Team
- Environmental Club
- National Art Honor Society
- PWC Elementary Schools
  - Mentoring FLL teams at PWC Elementary Schools
  - Family Code Night
- PWC Library System
  - Girls Code program
  - Senior Citizens technology help program

With the speed and breadth of innovative change, students entering the next generation technological workplace will need to be able to adapt to rapid change while thinking critically and creatively. The everchanging and interactive nature of the technology workplace will also require students to demonstrate highly developed social and technical intelligence. The CASIIT program provides the courses and the foundational knowledge to prepare students for entry into the future world of industry and technology.

The CASIIT program offers students the opportunity to choose from three focus areas: Applied Science, Interactive Technologies, and Information Technology. Within each area students then have the freedom to specialize their learning to a more personal level.

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The CASIIT program offers students the opportunity to choose from three focus areas: Applied Science, Interactive Technologies, and Information Technology. Within each area students then have the freedom to specialize their learning to a more personal level.
# Applied Science Course Offerings

**Grade 9**
- Advanced Computer Math
- Engineering Explorations with Robotics

**Grade 10**
- Advanced Computer Math
- Engineering Explorations with Robotics

**Grade 11**
- Advanced Computer Math
- Engineering Explorations with Robotics
- Sustainability and Renewable Technology
- AP Computer Science
- Data Structures and Algorithms

**Grade 12**
- Advanced Computer Math
- Engineering Explorations with Robotics
- Sustainability and Renewable Technology
- AP Computer Science
- Data Structures and Algorithms
- Advanced Computer Studies

# Interactive Technology Course Offerings

**Grade 9**
- CASIIT Graphic Design

**Grade 10**
- CASIIT Computer Graphics I

**Grade 11**
- CASIIT Computer Graphics II
- CASIIT Multimedia Software Design and Development I
- Photography I
- Pre-AP Art Portfolio

**Grade 12**
- Photography II
- CASIIT Multimedia Software Design and Development II
- AP Studio Art Drawing
- AP Studio Art 2-D Design

# Information Technology Course Offerings

**Grade 9**
- CASIIT IT Fundamentals DE
- CASIIT Web Technologies

**Grade 10**
- IT Fundamentals DE
- CASIIT Web Technologies
- CASIIT Advanced Web Technologies (DE)
- CASIIT Programming (DE)
- Computer Networking Hardware Operations I, II (DE)

**Grade 11**
- CASIIT IT Fundamentals (DE)
- CASIIT Web Technologies
- CASIIT Advanced Web Technologies (DE)
- CASIIT Programming (DE)
- CASIIT Database Design and Management (DE)
- Computer Networking Hardware Operations I, II (DE)
- Computer Networking Hardware Operations III, IV (DE)
- Cybersecurity Network Systems (DE)
- Cybersecurity Systems Technology (DE)

**Grade 12**
- CASIIT IT Fundamentals (DE)
- CASIIT Web Technologies
- CASIIT Advanced Web Technologies (DE)
- CASIIT Programming (DE)
- CASIIT Database Design and Management (DE)
- CASIIT Advanced Database Design and Management (DE)
- Computer Networking Hardware Operations I, II (DE)
- Computer Networking Hardware Operations III, IV (DE)
- Cybersecurity Network Systems (DE)
- CASIIT Cybersecurity Systems Technology (DE)
Key elements of the Biotech and Engineering Program include:

- Specialized science courses in Biology, Chemistry, Earth Science, and Physics
- During grades 9 and 10, Social Studies and Language Arts classes are integrated with the Biotechnology and Engineering Center and designed to help students examine how history, literature, art, architecture, music, and philosophy are influenced by science
- During grades 11 and 12, students will select and complete either a Biotechnology or Engineering strand to complete the program
- A wide variety of science, math, and engineering choices that include high interest classes
- Advanced Placement (AP) courses in Biology, Chemistry, Environmental Science, Physics, Statistics, Calculus (AB&BC), Computer Science, AP Seminar, and AP Research, that provide the opportunity to earn college credits while still in high school
- Science and engineering related extracurricular and co-curricular community activities and partnerships

Program Requirements

Students must be enrolled in at least one Biotechnology & Engineering Center class each year to stay in the program. Students participating in the Biotechnology & Engineering Center are required to earn year-end grades of “C” or better in their core subject areas (Language Arts, Social Studies, Math, and Science) to maintain good standing in the program. In order to receive The Biotechnology & Engineering Center Certificate, students must successfully complete at least seven full-year science, math, and engineering classes with a grade of “C” or better. These classes must include Pre-AP Biology, Pre-AP Chemistry, Physics, and at least two Advanced Placement (AP) science classes for the Biotechnology strand and must include Pre-AP Biology, Pre-AP Chemistry, two Engineering courses, and four AP science and math courses for the Engineering strand. Students are also required to complete and document 100 hours that represent an array of extra and co-curricular efforts that support the program goals and relate to their sub-discipline areas of interest.
The following schematic reflects sample frameworks for a Biotechnology & Engineering four year course of study. Units of credit for each course are also indicated. Bolded courses indicate Advanced Placement. **Advanced Placement** courses provide the opportunity to earn college credits while still in high school.

### 9th Grade
- (1) Pre-AP Biology
- (1) Pre-AP English 9
- (1) Pre-AP World History I
- (1) Health and PE 9
- (1) Mathematics
- (1) World Language
- (1) Scientific Illustration

### 10th Grade
- (1) Pre-AP Chemistry
- (1) Pre-AP English 10
- (1) AP World History
- (1) Health and PE 10
- (1) Mathematics
- (1) World Language
- (1) Student Elective

### 11th Grade
**Biotechnology Strand**
- (1) AP Biology or AP Environmental Science
- (1) AP Language and Composition or English 11
- (1) Mathematics
- (1) AP US/VA History or US/VA History
- (1) Physics I
- (1) PLTW Engineering or PLTW Biomedical Science Course
- (1) Student Elective

**Engineering Strand**
- (1) AP Physics
- (1) AP Biology or AP Chemistry
- (1) PLTW Principles of Engineering or PLTW Introduction to Engineering Design
- (1) AP US/VA History of US/VA History
- (1) AP Language and Composition or English 11
- (1) Precalculus with Trigonometry for AB or Precalculus for BC
- (1) Student Elective

### 12th Grade
**Biotechnology Strand**
- (1) AP Physics or AP Chemistry
- (1) AP Literature or English 12
- (1) AP US/VA Government or US/VA Government
- (1) Mathematics
- (1) PLTW Engineering or PLTW Biomedical Course
- (1) Student Elective
- (1) Student Elective

**Engineering Strand**
- (1) AP Computer Science or AP Statistics
- (1) AP Calculus AB or AP Calculus BC
- (1) PLTW Principles of Engineering or PLTW Digital Electronics
- (1) AP US/VA Government or US/VA Government or English 12
- (1) Student Elective
- (1) Student Elective
The following courses are designated as Center for Biotechnology and Engineering courses:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology II: Introduction to DNA Science and Biotech</td>
<td>Medical Interventions (PLTW)</td>
</tr>
<tr>
<td>Biology II: Survey (Forensics and Microbiology)</td>
<td>Physics I</td>
</tr>
<tr>
<td>Biomedical Innovation (PLTW)</td>
<td>Pre-AP Biology</td>
</tr>
<tr>
<td>Civil Engineering and Architecture (PLTW)</td>
<td>Pre-AP Chemistry</td>
</tr>
<tr>
<td>Digital Electronics (PLTW)</td>
<td>Pre-AP English 9</td>
</tr>
<tr>
<td>Earth Science</td>
<td>Pre-AP English 10</td>
</tr>
<tr>
<td>Earth Science II: Oceanography</td>
<td>Pre-AP World History and Geography to 1500</td>
</tr>
<tr>
<td>Earth Science II: Physical Geology</td>
<td>Principles of Biomedical Sciences (PLTW)</td>
</tr>
<tr>
<td>Engineering Design and Development (PLTW)</td>
<td>Principles of Engineering (PLTW)</td>
</tr>
<tr>
<td>Human Body Systems (PLTW)</td>
<td>Scientific Illustration</td>
</tr>
<tr>
<td>Introduction to Engineering Design (PLTW)</td>
<td></td>
</tr>
<tr>
<td>AP Biology</td>
<td></td>
</tr>
<tr>
<td>AP Calculus AB or BC</td>
<td></td>
</tr>
<tr>
<td>AP Chemistry</td>
<td></td>
</tr>
<tr>
<td>AP Computer Science</td>
<td></td>
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<tr>
<td>AP Environmental Science</td>
<td></td>
</tr>
<tr>
<td>AP Human Geography</td>
<td></td>
</tr>
<tr>
<td>AP Physics 1 &amp; 2</td>
<td></td>
</tr>
<tr>
<td>AP Physics C: Mechanics</td>
<td></td>
</tr>
<tr>
<td>AP Psychology</td>
<td></td>
</tr>
<tr>
<td>AP Research</td>
<td></td>
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<tr>
<td>AP Statistics</td>
<td></td>
</tr>
<tr>
<td>AP Seminar</td>
<td></td>
</tr>
</tbody>
</table>
Osbourn Park Center for Biotechnology and Engineering

Engineering Pathway Overview
Students will choose in 11th grade to pursue one of two pathways through the specialty program (Biotechnology or Engineering) at OPHS after a freshman and Sophomore year of common coursework, with one elective course offering choice at each grade level. Students that choose the Engineering pathway will complete a two-year engineering course sequence as well as take courses in higher level math and science.

Engineering Pathway Requirements
Students pursuing an engineering certificate will be required to work towards the completion of an advanced studies diploma. All students who pursue the Engineering pathway will study six courses that support the accelerated study of math and science while introducing principles of engineering. Students will maintain at least a C average in all of their core courses as well as their engineering course electives.

3 Core/required courses in Junior or Senior Year
• At least one AP Calculus Course (AB or BC)
• At least one AP Physics Course
• At least one additional advanced science course – AP Biology, AP Chemistry, or AP Environmental Science.

Students will study at least three elective courses to support areas of interest regarding engineering, including at least one course at the AP level:

• PLTW Principles of Engineering
• PLTW Digital Electronics
• PLTW Engineering Design and Development
• PLTW Introduction to Engineering Design
• PLTW Civil Engineering and Architecture
• Technical Drawing
• Engineering Exploration – Robotics 1 or 2
• AP Computer Science
• AP Statistics
• AP Seminar
• AP Research

Students will also:
• Complete 50 engineering hours (11th and 12th grade – 100 hours across all grade levels) of extracurricular learning, internship, and research relating to engineering and associated fields.

Sample Student Schedule for Junior and Senior Years

<table>
<thead>
<tr>
<th>Junior Year</th>
<th>Senior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 11 or AP Language</td>
<td>English 12 or AP Literature</td>
</tr>
<tr>
<td>(AP) US &amp; VA History</td>
<td>(AP) US &amp; VA Government</td>
</tr>
<tr>
<td>Precalculus with Trigonometry for AB</td>
<td>AP Calculus</td>
</tr>
<tr>
<td>AP Physics I</td>
<td>AP Chemistry</td>
</tr>
<tr>
<td>PLTW Principles of Engineering</td>
<td>PLTW Digital Electronics</td>
</tr>
<tr>
<td>World Language</td>
<td>AP Seminar</td>
</tr>
<tr>
<td>Elective</td>
<td>AP Seminar</td>
</tr>
</tbody>
</table>

Elective
The Center for Environmental & Natural Sciences at Freedom High School

Specialized components of the Center for Environmental & Natural Sciences Program include:

• Advanced science courses in Earth science, biology, chemistry, physics, ecology, environmental science;

• During grades 9 and 10, students will take Pre-AP/AP social studies and English classes which provide interdisciplinary lessons and projects that examine history, literature, art, architecture, music and philosophy and the influences of science and technology on each;

• Advanced Placement (AP) courses in biology, chemistry, environmental science, physics, English, social studies, and world languages that provide the opportunity to earn college credits while still in high school;

• On-site greenhouse, aquarium, wet pond, native habitat trail, mobile computer lab, and environmental and natural sciences lab; and

• Science-related extracurricular and co-curricular community activities, as well as partnerships with businesses and academia.

Program Requirements

To earn the CENS Honors Medal, the following requirements must be met:

• The science strand with at least six CENS science credits and a minimum grade of B in each class. The classes will include CENS Pre-AP Biology, CENS Pre-AP Chemistry, AP Environmental Science, two additional AP Science courses, and one CENS Science elective;

• Recommended Pre-AP English & Pre-AP/AP Social Studies program – 9th and 10th grades;

• 100 hours of extracurricular and co-curricular activities, including community service, that support the goals and objectives of the CENS program; and

• Maintain a 3.3 GPA.

To earn the CENS Merit Medal, the following requirements must be met:

• The science strand with at least five CENS science credits and a minimum grade of C+ in each class. The classes will include CENS Pre-AP Biology, CENS Pre-AP Chemistry, AP Environmental Science, one additional AP Science course, and one CENS science elective;

• Recommended Pre-AP English and Pre-AP/AP Social Studies Program – 9th or 10th grade;

• 60 hours of extracurricular and co-curricular activities, including community service, that support the goals and objectives of the CENS program; and

• Maintain a 3.2 GPA.

To earn the CENS Certificate, the following requirements must be met:

• The science strand with at least four CENS science credits and a minimum grade of C in each class. The classes will include CENS Pre-AP Biology, CENS Pre-AP Chemistry, AP Environmental Science, and one CENS science elective;

• 30 hours of extracurricular and co-curricular activities, including community service, that support the goals and objectives of the CENS program; and

• Maintain a 2.3 GPA.

CENS students must maintain a C average and be enrolled in at least one CENS science class each year. CENS Science Electives include all AP science classes, Biology II: Ecology, Bio II: Survey, Intro to Microbiology/Forensics, Oceanography, Physics I, Scientific Illustration, and AP Human Geography.
The following are sample sequences for a four-year course of study in the Center for Environmental & Natural Sciences Program. Units of credit for each course are indicated and courses presented in bold type are Advanced Placement. Advanced Placement courses provide the opportunity to earn college credits while still in high school.

### 9th Grade

- (1) Pre-AP Biology
- (1) Pre-AP English 9
- (1) Pre-AP World History and Geography to 1500
- (1) Mathematics (Pre-AP Geometry or Alg. I)
- (1) World Language
- (1) Health and PE 9
- (1) Student Elective

### 10th Grade

- (1) Pre-AP Chemistry
- (1) Pre-AP English 10
- (1) AP World History or World History II
- (1) Mathematics (Pre-AP Geometry or Advanced Alg. II/Trig)
- (1) World Language
- (1) Health and PE 10
- (1) Student Elective

### 11th Grade

- (1) Physics I
- (1) AP English Language and Composition or English 11
- (1) AP US History
- (1) Mathematics (Alg II or Precalculus with Trigonometry)
- (1) World Language
- (1) Student Elective
- (1) Student Elective

### 12th Grade

- (1) AP Environmental Science
- (1) AP English Literature and Composition or DE English
- (1) AP Government and US Virginia Government
- (1) Mathematics (AP Calculus)
- (1) Student Elective
- (1) Student Elective
- (1) Student Elective
The following courses are part of the Center for Environmental & Natural Sciences curriculum:

<table>
<thead>
<tr>
<th>Center for Environmental &amp; Natural Sciences curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific Illustration</td>
</tr>
<tr>
<td>Pre-AP English 9</td>
</tr>
<tr>
<td>Pre-AP English 10</td>
</tr>
<tr>
<td>Biology II: Survey</td>
</tr>
<tr>
<td>Pre-AP Biology</td>
</tr>
<tr>
<td>Pre-AP Chemistry</td>
</tr>
<tr>
<td>Biology II: Ecology</td>
</tr>
<tr>
<td>AP Environmental Science</td>
</tr>
<tr>
<td>Pre-AP Geometry</td>
</tr>
<tr>
<td>Precalculus with Trigonometry for AB or Precalculus for BC</td>
</tr>
</tbody>
</table>
The Center for Fine & Performing Arts at Charles J. Colgan, Sr. High School

The purpose of the Center for the Fine and Performing Arts (CFPA) program is to encourage and develop creativity, self-expression, academic achievement, and critical thinking in the young artist. Upon graduation, the student will have mastered learning that supports the broader education of the artist and promotes a respect for cultural diversity. As a result of the training received in the CFPA program, the student will have the skills necessary to be successful in a college/university arts program and to become an active consumer, strong advocate, and valued participant in the larger arts community.

Students may audition to participate in one of nine concentrations including: Creative Writing, Dance, Band, Orchestra, Piano, Vocal Music, Music Technology, Theater, and Visual Art. The arts curriculum is enhanced through the use of visiting artists, professional master classes, and concert and gallery visits. In 9th and 10th grade, CFPA students will be grouped together in English class to support an interdisciplinary approach. The Colgan High School faculty seeks to maintain a nurturing environment that supports experimentation and self-assessment. To this end, we encourage both individual and group activities that sustain the contribution of the arts to the human spirit.

The Goals of the CFPA Program

- Provide opportunities for arts-integrated learning.
- Encourage critical thinking through complex problem solving.
- Promote a supportive atmosphere conducive to artistic expression.
- Provide cultural enrichment activities.
- Prepare students for entry into college or university arts programs and careers.
- Offer quality curriculum and instruction which promotes the development of the complete student.
- Encourage partnerships with local artists and arts organizations.

Program Requirements

- Participate in an entrance audition.
- There are two levels of completion in the CFPA Program. Students complete a minimum of 5 classes in their concentrations to receive the Certificate of Completion at graduation. The Band concentration requires students to complete 6 classes. Any student in CFPA that completes 6 or more classes in their concentration will have completed the program "With Distinction" and will receive additional honors at graduation. Students entering as sophomores are required to complete one less credit hour.
- Participate in a minimum of four Master Classes provided at the school per year. At least two of these should be in their chosen concentration area, but two can be in another arts concentration.
- Meet varied participation/production requirements which can include attendance at performances or out-of-school participation in art and performance related events. These requirements can be found in the CFPA Parent/Student handbook on the Colgan website and will vary based on the concentration.
- Prepare and present a portfolio of works or performance jury at the end of grades 9, 10, and 11. Requirements vary based on concentration. More information is available in the handbook.
- Successfully complete a Senior Exit Project in their chosen concentration. More information is available in the handbook.
- Achieve and maintain a B (3.0) average in the concentration area and C (2.0) average overall.

"The arts are an essential element of education, just like reading, writing, and arithmetic...music, dance, painting, and theatre are all keys that unlock profound human understanding and accomplishment."

- William Bennett
### CFPA SEQUENCE OF STUDIES

#### Required electives

<table>
<thead>
<tr>
<th>Grade 9</th>
<th>Grade 10</th>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Creative Writing</strong></td>
<td>Creative Writing Exploration</td>
<td><strong>Genre Focus:</strong> - Scriptwriting and Creative Nonfiction - Poetry and Fiction - Writing for Publications</td>
<td><strong>Genre Focus:</strong> - Scriptwriting and Creative Nonfiction - Poetry and Fiction - Writing for Publications</td>
</tr>
<tr>
<td><strong>Dance</strong></td>
<td>CFPA Dance I Company</td>
<td>CFPA Dance II Corps</td>
<td>CFPA Dance III Ensemble CFPA Dance Composition and Repertory</td>
</tr>
<tr>
<td><strong>Instrumental Music</strong></td>
<td><strong>Ensemble</strong></td>
<td><strong>Ensemble</strong></td>
<td>**Ensemble; <em>Piano; Music Technology Music Theory</em> or Vocal Class <em><em>Ensemble; Piano</em> Music Technology Advanced Music Technology Music Theory</em> or Vocal Class</td>
</tr>
<tr>
<td><strong>Vocal Music</strong></td>
<td><strong>Ensemble</strong></td>
<td><strong>Ensemble</strong></td>
<td>*<em>Ensemble Piano</em> or Music Technology (<em>Piano is an exit requirement) Music Theory</em> or Vocal Class <em><em>Ensemble; Piano</em> Music Technology Advanced Music Technology Music Theory</em> or Vocal Class</td>
</tr>
<tr>
<td><strong>Theater</strong></td>
<td>Theater I: Intro To Theater</td>
<td>CFPA Advanced Performance Theatre or Theatre Productions</td>
<td>CFPA Theatre III (Students can also take Musical Theatre or Theatre Productions in their junior year if their schedule permits) Diracting for the Stage and Screen and either Musical Theatre or Theatre Productions</td>
</tr>
<tr>
<td><strong>Visual Arts</strong></td>
<td>CFPA Art I</td>
<td>CFPA Art II</td>
<td>Art Portfolio Prep 2 Focus Studies Required: Media Studios (Computer Art, Photography, 3D Media Focus, 2D Media Focus) AP Studio Art (2D Design, 3D Design, or Drawing)</td>
</tr>
<tr>
<td><strong>Music Technology</strong></td>
<td><strong>Ensemble</strong></td>
<td>Music Technology</td>
<td>Advanced Music Technology Two music electives approved by the instructor</td>
</tr>
<tr>
<td><strong>Piano</strong></td>
<td>Piano</td>
<td>Piano</td>
<td>AP Music Theory Two music electives approved by the instructor</td>
</tr>
</tbody>
</table>

*Piano or Music Theory is an exit requirement  
**By audition

All students will be required to participate in four Master Classes per year. Master classes are offered at the school and students need to participate in at least two classes in their concentration and may take the other two Master Classes in another concentration if desired.
The Center for International Studies and Languages (CISL) affords students the opportunity to follow a comprehensive interdisciplinary program of study in pursuit of global awareness. The program advances students’ understanding of global issues and is structured around these areas of concentration:

• Cultures and Languages*
• Information and Communication
• Social and Political Sciences**

The program also enhances classroom experiences with supporting field experiences such as student exchanges, Model United Nations, and foreign travel. Those students who successfully complete the full CISL program will receive a CISL certificate to accompany the advanced studies diploma and will be recognized at graduation with the wearing of the CISL stole.

All students in the full CISL program participate in the Advanced Placement (AP) program which gives them the opportunity to earn credit or advanced standing at the college level.

**FULL CISL Course Requirements**

This academic program requires students to take a sequence of college-preparatory and college level courses. The program maintains the flexibility for students to participate in areas of individual interest.

Students will demonstrate proficiency in a world language through an exit interview during the second semester of their final year of world language study. They will complete a 12-page research paper on a foreign affairs issue in conjunction with the CISL capstone course (AP Government and Politics: Comparative). Successful completion of the CISL exit interview and CISL research paper is required for the full CISL certificate.

Students are expected to maintain an overall 3.0 GPA with no grade below a “C+” in any CISL designated course. All CISL students are required to complete the Advanced Studies Diploma program.
CISL Full Academic Program

World Language Major*

REQUIREMENTS:
- Advanced English 9 & 10
- Advanced World History
- 4+ years of the same world language or a combination of 4+ years of Arabic, Korean or Russian are studied
- AP World Language Course (when available)
- AP Comparative Government or AP Capstone
- Additional AP courses in either World Language, Language Arts, or Social Studies

Social & Political Sciences Major**

REQUIREMENTS:
- Advanced English 9 & 10
- Advanced World History
- 4+ years of the same world language or a combination of 4+ years of Arabic, Korean or Russian are studied
- AP World History
- AP Human Geography
- AP Comparative Government

Co-curricular & Extra-curricular Activities

The CISL Program has developed a unique relationship between the academic program and its supporting co-curricular activities. Students are required to complete 100 points of extracurricular activities that increase their global awareness and promote global understanding. Though not required, international travel and participation in exchange programs are strongly encouraged.

Examples of Co-curricular Activities:
- CISL Conference, Speaker & Seminar Programs
- World Language Tutoring & Outreach Programs
- Exchange Program Participation / International Travel
- Model United Nations Conference Participation
- Intensive World Language & Cultural Programs

TYPICAL CISL PROGRAM OF STUDY FOR FULL CISL CERTIFICATE CANDIDATE:

<table>
<thead>
<tr>
<th>Grade 9</th>
<th>Grade 10</th>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-AP English 9</td>
<td>Pre-AP English 10</td>
<td>AP English Language or English 11</td>
<td>AP English Literature or English 12</td>
</tr>
<tr>
<td>Pre-AP World History &amp; Geography to 1500</td>
<td>AP World History</td>
<td>or US &amp; VA History</td>
<td>AP Government &amp; Politics: Comparative</td>
</tr>
<tr>
<td>World Language (primary)</td>
<td>World Language (primary)</td>
<td>World Language (primary)</td>
<td>World Language (primary)</td>
</tr>
<tr>
<td>Math Sequence</td>
<td>Math Sequence</td>
<td>Math Sequence</td>
<td>Math Sequence</td>
</tr>
<tr>
<td>Science Sequence</td>
<td>Science Sequence</td>
<td>Science Sequence</td>
<td>Science Sequence</td>
</tr>
<tr>
<td>Fine or Practical Arts Unit</td>
<td>Fine or Practical Arts Unit</td>
<td>Fine or Practical Arts Unit</td>
<td>Fine or Practical Arts Unit</td>
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<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

* Students may choose to pursue a concentration in world languages only.
** Students may choose to pursue a concentration in social and political sciences only.
For these options, please contact the CISL Coordinator at C.D. Hylton Senior High School for more details.
CISL & Advanced Studies Diploma Courses

CISL students take the listed CISL core courses and all other remaining courses to qualify for the Advanced Studies Diploma, including math, science, and HPE course sequences.

### CISL PROGRAM COURSES & ELECTIVES:

<table>
<thead>
<tr>
<th>International Business &amp; Marketing</th>
<th>Advanced Earth Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering and Architecture (PLTW)</td>
<td>Earth Science II: Oceanography</td>
</tr>
<tr>
<td>Pre-AP English 9</td>
<td>Pre-AP Biology</td>
</tr>
<tr>
<td>Pre-AP English 10</td>
<td>Earth Science II: Astronomy</td>
</tr>
<tr>
<td>Creative Writing I &amp; II</td>
<td>Geology</td>
</tr>
<tr>
<td>Journalism I – IV</td>
<td>Sociology</td>
</tr>
<tr>
<td>Level I: Arabic, French, German, Italian, Korean, Russian, Spanish</td>
<td>Pre-AP World History &amp; Geography to 1500</td>
</tr>
<tr>
<td>Level II: Arabic, French, German, Italian, Korean, Russian, Spanish</td>
<td>Twentieth Century History</td>
</tr>
<tr>
<td>Level III: Arabic, French, German, Italian, Korean, Russian, Spanish</td>
<td>Video &amp; Media Technology</td>
</tr>
<tr>
<td>Level IV: Arabic, French, German, Italian*, Korean, Russian, Spanish</td>
<td>GEMS w/ Research</td>
</tr>
<tr>
<td>Level V: French, Spanish</td>
<td>Art I – III</td>
</tr>
<tr>
<td>Spanish for Fluent Speakers I – III</td>
<td>Art Portfolio</td>
</tr>
<tr>
<td>Choir/Band/Orchestra/Music Theory</td>
<td>Advanced Design, Multimedia, and Web Technologies</td>
</tr>
<tr>
<td></td>
<td>Photography</td>
</tr>
<tr>
<td></td>
<td>AFJROTC</td>
</tr>
<tr>
<td></td>
<td>Computer Art I</td>
</tr>
</tbody>
</table>

### Advanced Courses

- AP Studio Art (2D, 3D, and Drawing)
- AP English Language & Composition*
- AP English Literature & Composition
- AP French Language and Culture
- AP German Language and Culture
- AP Seminar
- AP Research
- AP Spanish Language and Culture
- AP Spanish Literature
- AP Italian Language and Culture
- AP Russian
- AP Statistics
- AP Calculus AB
- AP Calculus BC
- AP Biology
- AP Chemistry*
- AP Environmental Science
- AP Physics 1
- AP Physics C: Mechanics
- AP United States History
- AP European History
- AP Government & Politics: United States
- AP Human Geography
- AP Macroeconomics
- AP Psychology

* Not offered every year.

Any core course may also be taken as an elective, e.g. an additional world language.
The ability to process and manipulate information has already become the single most important determiner of success of individuals in our technological global economy and will be a focus of the IT Program. One of the goals of the IT Program is to graduate students who are comfortable with and proficient in using information technology in all its forms so they can interact with individuals, organizations, and agencies in our technological society.

Areas of study could include:
• A series of courses for the advanced studies diploma student that emphasize acquiring technology skills that will prepare them to be successful in the technological global economy.
• Extracurricular programs, which would include community service through internships, mentorship, and through after school programs such as Students Working to Advance Technology (SWAT).
• Some courses are offered for Dual Enrollment through a partnership with Northern Virginia Community College.
• A series of professional certificate programs designed for the standard or advanced diploma student. These areas of study will immerse the student in a one- or two-year program of study, which after successful completion of the exam, could lead to professional/seat-hour certifications. Current areas of study may include:
  • Cisco Certified Network Associate (CCNA)
  • Cisco Certified Entry-Level Network Technician (CCENT)
  • Oracle Certified Professional
  • Adobe Certified Associate (ACA)
  • CompTia A+
IT Course Offerings

IT Classes and Suggested Sequences
Student must be enrolled in IT program to take any IT class.

The following courses are designated as Information Technology Program courses:

<table>
<thead>
<tr>
<th>Information Technology Program courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Computer Mathematics</td>
</tr>
<tr>
<td>Advanced DV Computer Studies</td>
</tr>
<tr>
<td>AP Calculus AB</td>
</tr>
<tr>
<td>AP Calculus BC</td>
</tr>
<tr>
<td>AP Computer Science A</td>
</tr>
<tr>
<td>AP Studio Art 2-D Design</td>
</tr>
<tr>
<td>AP Studio Art Drawing</td>
</tr>
<tr>
<td>Computer Networking Hardware Operations I, II, III, IV</td>
</tr>
<tr>
<td>Data Structures and Algorithms</td>
</tr>
<tr>
<td>Cybersecurity Network Systems</td>
</tr>
<tr>
<td>Cybersecurity Network Systems (DE)</td>
</tr>
<tr>
<td>IT Advanced Database Design &amp; Management</td>
</tr>
<tr>
<td>IT Advanced Database Design &amp; Management (DE)</td>
</tr>
<tr>
<td>IT Advanced Web Technologies</td>
</tr>
<tr>
<td>IT Advanced Web Technologies (DE)</td>
</tr>
<tr>
<td>IT Computer Graphics I &amp; II</td>
</tr>
<tr>
<td>IT Database Design &amp; Management</td>
</tr>
<tr>
<td>IT Database Design and Management (DE)</td>
</tr>
<tr>
<td>Information Technology Fundamentals</td>
</tr>
<tr>
<td>Information Technology Fundamentals (DE)</td>
</tr>
<tr>
<td>IT Graphic Design</td>
</tr>
<tr>
<td>IT Multimedia Software Design and Development I &amp; II</td>
</tr>
<tr>
<td>IT Photography</td>
</tr>
<tr>
<td>IT Web Technologies</td>
</tr>
<tr>
<td>IT Web Technologies (DE)</td>
</tr>
<tr>
<td>Art Portfolio and IT Fundamentals (DE)</td>
</tr>
</tbody>
</table>

DE = Dual Enrollment
### Interactive Media

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th grade</td>
<td>IT Graphic Design (Art)</td>
</tr>
<tr>
<td>10th grade</td>
<td>IT Computer Graphics I</td>
</tr>
<tr>
<td>11th grade</td>
<td>IT Computer Graphics II</td>
</tr>
<tr>
<td></td>
<td>IT Multimedia Software Design and Development I</td>
</tr>
<tr>
<td>12th grade</td>
<td>Photography I</td>
</tr>
<tr>
<td></td>
<td>Photography II</td>
</tr>
<tr>
<td></td>
<td>IT Computer Graphics II</td>
</tr>
<tr>
<td></td>
<td>AP Studio Art Drawing</td>
</tr>
<tr>
<td></td>
<td>AP Studio Art 2-D Design</td>
</tr>
<tr>
<td></td>
<td>IT Multimedia Software Design and Development II</td>
</tr>
</tbody>
</table>

### Network Systems

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th grade</td>
<td>Information Technology Fundamentals</td>
</tr>
<tr>
<td>10th or 11th grade</td>
<td>Cybersecurity Systems Technology</td>
</tr>
<tr>
<td></td>
<td>Computer Networking Hardware Operations I &amp; II</td>
</tr>
<tr>
<td>11th or 12th grade</td>
<td>Computer Networking Hardware Operations III &amp; IV</td>
</tr>
<tr>
<td></td>
<td>Cybersecurity Network Systems</td>
</tr>
</tbody>
</table>

### Computer Science: Programming & Database Management

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th or 10th grade</td>
<td>Advanced Computer Mathematics</td>
</tr>
<tr>
<td></td>
<td>Information Technology Fundamentals</td>
</tr>
<tr>
<td>10th or 11th Grade</td>
<td>AP Computer Science A</td>
</tr>
<tr>
<td></td>
<td>IT Web Technologies</td>
</tr>
<tr>
<td>11th or 12th Grade</td>
<td>Data Structures and Algorithms</td>
</tr>
<tr>
<td></td>
<td>Cybersecurity Network Systems</td>
</tr>
<tr>
<td></td>
<td>IT Database Design and Management (Oracle)</td>
</tr>
<tr>
<td></td>
<td>IT Advanced Web Technologies</td>
</tr>
<tr>
<td></td>
<td>AP Calculus AB</td>
</tr>
<tr>
<td>12th Grade</td>
<td>Advanced Computer Studies</td>
</tr>
<tr>
<td></td>
<td>AP Calculus BC</td>
</tr>
<tr>
<td></td>
<td>IT Advanced Database Design and Management (Oracle)</td>
</tr>
</tbody>
</table>
The Cambridge Programme

Brentsville District High School &
Potomac Senior High School

The International General Certificate of Secondary Education (IGCSE) is a two-year curriculum that provides a strong preparation for higher level courses. These courses are generally appropriate for 9th and 10th grade students. For most of the IGCSE courses, students are required to sit for external examinations administered by the University of Cambridge International Examinations. Upon successful completion, students will receive individual subject certificates.

The Advanced International Certificate of Education (AICE) Diploma is a two-year curriculum designed to build on IGCSE qualifications that may lead to college credit(s). These courses are appropriate for 11th and 12th grade students. The AICE course of study aims to provide a broad and international pre-university curriculum, equip students to cope successfully with the demands of higher education, provide professional assessment of student performance on internationally recognized standards of achievement, increase appreciation of world cultures, and create positive learning experiences for students. AICE subjects can be taken in two ways: as individual subject examinations or as qualifications towards the AICE Diploma. Effective the first award from June 2017, Cambridge learners must take a minimum of seven AICE courses to include AS Level Global Perspectives and Research. Learners may select courses from subject Groups 1, 2, 3, and 4 to be awarded the AICE Diploma. Learners must achieve at least one credit from each of the Groups 1, 2, and 3. A maximum of two credits may be gained from Group 4. Students who meet the requirements of this group award will receive an AICE Diploma at one of three levels: Pass, Merit or Distinction. All AICE courses require students to sit for external examinations administered by the University of Cambridge International Examinations.
The following schematic reflects a possible four-year course of study for students in the Cambridge Programme:

**9th Grade**
- IGCSE Geometry
- IGCSE Biology
- IGCSE English 9
- Pre-AICE World History
- Foreign Language Level II
- Health and P.E. I
  - *Suggested elective courses:*
  - Art I
  - Music
  - Technical Drawing
  - Word Processing
  - Introduction to Engineering (PLTW)

**10th Grade**
- IGCSE Algebra II/Trigonometry
- IGCSE Chemistry and/or IGCSE Physics
- IGCSE English 10
- AICE World History
- IGCSE Foreign Language Level III
- Health and P.E. II
  - *Suggested elective courses:*
  - IGCSE Art & Design
  - IGCSE Music Studies
  - Computer Information Systems
  - Digital Electronics (PLTW)
  - IGCSE Global Perspectives

**11th Grade**
- AICE Mathematics I
- AICE Biology, Chemistry or Physics¹
- AICE English II Language and Composition
- AICE U.S. History
- AICE Foreign Language Level IV
- AICE Art & Design
- AICE Music
- AICE Environmental Management
- AICE International History, 1945-1991
- AICE Global Perspectives
- AICE Thinking Skills I
- AICE Physical Education

**12th Grade**
- AICE Mathematics II
- AICE Mechanics (Level A)
- AICE Biology, Chemistry, or Physics 1
- AICE English 12 Literature
- AP U.S. Government or U.S. Government
- AICE Foreign Language Level V
- AICE Art & Design
- AICE Music
- AICE Classical Studies I
- AICE Environmental Management
- AICE International History, 1945-1991
- AICE Global Perspectives
- AICE Thinking Skills II

¹Students may be required to enroll in the Advanced Science Laboratory as well.

To qualify for the AICE diploma, students must earn at least seven credits with at least one credit from Group 1, 2, and 3. A maximum of two credits may be gained from Group 4. Students who meet the requirements of this group award will receive an AICE Diploma at one of three levels: Pass, Merit or Distinction.

**Group 1: Mathematics and Sciences**
- AICE Biology
- AICE Chemistry
- AICE Mathematics I
- AICE Mathematics II
- AICE Mechanics (Level A)
- AICE Physics
- AICE Marine Science
- AICE Environmental Management

**Group 2: Languages**
- AICE English Language
- AICE English Literature
- AICE Spanish Language
- AICE French Language IV
- AICE French Language V
- AICE Spanish IV
- AICE Spanish V

**Group 3: Arts and Humanities**
- AICE Art & Design
- AICE World History
- AICE US History
- AICE Psychology
- AICE Music
- AICE International History
- AICE Physical Education

**Group 4: Interdisciplinary and Skill-Base**
- AICE General Paper
- AICE Thinking Skills
- AICE Global Perspective
Together, the IGCSE and AICE courses constitute a fully integrated, accelerated curriculum for students in high school. The following courses are designated as International General Certificate of Secondary Education or IGCSE courses:

<table>
<thead>
<tr>
<th>IGCSE English 9</th>
<th>IGCSE Music Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGCSE English 10</td>
<td>IGCSE Biology</td>
</tr>
<tr>
<td>IGCSE French III</td>
<td>IGCSE Chemistry</td>
</tr>
<tr>
<td>IGCSE Italian III</td>
<td>IGCSE Physics</td>
</tr>
<tr>
<td>IGCSE Spanish III</td>
<td>IGCSE World Geography</td>
</tr>
<tr>
<td>IGCSE Geometry</td>
<td>Pre-AICE World History</td>
</tr>
<tr>
<td>IGCSE Algebra II/Trigonometry</td>
<td>IGCSE Global Perspectives</td>
</tr>
<tr>
<td>IGCSE Art &amp; Design</td>
<td></td>
</tr>
</tbody>
</table>

The following courses are designated as Advanced International Certificate of Education or AICE courses:

<table>
<thead>
<tr>
<th>AICE Biology</th>
<th>AICE Mathematics I</th>
</tr>
</thead>
<tbody>
<tr>
<td>AICE Chemistry</td>
<td>AICE Mathematics II</td>
</tr>
<tr>
<td>AICE Computing</td>
<td>AICE Mechanics (Level A)</td>
</tr>
<tr>
<td>AICE French IV</td>
<td>AICE English Literature</td>
</tr>
<tr>
<td>AICE French V</td>
<td>AICE U.S. History</td>
</tr>
<tr>
<td>AICE Physics</td>
<td>AICE English Language &amp; Composition</td>
</tr>
<tr>
<td>AICE Spanish IV</td>
<td>AICE Thinking Skills I</td>
</tr>
<tr>
<td>AICE Spanish V</td>
<td>AICE Thinking Skills II</td>
</tr>
<tr>
<td>AICE International History, 1945-91</td>
<td>AICE Music</td>
</tr>
<tr>
<td>AICE Psychology</td>
<td>AICE Art &amp; Design</td>
</tr>
<tr>
<td>AICE Physical Education</td>
<td>AICE World History</td>
</tr>
<tr>
<td>AICE Global Perspectives</td>
<td></td>
</tr>
</tbody>
</table>
International Baccalaureate Programme
Gar-Field Senior High School & Stonewall Jackson Senior High School

The IB offers high-quality programmes of international education that share a powerful vision. Informed by the values described in the learner profile an IB education:

- **Centers on learners** — The IB’s student-centered programmes promote healthy relationships, ethical responsibility and personal challenge.
- **Develops effective approaches to teaching and learning** — IB programmes help students to develop the attitudes and skills they need for both academic and personal success.
- **Works within global contexts** — IB programmes increase understanding of languages and cultures, and explore globally significant ideas and issues.
- **Explores significant content** — IB programmes offer a curriculum that is broad and balanced, conceptual and connected.

IB learners strive to become inquirers, knowledgeable, thinkers, communicators, principled, open-minded, caring, risk-takers, balanced, and reflective. These attributes of internationally minded people represent a broad range of human capacities and responsibilities that go beyond intellectual development and academic success.

The IB Middle Years Programme (MYP) (9th and 10th grade)

The IB MYP is a programme of study that provides a framework of academic challenge, in which 9th and 10th grade students embrace and understand the connections between traditional subjects and the real world, and become critical thinkers. The IB high schools offer students a five year IB MYP that began in middle school or a two year programme in grades 9 and 10. Both of these options require service learning and successful completion of a personal project, which is a long-range project focused on a topic chosen by the student.

Advanced Middle Years Programme (Adv-MYP) courses are offered within the MYP as part of the advanced course sequence to prepare students with a strong foundation of knowledge and skills to complete the academic requirements of the IB Diploma Programme or IB Career-Related Programme. Similar to the IB Diploma Programme, students can elect to take selected Adv-MYP classes in their areas and strength and interest to prepare them for specific IBDP courses in grades 11 and 12.
The Diploma Programme (11th and 12th grade)

The IB Diploma Programme is a rigorous pre-university course of studies which leads to examinations, that meets the needs of highly motivated high school students. While the strength of the programme is in the pursuit of the full IB Diploma, students may take Diploma Programme Courses in their areas of strength and interest.

The Diploma Programme prepares students for effective participation in a rapidly evolving and increasingly global society. The Students develop physically, intellectually, emotionally and ethically; acquire breadth and depth of knowledge and understanding, studying courses from six subject groups that help develop the skills and a positive attitude toward learning that will prepare them for higher education study. This study includes at least two languages and increases understanding of cultures, including their own. The subjects make connections across traditional academic disciplines and explore the nature of knowledge through the programme’s unique Theory of Knowledge course. Diploma candidates undertake in-depth research into an area of interest through the lens of one or more academic disciplines in the extended essay and enhance their personal and interpersonal development through creativity, activity and service (CAS).

The IB assesses student work as direct evidence of achievement against the stated goals of the course.

The Diploma Programme goals provide students with:

• A broad and balanced, yet academically demanding, programme of study;
• The development of critical-thinking and reflective skills;
• The development of research skills;
• The development of independent learning skills;
• The development of intercultural understanding; and
• A globally recognized university entrance qualification.

The IB Career-Related Certificate (11th and 12th grade)

The IB Career-related Programme (IBCP) is an innovative education framework for students in grade 11 and 12 incorporating the vision and educational principles of the IB into a unique programme specifically tailored for students who wish to engage in career-related learning.

The aim of the IBCP is to provide students with both an academic and practical foundation to support both their further studies and specialized training, thereby ensuring their success in the workforce.

The IBCP combines highly regarded and internationally recognized IB Diploma Programme courses with an approved career-related study and a unique IBCP core.

As the IB’s fourth programme, the IBCP provides a comprehensive link between the academic challenge of the Diploma Programme and the international-mindedness of the IB classroom into a tailored, career-focused pathway.

The IBCP framework is built around three interconnected elements:

• At least two Diploma Programme courses;
• An IBCP core that includes personal and professional skills, community and service, language development and a reflective project; and
• An approved career-related study.

Students and parents who desire more information on the IB Programme are encouraged to address questions to the IB Coordinator at either school.
## Sequence of Advanced Middle Years and IB Diploma Programme Courses for Grades 9-12

The following two sequences are suggested for programs of study for students interested in pursuing the IB Diploma or individual IB certificates in grades 11 and 12. Advanced MYP (Adv-MYP) courses are offered within the Middle Years Programme as advanced courses in grades 9 and 10 to prepare students for the challenges of the Diploma Programme courses in grades 11 and 12. Several modifications of the sequences are available. Individual student schedules should be developed with the help of teachers, school counselors, and the IB Coordinators. Students must take one credit of fine arts or practical arts as one of the free electives.

### Adv-MYP English 9
- Pre-DP World Language Level II
- Adv-MYP History II
- Adv-MYP Biology
- Adv-MYP Algebra I
- Health & P.E. I
- Free Elective

### Adv-MYP English 10
- Adv-MYP World Language Level III
- Adv-MYP World History II
- Adv-MYP Biology
- Adv-MYP Geometry
- Adv-MYP Health & P.E. I
- Art Elective (Music, Fine or Performing Arts)

### IB Diploma Programme

These IB Diploma Programme sequences are suggestions. Several modifications of sequences are available. Individual student schedules should be developed with the help of teachers, school counselors, and the IB Coordinator. Full Diploma candidates must complete three Higher Level (HL) courses and three Standard Level (SL) courses during their junior and senior years. These courses must cover the five major subject areas and one elective subject. Diploma candidates must also take IB Theory of Knowledge, and complete the Creativity, Activity, and Service (CAS) requirements.

### Grade 11
- IB English I (HL)
- IB World Language Level IV (SL)*
- IB History I (HL)
- IB Biology I (HL) or IB Chemistry I (SL)
- Adv-MYP Algebra II/Trigonometry or IB Math: Applications and Interpretations
- IB Fine Arts I (HL) or IB Elective**

### Grade 12
- IB English II (HL)
- IB World Language Level V (SL)*
- IB History II (HL)
- IB Biology II (HL) or IB Environmental Systems (SL) or IB Chemistry II (SL)
- IB Math: Applications and Interpretations (SL)
- IB Fine Arts II (HL) or IB Elective **
- IB Theory of Knowledge

### Grade 11
- IB English I (HL)
- IB World Language Level IV (SL)*
- IB History I (HL)
- IB Biology I (HL) or IB Chemistry I (SL)
- Adv-MYP Algebra II/Trigonometry or IB Math: Applications and Interpretations
- IB Fine Arts I (HL) or IB Elective**
- Free Elective +

### Grade 12
- IB English II (HL)
- IB World Language Level V (SL)*
- IB History II (HL)
- IB Biology II (HL) or IB Environmental Systems (SL) or IB Chemistry II (SL)
- IB Math: Applications and Interpretations (SL)
- IB Fine Arts II (HL) or IB Elective **
- IB Theory of Knowledge

### Grade 11
- IB English I (HL)
- IB World Language Level IV (SL)*
- IB History I (HL)
- IB Biology I (HL) or IB Chemistry I (SL)
- Adv-MYP Algebra II/Trigonometry or IB Math: Applications and Interpretations
- IB Fine Arts I (HL) or IB Elective**
- Free Elective +

### Grade 12
- IB English II (HL)
- IB World Language Level V (SL)*
- IB History II (HL)
- IB Biology II (HL) or IB Environmental Systems (SL)
- IB Math: Analysis and Approaches II (HL)
- IB Fine Arts II (HL) or IB Elective **
- IB Theory of Knowledge

*World language courses may include French, Spanish.


+Students are required to meet the VDOE Economics and Personal Finance requirement. This requirement can be met by taking IB Business Management, IB Economics, or Economics and Personal Finance.
### Adv-MYP and IB DP Courses

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<tr>
<th>Adv-MYP and IB DP Courses</th>
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<tbody>
<tr>
<td>Adv-MYP English 9</td>
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<td>Adv-MYP English 10</td>
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<tr>
<td>Pre-DP French II</td>
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<td>Pre-DP Spanish II</td>
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<tr>
<td>Adv-MYP French III</td>
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<td>Adv-MYP Spanish III</td>
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<tr>
<td>IB Visual Arts I (HL)</td>
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<tr>
<td>IB Visual Arts II (SL &amp; HL)</td>
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<tr>
<td>IB English I</td>
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<td>IB English II (HL)</td>
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<td>IB English II (SL)</td>
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<td>IB Film (SL)</td>
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<td>IB Theatre Arts (SL)</td>
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<td>IB Theory of Knowledge</td>
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<td>IB French IV (SL)</td>
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<td>IB AB Initio French I</td>
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<td>IB AB Initio French II</td>
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<td>IB AB Initio Spanish I</td>
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<tr>
<td>IB AB Initio Spanish II</td>
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<tr>
<td>IB Global Politics (SL)</td>
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</table>

Policies regarding credit for high school courses are developed by individual colleges and universities, not by the IB Organization, and vary widely among different schools. Colleges and universities throughout the world recognize the IB Diploma Programme. Students who wish to receive credit for their work in the IB Programme should consult with their counselors and the IB Coordinator for advice in planning their IB Programmes and future college plans. The more prestigious college and universities have traditionally given preference and credit to successful IB students. The official policies of over 1500 colleges and universities in North America are cited on the Internet at www.IBO.org. In addition, the breadth and intensity of the IB Programme have prepared students well for pursuits in college, internships, and life-long careers.
Virtual Prince William

“Achieving student success in a flexible online learning environment”

The goals of the Virtual Prince William (VPW) are to:

- Empower students to learn independently and at a flexible pace.
- Offer students an alternative to the traditional classroom.
- Enable students to fulfill course requirements and to achieve academic success.
- Allow students to recover credit, earn additional credit, or take electives.
- Prepare participating students for Virginia Standards of Learning tests.
- Enhance student use of new and emerging technologies.

Student Criteria for Success in Online Courses:

- Personal commitment to learn;
- Self-motivation;
- Independent learner;
- Computer literate;
- Time management skills;
- Effective written communication skills; and
- Computer with proper configuration.
The following online courses will be offered this school year:

<table>
<thead>
<tr>
<th>Online Courses</th>
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<tbody>
<tr>
<td>Computer Information Systems</td>
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<tr>
<td>Economics and Personal Finance</td>
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<tr>
<td>English 9</td>
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<tr>
<td>English 10</td>
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<td>English 11</td>
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<td>English 12</td>
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<td>Italian I</td>
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<td>Spanish I</td>
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<td>Latin I</td>
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<td>Latin II</td>
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<td>Latin III</td>
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<tr>
<td>Algebra I</td>
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<tr>
<td>Precalculus with Trigonometry for AB</td>
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<tr>
<td>Algebra, Functions, and Data Analysis</td>
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<td>Algebra II</td>
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<tr>
<td>Geometry</td>
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<tr>
<td>Pre-AP Geometry</td>
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<tr>
<td>Earth Science II: Astronomy</td>
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<tr>
<td>Chemistry</td>
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<tr>
<td>Biology</td>
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<tr>
<td>Earth Science</td>
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<tr>
<td>World History and Geography to 1500</td>
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<tr>
<td>World History and Geography from 1500</td>
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<tr>
<td>U.S. and Virginia History</td>
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<tr>
<td>U.S. and Virginia Government</td>
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<tr>
<td>Health and Physical Education I</td>
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<tr>
<td>Health and Physical Education II</td>
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</tbody>
</table>

Additional courses are being developed, please contact the VPW Supervisor for updates and availability. Courses are offered in three sessions; fall, spring, and summer. Students earn full course credit in a semester session. Courses run based on enrollment and may be canceled due to low enrollment or closed when enrollment reaches the maximum student/teacher ratio.

Registration for online courses must be completed ONLINE at virtualhs.pwcs.edu. NO PAPER REGISTRATION.

For more information please go to:

virtualhs.pwcs.edu
Career and Technical Education

Prince William County Public Schools offers a wide variety of Career and Technical Education (CTE) programs designed to provide rigorous curriculum that engages students in the acquisition of academic and technical knowledge and skills, leadership opportunities and real-world applications. CTE courses enable students to explore career options and interests while gaining valuable knowledge and workplace readiness skills that prepare them for a wide range of high-demand careers, whether they continue to post-secondary studies or enter the workforce directly. CTE students can see clear value in their learning by making connections between prior knowledge and new information and issues. CTE uses contextual learning to help students find relevance in the meaning and purpose of their learning.

Career and Technical Education Courses Can Fulfill the Following Graduation Requirements:

- Sequential Electives
- Elective Credit
- Student Choice Verified Credit through industry licensure, certification, or testing
- Industry credential for Standard Diploma

Any course listed in the Career and Technical Education section except Economics and Personal Finance will meet the Fine Arts or Career and Technical Education Requirement for Graduation. Sequential Elective options for Career and Technical Education are noted in the course descriptions.

Industry Certification

Each year high school administrators and CTE teachers work to develop an industry certification plan that is consistent with the overall industry certification testing initiative while meeting the needs of their students. The Virginia Department of Education (VDOE) evaluates and approves credentials annually.

Additional information on industry credentials is available at the PWCS CTE web page: pwcs.edu/cte.

Student-Selected Verified Credit

Student-selected verified credit may be awarded for passing a VDOE approved certification or licensure examination if the teacher and/or the career and technical education program is certified by the issuing organization relative to the industry certification or license.

A second verified credit may be earned if the student passes an additional VDOE approved certification or licensure examination and completed a VDOE approved sequence of CTE courses. The student may substitute one of these verified credits for a verified credit in either science or history/social science.
Students will work with airframe and control surfaces, Aviation Maintenance – Stonewall Jackson and Aviation Maintenance Electronics (PLTW), Aviation Maintenance in Introduction to Engineering Design (PLTW), Digital is a four-year program of study including the courses maintenance publications, forms, and records. This aviation maintenance tasks, and research and use safety, apply science and mathematics principles to aviation maintenance tasks, and research and use knowledge, skills, habits and attitudes for both entry level employment and advancement in areas such as greenhouse and nursery production, landscape design and turf management. Students receive instruction in leadership development and are provided many leadership opportunities through FFA, the Career and Technical Education student organization. Horticulture is a four-year program of study including courses in Horticulture Sciences, Landscaping I, Landscaping II, and Turf Grass Establishment and Maintenance.

Automotive Technology – Osbourn Park, Hylton
Automotive Technology is a National Automotive Technicians Education Foundation (NATEF) accredited program of study taught by an Automotive Service Excellence (ASE) certified auto technician that prepares graduates for ASE exams. The Automotive Technology Program mission is to assist the student in acquiring the knowledge, skills and attributes that enable success as an entry-level worker in the field of automotive technology as well as pursuing education in a related occupational field. This is a four-year program of study.

Aviation Maintenance – Stonewall Jackson
Students will work with airframe and control surfaces, power plants, and basic aviation electricity, and perform ground operations and servicing procedures, as specified by Federal Aviation Administration (FAA) requirements. Students will also practice lab and tool safety, apply science and mathematics principles to aviation maintenance tasks, and research and use maintenance publications, forms, and records. This is a four-year program of study including the courses in Introduction to Engineering Design (PLTW), Digital Electronics (PLTW), Aviation Maintenance Technology I, and Aviation Maintenance Technology II.

Biomedical Science (Project Lead the Way) – Osbourn Park
The rigorous and relevant four-course Project Lead the Way (PLTW) Biomedical Science sequence allows students to investigate the roles of biomedical professionals as they study the concepts of human medicine, physiology, genetics, microbiology, and public health. Students experience engaging activities such as a fictional death investigation to learn content in the context of real-world cases. They examine the structures and interactions of human body systems and explore the prevention, diagnosis, and treatment of disease, all while working collaboratively to understand and design solutions to the most pressing health challenges of today and the future.

Building Trades – Patriot
Building Trades introduces students to skills in the four core areas of residential construction: masonry, carpentry, electricity, and plumbing. Students emphasize safety by earning the Occupational Safety and Health Administration (OSHA) 10 card as they build or repair residential structures, using a variety of materials and tools. Students will also learn current residential building codes associated with the trades. This is a four-year transfer program of study that includes Basic Technical Drawing or Introduction to Engineering Design, Construction Technologies, Building Trades I, and Building Trades II.

Cabinetmaking – Hylton
Students learn employability skills alongside workshop and tool safety as they practice reading blueprints; estimating and selecting materials; cutting and shaping stock; assembling, fastening, and installing components; and finishing surfaces. The technical, problem-solving, leadership and creative skills learned in Cabinetmaking are relevant in industries beyond the construction trades and professions and help prepare the student for lifelong learning and success. The four-year program of study consists of Technical Drawing in the 9th grade; Construction Technology in the 10th grade; Cabinetmaking I in the 11th grade; and Cabinetmaking II in the 12th grade.

Cybersecurity – Potomac
Students explore both theory and hands-on practice in the following areas: critical infrastructure security systems and devices; intelligent computing and controlling devices and systems security; business information technology network security systems and techniques; industrial/ utility industrial control systems networks and devices security; medical network and data system security; and ethical hacking roles and tools. Students begin this four-year program of study with an IT elective such as IT Fundamentals in 9th grade; Programming in 10th grade; Cybersecurity Systems Technology in 11th grade; and Cybersecurity Systems Technology, Advanced in 12th grade.
Electricity – Stonewall Jackson

Students develop skills in the installation, operation, maintenance, and repair of residential, commercial, and industrial electrical systems. They also study electrical theory, navigate the National Electrical Code Book, select and install conductors, and work with panelboards, switchboards, and generators. This is a four-year program of study including the courses in Introduction to Engineering Design (PLTW), Digital Electronics (PLTW), Electricity I, and Electricity II.

Heating, Ventilation, and Air Conditioning (HVAC) – Gar-Field

This instructional program teaches students to professionally install, repair, and maintain the operating conditions of heating and cooling systems. Students work with piping and tubing, study the principles of heat and electricity, and install duct systems. Students also explore emerging technologies, EPA regulations and conservation techniques, and R-410A systems. Completion of this sequence may prepare students for a number of certification exams, helpful for employment in a variety of HVACR occupations. The four-year program of study includes: A Technology Education Elective, Technical Drawing, HVAC I, and HVAC II.

Medical Coding and Billing – Freedom

Students will be introduced to healthcare systems, how to manage an office, and the electronic medical record as it pertains to the field of medical coding and billing. Students will be exposed to the medical terminology used to describe human anatomy and physiology. Students will also be introduced to the field of health informatics. This is a four-year program of study including courses in Computer Information Systems, Advanced Computer Information Systems, Medical Coding and Billing I, and Medical Coding and Billing II.

Plumbing – Gar-Field

Students learn to safely assemble, install, and repair pipes, fittings, and fixtures of heating, water, and drainage systems, according to specification and plumbing codes. Students learn marketable, job-specific skills, workplace readiness skills, and have the opportunity to earn an industry certification upon graduation. Students have the option to enter the job market directly or continue their studies via a college program, technical school or apprenticeship program. This is a four-year program of study including the following courses: Introduction to Engineering Design, Civil Engineering and Architecture, Plumbing I, and Plumbing II.

Television Production – Hylton

Television production prepares students to operate TV cameras, recorders and editors as well as the associated audio, video, switching and processing equipment. The four-year program of study includes Video and Media Technology, Television Production I, Television Production II, and Television Production III. Many students go on to complete their education at a university or specialized technical school following high school graduation. Student leadership and independence are stressed as students employ program proposals, scripts and storyboards to produce and refine professional productions.

Welding – Potomac

Welding students learn welding processes to braze, solder and fuse metal parts according to diagrams, blueprints, or written specifications. Select courses require double-block scheduling. Some courses may be available for dual enrollment credit through Northern Virginia Community College. The four-year program of study consists of a Technology Education elective such as Technical Drawing in the 9th grade; Welding I in the 10th grade; Welding II in the 11th grade; and Welding III in the 12th grade.
**CTE Transport Programs**

Transport students attend their base school for all core classes, take a PWCS bus to and from the CTE program school for those classes, and, in most cases, return to the base school in time for the trip home. NOTE: ALL students interested in a Transport Program (even those who attend the school that provides the CTE Transport Program) MUST complete the school-based application. See individual program websites for details.

**Cosmetology – Stonewall, Woodbridge**

Cosmetology students develop the skills and knowledge necessary to pass the Virginia Board of Registered Professional Hairdressers licensing examination for entry-level jobs such as a manicurist, salon receptionist, shampoo technician, and licensed cosmetologist. Cosmetology is a two-year program of study that begins in the 11th grade. Courses are scheduled in a three-period/triple block each year.

**Culinary Arts – Potomac, Patriot, Gar-Field**

Culinary Arts prepares students to practice the managerial, production, and service skills used in food establishments and related food industry occupations such as chef/cook, baker/pastry chef, and hospitality worker. Students plan, select, store, purchase, prepare and serve food and food products; study basic nutrition, sanitation, and food safety; learn the use and care of commercial equipment; and practice the operation of institutional food establishments. In addition to refining these skills, students will practice serving and dining room management throughout the two-year program. Students engage in real-world experiences by working cooperatively with local business owners and various food establishments in the community. Courses are scheduled in a two-period/double block each year beginning in the 11th grade.

**Firefighting – Stonewall Jackson, Osbourn Park**

Firefighting requires discipline and attention to academic and professional standards to successfully fight live fires, address hazardous-materials (HAZMAT) incidents, and conduct search-and-rescue operations. Students will become familiar with the procedures, equipment, and technologies used by fire departments. This course challenges students academically, mentally, and physically and meets the standards of National Fire Protection Association (NFPA) 1001-2013 leading to the opportunity to obtain a Firefighter I certification. This is a one-year program of study for juniors and seniors and is a three credit course. This program was still in development at the time of publication, see your counselor for details.

**Practical Nursing – Osbourn Park**

Practical Nursing prepares students at the pre-professional level for service disciplines related to medicine, nursing, and allied health careers. Course competencies are based on industry qualifications, certifications, and licensure requirements. Courses are available to all students and taught at Osbourn Park High School, local hospitals, assisted living facilities, and nursing homes. The 18-month program begins in the senior year of high school. Tuition is charged during the second year of the program. Students are admitted to the program by application which may include an interview and testing. Applications must be completed during course registration the year prior to program entry.
**Graduation requirements are located in the “General Information” section.**

**HORTICULTURE**

All agricultural courses will count toward meeting the one-credit “Fine Arts or Career and Technical Education” requirement for graduation.

**HORTICULTURE SCIENCES**

**Grades: 9-12**

**Credit: 1**

**Prerequisite: None**

In this course, students develop the necessary knowledge, skills, habits, and attitudes for entry-level employment and advancement in areas such as floriculture, landscape design, greenhouse operation, nursery plant production, and turf management. They receive instruction in using soil and other plant-growing media and in identifying, propagating, and growing horticultural plants in the greenhouse and land development.

**CTE Sequence:** The course above and Horticulture Sciences

Schools offering course: 1

**LANDSCAPING I**

**Grades: 10-12**

**Credit: 1**

**Prerequisite: Horticulture Sciences**

In this course, students develop the necessary knowledge, skills, habits, and attitudes for entry-level employment and advancement in areas such as landscape design, landscape construction, and landscape maintenance. They receive instruction in sketching and drawing, analyzing a landscape site, designing for function and aesthetics, identifying and selecting landscape plants, purchasing and installing plants, and maintaining the landscape by watering, fertilizing, mulching, pruning, and controlling pests.

**CTE Sequence:** The course above and Horticulture Sciences

Schools offering course: 1

**LANDSCAPING II**

**Grades: 11-12**

**Credit: 1**

**Prerequisite: Landscaping I**

This course focuses on preparing students for entry-level employment in commercial landscaping through hands-on experiences. Students will design landscapes and install components, including lighting, hardscapes, and water features within an environment of the landscaping business enterprise.

**CTE Sequence:** The course above and Landscaping I

Schools offering course: 1

**TURF GRASS ESTABLISHMENT AND MAINTENANCE**

**Grades: 10-12**

**Credit: 1**

**Prerequisite: Horticulture Sciences**

Students begin to master the duties and tasks of professionals who establish and maintain turf in public areas such as golf courses, parks, athletic fields, schools, industrial, and institutional campuses; and residential lawns.

**CTE Sequence:** The course above and Horticulture Sciences

Schools offering course: 1

**BUSINESS AND INFORMATION TECHNOLOGY**

All Business and Information Technology courses except Economics and Personal Finance will count toward meeting the one-credit “Fine Arts or Career and Technical Education” requirement for graduation.

**ACCOUNTING**

**Grades: 10-12**

**Credit: 1**

**Prerequisite: None**

Students study the basic principles, concepts, and practices of the accounting cycle for a service business and a merchandising business. Topics covered include analyzing transactions, journalizing and posting entries, preparing payroll records and financial statements, and managing cash systems. Ethics and professional conduct are emphasized. Students learn fundamental accounting procedures using both manual and electronic systems.

**CTE Sequence:** The course above and any one of the following courses – Accounting Advanced; Business Law; Business Management; Computer Information Systems; Computer Information Systems Advanced; Design Multimedia and Web Technologies; Design, Multimedia and Web Technologies Advanced; Entrepreneurship; IB Business and Management; Principles of Business and Marketing, Digital Applications, Word Processing

Schools offering course: All except 9, 99

**ADVANCED ACCOUNTING**

**Grades: 11-12**

**Credit: 1**

**Prerequisite: Accounting**

Students gain knowledge of advanced accounting principles, procedures, and techniques used to solve business problems and to make financial decisions. Students use accounting and spreadsheet software to analyze, synthesize, evaluate, and interpret business financial data. Students work in a technology-integrated environment using authentic workplace industry scenarios that reflect current industry trends and standards.

**CTE Sequence:** The course above and any one of the following courses – Accounting; Business Management; Computer Information Systems; Computer Information Systems Advanced; Design Multimedia and Web Technologies; Design, Multimedia and Web Technologies Advanced; Entrepreneurship; IB Business and Management; Principles of Business and Marketing

Schools offering course: All except 1, 9, 12, 99
**BUSINESS LAW**

*Grades: 10-12*  
*Credit: 1*  
*Prerequisite: None*

Students examine the foundations of the American legal system. Students explore economic and social concepts as they relate to legal principles and to business and personal laws.  

**CTE Sequence:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Management; Computer Information Systems; Computer Information Systems Advanced; Design, Multimedia, and Web Technologies; Design, Multimedia, and Web Technologies, Advanced; IB Business and Management; Principles of Business and Marketing, Digital Applications, Word Processing

Schools offering course: All except 1, 2, 3, 5, 9

---

**BUSINESS MANAGEMENT**

*Grades: 10-12*  
*Credit: 1*  
*Prerequisite: None*

Students study basic management concepts and leadership styles as they explore business ownership, planning, operations, marketing, finance, economics, communications, the global marketplace, and human relations. Quality concepts, project management, problem solving, and ethical decision making are an integral part of the course.  

**CTE Sequence:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Computer Information Systems; Computer Information Systems Advanced; Design, Multimedia, and Web Technologies; Design, Multimedia, and Web Technologies Advanced; Entrepreneurship; Principles of Business and Marketing, Digital Applications, Word Processing

Schools offering course: 2, 3, 8, 9, 12

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**COMPUTER INFORMATION SYSTEMS**

*Grades: 9-12*  
*Credit: 1*  
*Prerequisite: None*

Students apply problem-solving skills to real-life situations through word processing, spreadsheets, databases, multimedia presentations, and integrated software activities. Students work individually and in groups to explore computer concepts, operating systems, networks, telecommunications, and emerging technologies.  

**CTE Sequence:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Business Management; Computer Information Systems; Computer Information Systems Advanced; Design, Multimedia and Web Technologies Advanced; Entrepreneurship; IT Fundamentals; IB Business and Management; Principles of Business and Marketing, Digital Applications, Word Processing

Schools offering course: All except 9, 99

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**ADVANCED COMPUTER INFORMATION SYSTEMS**

*Grades: 10-12*  
*Credit: 1*  
*Prerequisite: Computer Information Systems*

Students apply problem-solving skills to real-life situations through advanced integrated software applications, including multimedia presentations, printed, electronic, and Web publications. Students work individually and in groups to explore advanced computer maintenance activities, Web site development, programming, networking, emerging technology, and employability skills.  

**CTE Sequence:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Business Management; Design Multimedia and Web Technologies; Design, Multimedia and Web Technologies Advanced; Entrepreneurship; IT Fundamentals; IB Business and Management; Programming; Programming Advanced

Schools offering course: All except 99

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**DESIGN, MULTIMEDIA AND WEB TECHNOLOGIES**

*Grades: 9-12*  
*Credit: 1*  
*Prerequisite: None*

Students develop proficiency in creating desktop publications, multimedia presentations/projects, and Web sites using industry standard application software. Students incorporate principles of layout and design in completing publications and projects. Students design portfolios that may include business cards, newsletters, mini-pages, Web pages, multimedia presentation/projects, calendars, and graphics.  

**CTE Sequence:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Business Management; Computer Information Systems; Computer Information Systems Advanced; Design, Multimedia and Web Technologies Advanced; IT Web Technologies; IT Advanced Web Technologies; IT Fundamentals; IB Business and Management; Programming; Programming Advanced; Principles of Business and Marketing, Digital Applications, Word Processing

Schools offering course: All except 9, 99

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**ADVANCED DESIGN, MULTIMEDIA AND WEB TECHNOLOGIES**

*Grades: 10-12*  
*Credit: 1*  
*Prerequisite: Design, Multimedia and Web Technologies*

Students develop advanced skills in creating interactive media, Web sites, and publications for print and electronic distribution. Students work with sophisticated hardware and software, applying skills learned to real-world projects.  

**CTE Sequence:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Business Management; Design, Multimedia and Web Technologies; IT Web Technologies; Computer Information Systems; Computer Information Systems Advanced; IT Fundamentals; IB Business and Management; Programming; Programming Advanced; Principles of Business and Marketing, Digital Applications, Word Processing

Schools offering course: All except 6, 9, 99
**DIGITAL APPLICATIONS**

**Grades: 9-12**

**Credit: 1**

Prerequisites: None

Students develop intermediate to advanced level word processing skills using a variety of software functions, including graphics, desktop publishing, and telecommunications. Students gain competence integrating other applications such as database and spreadsheet into word processing activities. Classroom experiences also provide for skill development in communication.

**CTE Sequence:** The course above and any one of the following courses - Accounting, Business Law, Business Management, Computer Information Systems, Design, Multimedia, and Web Technologies, IB Business Management, Database Design and Management, Information Technology Fundamentals, Office Specialists I, Principles of Business and Marketing, Programming, IB Information Technology in a Global Society, and Word Processing

Schools offering course: 5, 6, 7, 8, 9, 10, 11, 12

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**ECONOMICS AND PERSONAL FINANCE**

**Grades: 10-12**

**Credit: 1**

Prerequisite: None

This course meets the graduation requirement for Economics and Personal Finance. The following PWCS courses may be substituted to meet this requirement: AP Economics, IB Economics, Personal Living and Finances, AP Macroeconomics and Microeconomics through Virtual Virginia (must take both classes), AICE Economics, IB Business Management.

Students learn how to make informed decisions related to career exploration, budgeting, banking, credit, insurance, spending, taxes, saving, investing, buying/leasing a vehicle, living independently, and inheritance. Development of financial literacy skills and an understanding of economic principles help provide the basis for responsible citizenship and career success. In addition to developing personal finance skills, students in the 36-week course study basic occupational skills and concepts in preparation for entry-level employment in the field of finance. The course incorporates all economics and financial literacy objectives included in the Code of Virginia §22.1-200-03B. Students must successfully complete the online curriculum in order to satisfy a graduation requirement.

**CTE Sequence:** None

Schools offering course: All

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**ENTREPRENEURSHIP**

**Grades: 10-12**

**Credit: 1**

Prerequisite: None

This course introduces students to the exciting world of creating, owning, and launching their own business. Students learn concepts and techniques for planning an innovative business and living the entrepreneurial lifestyle.

**CTE Sequence:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Management; Computer Information Systems; Computer Information Systems Advanced; Fashion Marketing; Fashion Marketing Advanced; Hotel Marketing; Hotel Marketing Advanced; Introduction to Fashion Design and Marketing; Marketing; Marketing Advanced; Principles of Business and Marketing; Sports, Entertainment and Recreation Marketing; Advanced Sports, Entertainment and Recreation Marketing

Schools offering course: All except 8, 99

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**PROGRAMMING**

**Grades: 10-12**

**Credit: 1**

Prerequisite: None

Students explore computer concepts, apply logic procedures, and implement programming procedures with one or more languages, such as Visual Basic.Net, Java, C#, and C++.

Graphical User Interfaces, such as Alice, Game Maker, and Flash, may be used as students design and develop interactive multimedia applications. In addition, HTML or JavaScript may be employed to create Web pages.

**CTE Sequence:** The course above and any one of the following courses – AP Computer Science; Computer Information Systems; Computer Information Systems Advanced; Database Design and Management (Oracle); Database Design and Management, Advanced (Oracle); Design, Multimedia, and Web Technologies; Design, Multimedia, and Web Technologies Advanced; Information Technology Fundamentals; Programming Advanced; Digital Applications; and Word Processing

Schools offering course: All except 1, 7, 99

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**PRINCIPLES OF BUSINESS AND MARKETING**

**Grades: 9-10**

**Credit: 1**

Prerequisite: None

Students discover the roles of business and marketing in the free enterprise system and the global economy. Basic financial concepts of banking, insurance, credit, inheritance, taxation, and investments are investigated to provide a strong background as students prepare to make sound decisions as consumers, wage earners, and citizens. The real-world impact of technology, effective communication, and interpersonal skills are evident throughout the course. This course also supports career development skills and explores career options.

**CTE Sequence:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Business Management; Computer Information Systems; Computer Information Systems Advanced; Design, Multimedia, and Web Technologies; Design, Multimedia, and Web Technologies Advanced; Entrepreneurship; Fashion Marketing; Fashion Marketing Advanced; Hotel Marketing; Hotel Marketing Advanced; Introduction to Fashion Design and Marketing; IB Business and Management; Marketing; Marketing Advanced; Sports, Entertainment, and Recreation Marketing; Sports, Entertainment, and Recreation Marketing Advanced; Digital Applications, Word Processing

Schools offering course: All except 1, 99
ADVANCED PROGRAMMING  
Grades: 11-12  
Prerequisite: Programming  
Credit: 1

Building on a foundation of programming skills, students will use object-oriented programming to develop applications for Windows, database, multimedia, games, mobile, and/or Web environments. Students will have the opportunity to explore and create applications related to the information technology and game design industries.

**CTE Sequence:** The course above and any one of the following courses – AP Computer Science; Computer Information Systems; Computer Information Systems Advanced; Database Design and Management (Oracle); Database Design and Management, Advanced (Oracle); Design, Multimedia, and Web Technologies; Design, Multimedia, and Web Technologies Advanced; IT Fundamentals; Programming

Schools offering course: 2, 3, 4, 5, 6, 8, 9, 10, 12

IT PROGRAMMING  
Grades: 10-12  
Prerequisite: Enrolled in IT Program  
Credit: 1

IT programming introduces students to Systems Design, programming for the Web Applications, and programming hardware. Emphasis is placed on the programming process starting from system design to program completion. Current software and programming languages are taught.

**CTE Sequence:** The course above and any one of the following courses – AP Computer Science; Computer Information Systems; Computer Information Systems Advanced; Database Design and Management (Oracle); Database Design and Management, Advanced (Oracle); Design, Multimedia, and Web Technologies; Design, Multimedia, and Web Technologies Advanced; IT Fundamentals; Programming

Schools offering course: None

IT DATABASE DESIGN AND MANAGEMENT (Oracle)  
Grades: 11-12  
Prerequisite: Enrolled in IT Program  
Credit: 1

This first-year course includes database design and SQL programming. Students study database fundamentals to include database development, modeling, design, and normalization. In addition, students are introduced to database programming. Students gain the skills and knowledge needed to use features of database software and programming to manage and control access to data.

**CTE Sequence:** The course above and any one of the following courses – Computer Information Systems; Computer Information Systems Advanced; IT Database Design and Management Advanced; IT Fundamentals; Programming; Programming Advanced, Digital Applications, Word Processing

Schools offering course: 9

IT ADVANCED DATABASE DESIGN AND MANAGEMENT (Oracle)  
Grades: 12  
Prerequisite: Database Design and Management  
Credit: 1

Web-based technologies used throughout industry, including interactive Web sites, accounting programs, research tools, search engines, e-learning environments, email managers, and numerous other applications, depend upon relational databases. PL/SQL, an extension of the SQL programming language, provides additional database functionality through variables, constants, conditional statements, and iterative controls. Students enhance their relational database design and management skills by learning to write PL/SQL code that includes anonymous blocks, sub programs, built-in functions, control structures, procedures, and triggers, all within a browser-based programming environment. In addition, fully functional Web-based applications are created through the use of HTML DB.

**CTE Sequence:** The course above and any one of the following courses – Computer Information Systems; Computer Information Systems Advanced; IT Database Design and Management (Oracle); IT Fundamentals; IT Programming; Programming; Programming Advanced

Schools offering course: 7

INTERNATIONAL BUSINESS AND MARKETING  
Grades: 10-12  
Prerequisite: Enrollment in a world language course either concurrently or prior to enrolling in this course  
Credit: 1

International Business and Marketing is a specialized course for students with a career interest in the field of international studies. Students gain an understanding of the various careers in international trade, finance, shipping, and marketing and consider fundamental concepts, principles, and theories of business in an international culture, concepts, practices, and applications.

**CTE Sequence:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Management; Computer Information Systems; Computer Information Systems Advanced; Fashion Marketing; Fashion Marketing Advanced; Hotel Marketing; Hotel Marketing Advanced; Introduction to Fashion Design and Marketing; Marketing; Marketing Advanced; Principles of Business and Marketing; Sports, Entertainment and Recreation Marketing; Advanced Sports, Entertainment and Recreation Marketing

Schools offering course: 9

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**School Number Code:**

1 – Brentsville  4 – Potomac  7 – Hylton  10 – Freedom  99 – Virtual
2 – Gar-Field  5 – Stonewall  8 – Forest Park  11 – Patriot
3 – Osbourn Park  6 – Woodbridge  9 – Battlefield  12 – Colgan
**INFORMATION TECHNOLOGY (IT) FUNDAMENTALS**

**Grades: 9-10**

**Prerequisite: Enrolled in IT Program**

Information Technology Fundamentals introduces the essential skills needed for students to pursue specialized programs leading to technical and professional careers and certifications in the IT Industry. Students have an opportunity to investigate career opportunities in four major IT areas: Information Services and Support, Network Systems, Programming and Software Development, and Interactive Media. Students explore ethical issues related to computers and Internet technology and develop teamwork and communication skills that will enhance employability.

**CTE Sequence:** The course above and any one of the following courses – Computer Information Systems; Computer Information Systems Advanced; IT Database Design and Management (Oracle); IT Database Design and Management Advanced (Oracle); Design, Multimedia, and Web Technologies; Design, Multimedia and Web Technologies Advanced; Programming; Programming Advanced, Digital Applications, Word Processing

Schools offering course: 8, 9

**IT WEB TECHNOLOGIES**

**Grades: 10-12**

**Prerequisite: Enrolled in IT Program**

Students will develop an in-depth understanding of the Internet and essential Web page development skills using Extensible HTML, and incorporating images, hyperlinks, tables, forms and frames. Students will learn to write code manually, as well as use GUI authoring tools. Industry certification competencies will be used for this course.

**CTE Sequence:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Business Management; Design, Multimedia and Web Technologies; Design, Multimedia and Web Technologies Advanced; IT Advanced Web Technologies; Computer Information Systems; Computer Information Systems Advanced; IT Fundamentals; IB Business and Management; Programming; Programming Advanced; Principles of Business and Marketing, Digital Applications, Word Processing

Schools offering course: 8, 9

**IT ADVANCED WEB TECHNOLOGIES**

**Grades: 11-12**

**Prerequisite: IT Web Technologies**

Students will engage in Web Site Development Process using HTML, XHTML, Dynamic HTML, XML, Server-side technologies, Java applets, tables, frames, metadata and Cascading Style Sheets. Industry certification competencies will be used for the course.

**CTE Sequence:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Business Management; Design, Multimedia and Web Technologies; IT Web Technologies; Computer Information Systems; Computer Information Systems

Schools offering course: Advanced; IT Fundamentals; IB Business and Management; Programming; Programming Advanced; Principles of Business and Marketing

Schools offering course: 8, 9

**FAMILY AND CONSUMER SCIENCE**

All Family and Consumer Science courses will count toward meeting the one-credit “Fine Arts or Career and Technical Education” requirement for graduation.

**INTRODUCTION TO CULINARY ARTS**

**Grades: 10-12**

**Prerequisite: None**

The competencies focus on identifying and exploring the individual careers within the food service industry. Units of study include food science and technology, dietetics and nutrition services, diverse cuisines and service styles, current trends, food and beverage production and preparation, and food safety and sanitation.

**CTE Sequence:** The course above and any one of the following courses – GRADS; Independent Living; Individual Development; Life Planning; Culinary Arts I; Culinary Arts II; Nutrition and Wellness

Schools offering course: All except 3, 4, 6, 8, 99

**CULINARY ARTS I**

**Grades: 11-12**

**Prerequisites: ADMISSION TO ALL STUDENTS BY APPLICATION**

Students practice managerial, production, and service skills used in government, commercial, or independently owned institutional food establishments and related food industry occupations. Students plan, select, store, purchase, prepare, and serve food and food products; study basic nutrition, sanitation, and food safety; the use and care of commercial equipment; and the operation of institutional food establishments. Critical
thinking, practical problem solving, and entrepreneurship opportunities within the field of culinary arts are emphasized.

**CTE Sequence:** The course above and any one of the following courses – GRADS; Independent Living; Individual Development; Introduction to Culinary Arts; Culinary Arts II; Nutrition and Wellness

Schools offering course: 4, 11

**CULINARY ARTS II**

*Grade: 12  Credit: 2
Prerequisite: Culinary Arts I*

Culinary Arts II provides students an opportunity to refine skills in serving, dining room management, and other skills learned in Culinary Arts I. Students prepare for occupations such as chef/cook, baker/pastry helper, pastry decorator, hospitality worker, dietetic aide/assistant, food demonstrator, and entrepreneur. Critical thinking, practical problem solving, and entrepreneurship opportunities within the field of culinary arts are emphasized. Teachers highlight the basic skills of mathematics, science and communication when appropriate in content.

**CTE Sequence:** The course above and any one of the following courses – GRADS; Independent Living; Individual Development; Introduction to Culinary Arts; Culinary Arts I; Nutrition and Wellness

Schools offering course: 4, 11

**EARLY CHILDHOOD EDUCATION AND SERVICES I**

*Grades: 11-12  Credit: 2
Prerequisite: ADMISSION TO ALL STUDENTS BY APPLICATION*

Students prepare to be primary providers of home-, family-, or institution-based child care services by focusing on the planning, organizing, and conducting of meaningful play and learning activities; child monitoring and supervision; record-keeping; and referral procedures. Critical thinking, practical problem solving and entrepreneurship opportunities within the field of early childhood education are emphasized. Practical experiences under the supervision of the instructor are required. Students also prepare for continuing education leading to careers in early childhood fields.

**CTE Sequence:** The course above and any one of the following courses – Early Childhood Education and Services II; Family Relations; GRADS; Individual Development; Child Development and Parenting; Virginia Teachers for Tomorrow; Virginia Teachers for Tomorrow II

Schools offering course: 2, 3, 5, 10, 11

**INTRODUCTION TO FASHION CAREERS**

*(formerly Introduction to Fashion Design and Marketing)*

*Grades: 11-12  Credit: 1
Prerequisite: None*

The design and merchandising competencies for this course focus on identifying and exploring the individual careers within the apparel, accessory, and textile design, manufacturing, and merchandising industry. Units of study include the relationships that exist among all areas of the clothing industry; related global and economic issues; apparel, accessory, and textile technology; exploration of careers, including entrepreneurial opportunities in related areas; and the skills and personal characteristics necessary for success in careers in the apparel, accessory, and textile design, manufacturing, and marketing industry.

**CTE Sequence:** The course above and any one of the following courses – Early Childhood Education I; Family Relations; GRADS; Individual Development; Child Development and Parenting; Virginia Teachers for Tomorrow I; Virginia Teachers for Tomorrow II

Schools offering course: 2, 3, 5, 11

**FAMILY RELATIONS**

*Grades: 9-12  Credit: 1
Prerequisite: None*

Students enrolled in Family Relations focus on analyzing the significance of the family, nurturing human development in the family throughout the life span, analyzing factors that build and maintain healthy family relationships, developing communication patterns that enhance family relationships, dealing effectively with family stressors and conflicts, managing work and family roles and responsibilities, and analyzing social forces that influence families across the life span. Critical thinking, practical problem solving, and entrepreneurship opportunities within the area of family responsibilities and services are emphasized. Teachers highlight the basic skills of mathematics, science, and communication when appropriate in the content.

**CTE Sequence:** The course above and any one of the following courses – Child Development and Parenting; GRADS; Independent Living; Individual Development; Life Planning; Nutrition and Wellness

Schools offering course: 2, 11
INDEPENDENT LIVING
Grades: 9-12
Credit: 1
Prerequisite: None
This course allows students to explore successful strategies for living independently by actively participating in practical problem solving focusing on relating to others, applying financial literacy, managing resources in the areas of apparel, nutrition and wellness, and housing, using leadership skills to reach individual goals, planning for careers, and making consumer choices in a global environment.

CTE Sequence: The course above and any one of the following courses – Child Development and Parenting; Culinary Arts I; Culinary Arts II; Family Relations; GRADS; GRADS Work Focus; Individual Development; Introduction to Culinary Arts; Life Planning; Nutrition and Wellness
Schools offering course: All except 99

INDIVIDUAL DEVELOPMENT
Grades: 9-12
Credit: 1
Prerequisite: None
Students enrolled in Individual Development focus on encouraging personal potential of self and others throughout the life-span; enhancing positive views of self and others; managing stressful situations; formulating a plan to achieve career goals; forming healthy, caring relationships with family members and peers; managing conflict; choosing responsible ways to express oneself; and evaluating the importance of responsible parenting to individuals, families, and society. Critical thinking, practical problem-solving, and entrepreneurship opportunities within the area of individual mental, emotional, and physical health are emphasized. Teachers highlight the basic skills of math, science, and communication when appropriate in the content.

CTE Sequence: The course above and any one of the following courses – Child Development and Parenting; Culinary Arts I; Culinary Arts II; Early Childhood Education and Services I; Early Childhood Education and Services II; Family Relations; GRADS; GRADS Work Focus; Independent Living; Introduction to Culinary Arts; Life Planning; Nutrition and Wellness; Virginia Teacher for Tomorrow I; Virginia Teachers for Tomorrow II
Schools offering course: 2, 3, 5, 10

LIFE PLANNING
Grades: 11-12
Credit: 1
Prerequisite: None
Life Planning equips students with the skills to face the challenges in today’s society. Students will develop a life-management plan which includes Developing Career, Community, and Life Connections; Applying Problem-Solving Processes to Life Situations; Creating and Maintaining Healthy Relationships; Developing Strategies for Lifelong Career Planning, Developing a Financial Plan; Examining Components of Individual and Family Wellness; and Demonstrating Leadership within the Community. Critical thinking and practical problem-solving are emphasized through relevant life applications.

CTE Sequence: The course above and any one of the following courses – Child Development and Parenting; Family Relations; GRADS; GRADS Work Focus; Independent Living; Individual Development; Introduction to Culinary Arts; Introduction to Fashion Design and Marketing; Nutrition and Wellness; Virginia Teachers for Tomorrow I; Virginia Teachers for Tomorrow II
Schools offering course: See counselor for availability

NUTRITION AND WELLNESS
Grades: 9-12
Credit: 1
Prerequisite: None
Students enrolled in Nutrition and Wellness focus on making choices that promote wellness and good health, analyzing relationships between psychological and social needs and food choice; choosing foods that promote wellness; obtaining and storing food for self and family; preparing and serving nutritious meals and snacks; selecting and using equipment for food preparation; and identifying strategies to promote optimal nutrition and wellness of society. Critical thinking, practical problem solving, and entrepreneurship opportunities within the area of nutrition and wellness are emphasized. Teachers highlight the basic skills of math, science, and communication when appropriate in the content.

CTE Sequence: The course above and any one of the following courses – Child Development and Parenting; Culinary Arts I; Culinary Arts II; Early Childhood Education and Services I; Early Childhood Education and Services II; Family Relations; GRADS; GRADS Work Focus; Independent Living; Individual Development; Introduction to Culinary Arts; Life Planning
Schools offering course: All except 9, 99

CHILD DEVELOPMENT AND PARENTING
Grades: 9-12
Credit: 1
Prerequisite: None
Students enrolled in Child Development and Parenting focus on analyzing parenting roles and responsibilities, ensuring a healthy start for mother and child, evaluating support systems that provide services for parents, and evaluating parenting practices that maximize human growth and development. Critical thinking, practical problem-solving using case studies, and entrepreneurship opportunities within the area of parenting responsibilities and child development are emphasized. Teachers highlight the basic skills of mathematics, science, and technology when appropriate.

CTE Sequence: The course above and any one of the following courses – Early Childhood Education and Services I; Early Childhood Education and Services II; Family Relations; GRADS; GRADS Work Focus; Independent Living; Individual Development; Life Planning; Nutrition and Wellness; Virginia Teachers for Tomorrow I; Virginia Teachers for Tomorrow II
Schools offering course: All

School Number Code:
1 – Brentsville
2 – Gar-Field
3 – Osbourn Park
4 – Potomac
5 – Stonewall
6 – Woodbridge
7 – Hylton
8 – Forest Park
9 – Battlefield
10 – Freedom
11 – Patriot
12 – Colgan
99 – Virtual
Virginia Teachers for Tomorrow (VTfT) fosters student interest, understanding, and appreciation of the teaching profession and allows secondary students to explore careers in education. Students build a foundation for teaching; learn the history, structure, and governance of teaching; apply professional teaching techniques in the VTfT classroom and reflect on their teaching experiences. Additional educational leadership opportunities are offered through the student organization, Future Educators Association.

**CTE Sequence:** The course above and any one of the following courses – Child Development and Parenting; Early Childhood Education and Services I; Early Childhood Education and Services II; Individual Development; Life Planning; Virginia Teachers for Tomorrow II

Schools offering course: 2, 3, 5, 6, 8, 11, 12

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**HEALTH AND MEDICAL SCIENCE**

All Health and Medical Science courses will count toward meeting the one-credit “Fine Arts or Career and Technical Education” requirement for graduation except Practical Nursing III.

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**BIOMEDICAL INNOVATION (PLTW)**

**Grades:** 11-12

**Credit:** 1

**Prerequisite:** None

In this specialization course for PLTW, students are taught concepts of human physiology, medical innovation, water contamination, public health issues, molecular biology, and forensic autopsy. Students complete an independent project as a culminating activity.

**CTE Sequence:** The course above and any one of the following courses – Human Body Systems (PLTW), Principles of Biomedical Sciences (PLTW), Medical Interventions (PLTW)

Schools offering course: 3

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**HUMAN BODY SYSTEMS (PLTW)**

**Grades:** 10-12

**Credit:** 1

**Prerequisite:** Principles of Biomedical Science (PLTW)

In this PLTW specialized course, students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis. Exploring science in action, students build organs and tissues on a skeletal manikin; use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases.

**CTE Sequence:** The course above and any one of the following courses – Biomedical Innovation (PLTW), Medical Interventions (PLTW), Principles of Biomedical Sciences (PLTW)

Schools offering course: 3

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**MEDICAL CODING AND BILLING I**

**Grades:** 11-12

**Credit:** 1

**Prerequisite:** None

Students will be introduced to healthcare systems, how to manage an office, and the electronic medical record as it pertains to the field of medical coding and billing. Students will be exposed to the medical terminology used to describe human anatomy and physiology. Students will also be introduced to the field of health informatics.

**CTE Sequence:** The course above and Medical Coding and Billing II.

Schools offering course: 10

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**MEDICAL INTERVENTIONS (PLTW)**

**Grades:** 11-12

**Credit:** 1

**Prerequisite:** Human Body Systems

Students follow the life of a fictitious family as they investigate how to prevent, diagnose and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical device and diagnostics.

**CTE Sequence:** The course above and any one of the following courses – Human Body Systems (PLTW), Biomedical Innovation (PLTW) 

Schools offering course: 3

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**PRINCIPLES OF BIOMEDICAL SCIENCE (PLTW)**

**Grades:** 9-12

**Credit:** 1

**Prerequisite:** None

Student explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person’s life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.
**CTE Sequence**: Biomedical Innovation (PLTW); Human Body Systems (PLTW); Medical Interventions (PLTW)

Schools offering course: 3

**Practical Nursing I (18 weeks)**

Grade: 12-Adult  
Credit: 1.5  
Prerequisite: ADMISSION TO ALL STUDENTS BY APPLICATION; Biology, Chemistry, and Algebra recommended

- Prepares for Licensure Exam

In the first semester, students learn nursing care of patients of all ages, in various stages of sickness or wellness, and with a variety of disease conditions. They focus on human anatomy, body function, communication, community health, fundamental nursing skills, nutrition, drug therapy, and elementary medical-surgical nursing.

**CTE Sequence**: Practical Nursing II

Schools offering course: Available to ALL high school students through an application process. Check with school counselor. Adult applications accepted with tuition. Call 571.598.3907.

**Practical Nursing II (18 weeks)**

Grade: 12-Adult  
Credit: 1.5  
Prerequisite: Practical Nursing I (Biology, Chemistry, and Algebra recommended)

- Prepares for Licensure Exam

In the second semester, instruction emphasizes introduction to pharmacology, normal life span (human growth and development), normal nutrition, nursing fundamentals, and nursing trends. Advanced emergency procedures and application of nursing procedures are demonstrated in a laboratory setting.

**CTE Sequence**: Practical Nursing III

Schools offering course: Available to ALL high school students through an application process. Check with school counselor. Adult application accepted with tuition. Call 571-598-3907.

**IB PROGRAMME – CTE COURSES**

**IB BUSINESS MANAGEMENT (SL)**

Grades: 11-12  
Credit: 1  
Prerequisite: Enrollment in IB Program

IB Business and Management is a recognized IB course. This course is designed to provide a rigorous and critical study of the ways in which individuals and groups interact in a dynamic business environment. It examines how business decisions are made, how these decisions make an impact on internal and external environments, and how these decisions foster international cooperation and responsible citizenship. Also included are the objectives required to satisfy the graduation requirement for Economics and Personal Finance.

**CTE Sequence**: The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Computer Information Systems; Computer Information Systems Advanced; Design, Multimedia, and Web Technologies; Design, Multimedia, and Web Technologies Advanced; Principles of Business and Marketing; Marketing; Digital Applications; Word Processing

Schools offering course: 2

**Sports Medicine I**

Grades: 11-12  
Credit: 1  
(10th grade with permission from instructor)  
Prerequisite: Successful completion of Health and Physical Education I and II with a grade of “C” or better, and/or teacher recommendation

In this course, students earn a certification in First Aid/CPR/AED. The course introduces students to topics such as human anatomy and physiology, nutrition, biomechanics, medical terminology, injuries and illnesses, and legal and ethical issues in sports medicine. Students also examine prospective careers in the sports medicine field.

**CTE Sequence**: Sports Medicine II

Schools offering course: All except 9, 12

**Sports Medicine II**

Grades: 11-12  
Credit: 1  
Prerequisite: Successful completion of Sports Medicine I

This course builds upon basic knowledge acquired in Sports Medicine I on topics such as exercise physiology, biomechanics, exercise program design, and injury prevention, assessment, treatment, and management. Students may prepare for a career in sports medicine.

**CTE Sequence**: Sports Medicine I

Schools offering course: All except 9, 12

**IB BUSINESS MANAGEMENT (SL)**

Grades: 11-12  
Credit: 1  
Prerequisite: Enrollment in IB Program

IB Business and Management is a recognized IB course. This course is designed to provide a rigorous and critical study of the ways in which individuals and groups interact in a dynamic business environment. It examines how business decisions are made, how these decisions make an impact on internal and external environments, and how these decisions foster international cooperation and responsible citizenship. Also included are the objectives required to satisfy the graduation requirement for Economics and Personal Finance.

**CTE Sequence**: The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Computer Information Systems; Computer Information Systems Advanced; Design, Multimedia, and Web Technologies; Design, Multimedia, and Web Technologies Advanced; Principles of Business and Marketing; Marketing; Digital Applications; Word Processing

Schools offering course: 2
IB INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY
Grades: 11-12 Credit: 1
Prerequisite: Enrollment in IB Program
This course is designed to promote an understanding and appreciation of the social significance of information technology and networking as students analyze and evaluate in a critical manner the impact and ethical considerations arising from the widespread use of information technology and networking. The course focuses on how information systems and networks are used to process and exchange information for control, analysis, and communications.

CTE Sequence: The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Computer Information Systems; Computer Information Systems Advanced; Design, Multimedia, and Web Technologies; Design, Multimedia, and Web Technologies Advanced; Principles of Business and Marketing; Digital Applications; Business Management; Information Technology Fundamentals; Office Specialists I; Programming
Schools offering course: 2

IB PERSONAL AND PROFESSIONAL SKILLS
Grades: 11-12 Credit: 1
Prerequisite: Enrollment in IB Program
This course is designed to introduce students to life skills. In this model, the learner uses a range of skills to make sense of the world and develops skills with an emphasis on thinking critically and ethically and communicating effectively.

CTE Sequence: None
Schools offering course: 2, 5
JROTC

Graduation requirements are located in the “General Information” section.

Participation in JROTC does not commit or obligate any student to military service. These courses are designed to teach citizenship and leadership skills through their respective service.

NAVY JROTC COURSE SEQUENCE

NAVAL SCIENCE I (NJROTC)
Grades: 9-11 Credit: 1
Prerequisite: Student must be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards

This introductory course is designed for all students in their first year of Naval Science. Units are taught in military customs and courtesies, leadership, government, geography, naval history, introductory navigation, and basic seamanship. Students are inspected in designated Naval Cadet uniform once a week, participate in military drill, and attend field trips as well as training visits to military installations, ships, and museums. Extracurricular activities include Drill Team/Color Guard, Air Rifle Team, Academic Team, and active participation in community events and in the unit organization. Students planning to enroll in JROTC programs must meet program entry requirements.

CTE Sequence: The course above and Naval Science II
Schools offering course: 3, 4

NAVAL SCIENCE II (NJROTC)
Grades: 10-12 Credit: 1
Prerequisite: Student must be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards. Successful completion of NJROTC I

This course includes units of study in leadership, maritime history, maritime geography, oceanography, meteorology, astronomy and physical science. Students are inspected in a designated Naval Cadet uniform once a week, participate in military drill, and also attend field trips and training visits. Second-year cadets begin to assume leadership positions in the unit and in various extracurricular activities. Students planning to enroll in JROTC programs must meet program entry requirements.

CTE Sequence: The course above and Naval Science I
Schools offering course: 3, 4

NAVAL SCIENCE III (NJROTC)
Grades: 11-12 Credit: 1
Prerequisite: Student must be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards. Successful completion of NJROTC II

This third-year course includes units of study in leadership, naval knowledge and naval skills. Naval knowledge includes the study of Sea Power and National Security, Naval Operations and support functions, military law, and international law and the sea. Naval Skills includes study of ship construction and damage control, shipboard organization and watch standing, marine navigation, rules of the road and maneuvering board, and naval weapons and aircraft. Students assume increasing positions of leadership and participate in the full range of activities. They also teach new cadets in customs and courtesies, rules and regulations, proper wearing of the uniform and drill. Students planning to enroll in JROTC programs must meet program entry requirements.

Schools offering course: 3, 4

NAVAL SCIENCE IV (NJROTC)
Grades: 10-12 Credit: 1
Prerequisite: Student must be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards. Successful completion of NJROTC III

This fourth-year course includes units of study in leadership and the graded practical application of previous course work and experience in planning and executing organizational functions. Students organize and lead the company of cadets in all activities. Students planning to enroll in JROTC programs must meet program entry requirements.

Schools offering course: 3, 4

ARMY JROTC COURSE SEQUENCE

MILITARY SCIENCE I (AJROTC)
Grades: 9-12 Credit: 1
Prerequisite: Students planning to enroll in JROTC programs must meet program entry requirements. Student must be able to participate in the JROTC physical fitness program, dress in regulation uniform and meet and maintain the personal grooming standards as outlined in the USA Cadet Command Regulation

This introductory course is designed for all students in their first year of Military Science. Curriculum units are taught in American Citizenship, Techniques of Communication, Leadership, Presidential Physical Fitness testing, Basic Drill and Ceremony, First Aid and Your Health, Drug Abuse Prevention, Map Reading, Military History, Customs and Courtesies of the Army, Basic Leadership Skills, and Life Management Skills. Students are inspected in a designated Army cadet uniform once a week and participate in military drill and field trips. Co-curricular activities include Drill/Color Guard, Air Rifle Team, Raider Team, and active participation in community events/service projects and in unit social activities such as a dining-in and military ball.

CTE Sequence: The course above and Military Science II
Schools offering course: 6, 8

School Number Code:
and the ability to live and work cooperatively with others through encouraged and are self motivated to display leadership potential Corps in all activities. The Cadets Corps of senior students are course work and experience in planning and executing leadership and the graded practical application of previous This fourth-year course includes curriculum units of study in Science I, II, and III

Grades: 10-12 Credit: 1
Prerequisite: Students planning to enroll in JROTC programs must meet program entry requirements. Student must be able to participate in the JROTC physical fitness program, dress in regulation uniform and meet and maintain the personal grooming standards as outlined in the USA Cadet Command Regulation, and must have successfully completed Military Science I or equal level in another JROTC program

This second-year course includes Techniques of Communication, Leadership, Presidential Physical Fitness testing, Drill and Ceremony, First Aid and Hygiene, Drug Abuse Prevention, Map Reading, American Military History, Career Opportunities, Role of the U.S. Army, and Technology Awareness. Students are inspected in their designated Army Cadet uniform once a week, participate in military drill, and also attend field trips. Second-year cadets begin to assume leadership positions in the unit and in various extracurricular activities as listed in Military Science I.  

CTE Sequence: The course above and Military Science I

Schools offering course: 6, 8

MILITARY SCIENCE II (AJROTC)

Grades: 11-12 Credit: 1
Prerequisite: Students planning to enroll in JROTC programs must meet program entry requirements. Student must be able to participate in the JROTC physical fitness program, dress in regulation uniform and meet and maintain the personal grooming standards as outlined in the USA Cadet Command Regulation, and must have successfully completed Military Science I and II

This third-year course includes curriculum study in Techniques of Communication, Leadership, Presidential Physical Fitness testing, Drill and Ceremony, First Aid, Drug Abuse Prevention, Map Reading, American History, Citizenship, Career Opportunities, Role of the U.S. Army, Technology Awareness, and Motivational Programs. Students assume increasing positions of leadership and participate in the full range of activities. Students also teach new cadets in customs and courtesies, rules and regulations, proper wearing of the Army Cadet uniform, and drill.

Schools offering course: 6, 8

MILITARY SCIENCE III (AJROTC)

Grades: 12 Credit: 1
Prerequisite: Students planning to enroll in JROTC programs must meet program entry requirements. Student must be able to participate in the JROTC physical fitness program, dress in regulation uniform and meet and maintain the personal grooming standards as outlined in the USA Cadet Command Regulation, and must have successfully completed Military Science I, II, and III

This fourth-year course includes curriculum units of study in leadership and the graded practical application of previous course work and experience in planning and executing organizational functions. Students organize and lead the Cadet Corps in all activities. The Cadets Corps of senior students are encouraged and are self motivated to display leadership potential and the ability to live and work cooperatively with others through the effective understanding and application of the leadership traits, principles, styles, and the Army core values. Senior students have a goal to be able to critically analyze quality leadership traits; and use the application of effective management techniques for planning and decision-making/problem solving processes (as well as the ethical decision-making process) and supervision in staff and command/leadership positions.

Schools offering course: 6, 8

MARINE JROTC COURSE SEQUENCE

LEADERSHIP EDUCATION I (MCJROTC)

Grades: 9-12 Credit: 1
Prerequisite: Student must be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards

The course of instruction is a combined program of classroom instruction and practical application designed to emphasize leadership education, citizenship, self-discipline, personal growth and responsibility, and character development. Basic training in leadership tenets, physical fitness, health, drill and ceremonies, military customs and courtesies, general military subjects, grooming standards, uniform wear and care and military organization are taught as part of the cadets’ orientation to the Marine Corps and as a means to develop leadership qualities taught in class. Cadets are expected to wear designated Marine Corps uniforms on a weekly basis, and adhere to appropriate grooming standards. Extracurricular activities include Drill Team/Color Guard, Raider (physical fitness) Team, Air Rifle Team, orientation trips, community service projects, and social events. The first year also gives the new cadets exposure to personal growth and responsibility, and establishes a foundation of military structure and tradition. Students planning to enroll in JROTC programs must meet program entry requirements.

CTE Sequence: The course above and Leadership Education I

Schools offering course: 2

LEADERSHIP EDUCATION II (MCJROTC)

Grades: 10-12 Credit: 1
Prerequisite: Successful completion of Leadership Education I, and be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards

This course builds upon knowledge and experience attained during Leadership Education I. The course continues to stress classroom instruction and practical application designed to emphasize leadership education, citizenship, personal growth and responsibility, self-discipline, character development, and future career considerations. Training in leadership, physical fitness, drill and ceremonies, military customs and courtesies, general military subjects, air rifle marksmanship, and military history are taught as part of the cadets’ further orientation to the Marine Corps and as a means to develop leadership qualities taught in class. Cadets are expected to wear designated Marine Corps uniforms on a weekly basis, adhere to appropriate grooming standards, and perform leadership roles within the MCJROTC cadet organization. Extracurricular activities include Drill Team/Color Guard, Raider (physical fitness) Team, Air Rifle

School Number Code:
1 – Brentsville 4 – Potomac 7 – Hylton 10 – Freedom 99 – Virtual
2 – Gar-Field 5 – Stonewall 8 – Forest Park 11 – Patriot 12 – Colgan
3 – Osbourn Park 6 – Woodbridge 9 – Battlefield

81
Team, orientation trips, community service projects, and social events. Students planning to enroll in JROTC programs must meet program entry requirements.

**CTE Sequence:** The course above and Leadership Education I

Schools offering course: 2

### Leadership Education III (MCJROTC)

**Grades: 11-12**

**Credit: 1**

**Prerequisite:** Successful completion of Leadership Education I and II, and be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards

This course builds upon the knowledge and experience attained during Leadership Education I and II. The course continues to stress classroom instruction and practical application designed to emphasize leadership education, citizenship, personal growth and responsibility, self-discipline, and character development. Training in leadership, physical fitness, drill and ceremonies, military customs and courtesies, general military subjects, air rifle marksmanship, and military history are taught as part of the cadets’ further orientation to the Marine Corps. During this year, there is an increased emphasis on the consideration and exploration of post high school educational and career opportunities. Cadets are expected to wear designated Marine Corps uniforms on a weekly basis, adhere to appropriate grooming standards, and perform leadership roles within the MCJROTC cadet organization. Extracurricular activities include Drill Team/Color Guard, Raider (physical fitness) Team, Air Rifle Team, orientation trips, community service projects, and social events. Students planning to enroll in JROTC programs must meet program entry requirements.

Schools offering course: 2

### Leadership Education IV (MCJROTC)

**Grade: 12**

**Credit: 1**

**Prerequisite:** Successful completion of Leadership Education I, II, and III, and be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards

The course allows senior cadets the opportunity to serve as both a training facilitator for the MCJROTC instructional staff and as a mentor for junior cadets. Senior cadets are expected to display positive attitudes, requisite leadership ability, and perform in leadership roles within the MCJROTC cadet organization. Senior cadets are assigned to Leadership Education I, II, or III classes to provide leadership, serve as role models, conduct training, and mentor junior cadets as a means to enhance their leadership education and prepare them for a career after high school. Cadets are expected to wear designated Marine Corps uniforms on a weekly basis, adhere to appropriate grooming standards, and perform leadership roles within the MCJROTC cadet organization. Extracurricular activities include Drill Team/Color Guard, Raider (physical fitness) Team, Air Rifle Team, orientation trips, community service projects, and social events. Students planning to enroll in JROTC programs must meet program entry requirements.

Schools offering course: 2

### Aerospace Science and Leadership I (AFJROTC)

**Grades: 9-11**

**Credit: 1**

**Prerequisite:** Student must be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards

This introductory course is designed for all students in their first year of Air Force JROTC. Units taught include the heritage of flight, development of air power, contemporary aviation, and the aerospace environment. Leadership studies include Air Force customs and courtesies, cadre corps activities, study habits, time management, communication skills, and leadership and management studies. Extracurricular activities include Drill Team/Color Guard. Cadets also participate in parades, summer leadership schools, drill team competitions, military balls, honorary academic groups, and other community activities. Students planning to enroll in JROTC programs must meet program entry requirements.

**CTE Sequence:** The course above and Aerospace Science and Leadership II

Schools offering course: 5, 7, 9, 10

### Aerospace Science and Leadership II (AFJROTC)

**Grades: 10-12**

**Credit: 1**

**Prerequisite:** Student must be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards. Successful completion of AFJROTC I

This course includes units of study in The Aerospace Environment, Human Requirements of Flight, Principles of Aircraft Flight History, and Principles of Navigation. Students are inspected in a designated Air Force cadet uniform, participate in military drill, and also attend field trips and training visits. Second-year cadets begin to learn effective communication skills, understanding individual and group behavior, and practice basic leadership concepts. Students planning to enroll in JROTC programs must meet program entry requirements.

**CTE Sequence:** The course above and Aerospace Science and Leadership I

Schools offering course: 5, 7, 9, 10

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### CTE Sequence

**AEROSPACE SCIENCE AND LEADERSHIP I**

**Grades:** 9-11

**Credit:** 1

**Prerequisite:** Student must be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards

This introductory course is designed for all students in their first year of Air Force JROTC. Units taught include the heritage of flight, development of air power, contemporary aviation, and the aerospace environment. Leadership studies include Air Force customs and courtesies, cadre corps activities, study habits, time management, communication skills, and leadership and management studies. Extracurricular activities include Drill Team/Color Guard. Cadets also participate in parades, summer leadership schools, drill team competitions, military balls, honorary academic groups, and other community activities. Students planning to enroll in JROTC programs must meet program entry requirements.

**CTE Sequence:** The course above and Aerospace Science and Leadership II

Schools offering course: 5, 7, 9, 10

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### CTE Sequence

**AEROSPACE SCIENCE AND LEADERSHIP II**

**Grades:** 10-12

**Credit:** 1

**Prerequisite:** Student must be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards. Successful completion of AFJROTC I

This course includes units of study in The Aerospace Environment, Human Requirements of Flight, Principles of Aircraft Flight History, and Principles of Navigation. Students are inspected in a designated Air Force cadet uniform, participate in military drill, and also attend field trips and training visits. Second-year cadets begin to learn effective communication skills, understanding individual and group behavior, and practice basic leadership concepts. Students planning to enroll in JROTC programs must meet program entry requirements.

**CTE Sequence:** The course above and Aerospace Science and Leadership I

Schools offering course: 5, 7, 9, 10

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**School Number Code:**

1 – Brentsville
2 – Gar-Field
3 – Osbourn Park
4 – Potomac
5 – Stonewall
6 – Woodbridge
7 – Hylton
8 – Forest Park
9 – Battlefield
10 – Freedom
11 – Patriot
12 – Colgan
99 – Virtual

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*A student may apply to receive college credit for the noted courses. The instructor for each course will provide the application instructions. Upon successful completions and approval from the senior instructor, students will receive college credit from the University of Colorado that can be accepted upon entrance to any university.*
**AEROSPACE SCIENCE AND LEADERSHIP III (AFJROTC)**

**Grades: 11-12**
**Credit: 1**
**Prerequisite: Student must be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards. Successful completion of AFJROTC, I and II**

This third-year course includes units of study in Orbits and Trajectories, Spacecraft and Launch Vehicles, and continued practicing of Basic Leadership Concepts. Students assume increasing positions of leadership and participate in the full range of activities. Cadets will begin to learn goal setting and begin to develop skills related to preparing for future careers. All extracurricular activities (Drill Team/Color Guard, parades, competitions, honorary groups and community service) apply. Students planning to enroll in JROTC programs must meet program entry requirements.

Schools offering course: 5, 7, 9, 10

**AEROSPACE SCIENCE AND LEADERSHIP IV (AFJROTC)**

**Grades: 11-12**
**Credit: 1**
**Prerequisite: Student must be able to participate in physical education program, dress in regulation uniform and meet and maintain the personal grooming standards. Successful completion of AFJROTC I and II (and III is preferred).**

This fourth-year course includes continued instruction in flight through the Honors Ground Program. Other units of study are offered in leadership through management of cadet corps, and practicing management techniques, decision making, management functions for themselves and others. All extracurricular activities (Drill Team/Color Guard, parades, competitions, military balls honorary groups and community activities) apply. Students organize and lead flight(s) of cadets in all activities. Students planning to enroll in JROTC programs must meet program entry requirements.

Schools offering course: 5, 7, 9, 10

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**MARKETING**

All marketing courses will count toward meeting the one-credit “Fine Arts or Career and Technical Education” requirement for graduation.

**FASHION MARKETING**

**Grades: 10-12**
**Credit: 1**
**Prerequisite: None**

In this specialized course, students gain basic knowledge of the apparel and accessories industry and skills necessary for successful employment in apparel businesses. Students will develop general marketing skills necessary for successful employment in fashion marketing, general marketing skills applicable to the apparel and accessories industry, and specialized skills unique to fashion marketing. Personal selling, sales promotion, purchasing, physical distribution, marketing planning, and product/service technology are part of this course.

**ADVANCED FASHION MARKETING**

**Grades: 11-12**
**Credit: 1**
**Prerequisite: Fashion Marketing**

Students with a career interest in apparel and accessories marketing gain in-depth knowledge of the apparel and accessories industry and skills important for supervisory-management employment in apparel businesses. They develop advanced competencies unique to fashion marketing and advanced general marketing skills applied to the apparel and accessories industry. Professional selling, sales promotion, buying, merchandising, marketing research, and product/service technology are part of this course.

**CTE Sequence:** The course above and any one of the following courses – Entrepreneurship; Fashion Marketing Advanced; Introduction to Fashion Design and Marketing; Marketing; Marketing Advanced; Principles of Business and Marketing

Schools offering course: 2, 3, 4, 6, 9, 10, 11

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**HOTEL MANAGEMENT AND OPERATIONS**

**Grades: 11-12**
**Credit: 1**
**Prerequisite: Opportunities in Hospitality & Tourism (formerly Hotel Marketing)**

Students gain in-depth knowledge of the marketing functions within the hotel-motel industry and the management responsibilities for those functions. They develop advanced skills in the area of hotel-motel operation in which they choose to specialize.

**CTE Sequence:** The course above and any one of the following courses – Entrepreneurship; Hotel Marketing; Marketing; Marketing Advanced; Opportunities in Hospitality and Tourism; Principles of Business and Marketing

Schools offering course: 10

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**OPPORTUNITIES IN HOSPITALITY AND TOURISM**

**Grades: 10-12**
**Credit: 1**
**Prerequisite: None**

This course examines the components of the hospitality and tourism industry, including attractions, lodging, transportation, and food and beverage. Other topics include the history, political, social, and cultural impacts hospitality and tourism have had on local, state, and global environments. Students will develop competencies in the areas of communication, customer service, marketing, industry technology, economics, and management functions, and will be provided with opportunities for hands-on, real-world applications.

**CTE Sequence:** The course above and any one of the following courses – Entrepreneurship; Hotel Management and Operations; Marketing; Marketing Advanced; Principles of Business and Marketing

Schools offering course: 2, 3, 4, 6, 9, 11

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School Number Code:

1 – Brentsville 4 – Potomac 7 – Hylton 10 – Freedom 99 – Virtual
2 – Gar-Field 5 – Stonewall 8 – Forest Park 11 – Patriot
3 – Osbourn Park 6 – Woodbridge 9 – Battlefield 12 – Colgan

83
MARKETING
Grades: 10-12
Prerequisite: None
Students examine activities in marketing and business important for success in marketing employment and post-secondary education. Students will learn how products are developed, branded, and sold to businesses and consumers. Students will analyze industry trends and gain hands-on experience in the marketing of goods, services, and ideas. Topics will include professionalism in the workplace, product planning and positioning, promotion, pricing, selling, economic issues, and the impact of technology on the marketplace.

CTE Sequence: The course above and any one of the following courses – Business Management; Entrepreneurship; Fashion Marketing; Advanced Fashion Marketing; Opportunities in Hospitality and Tourism; Hotel Management and Operations; IB Business and Management; Introduction to Fashion Design and Marketing; Marketing Advanced; Sports, Entertainment and Recreation Marketing; Sports, Entertainment and Recreation Marketing Advanced; Principles of Business and Marketing

Schools offering course: 2, 3, 4, 5, 9, 10, 11, 12

ADVANCED MARKETING
Grade: 12
Prerequisite: Marketing
Students build on knowledge gained in a prior Marketing course. Students participate in supervisory and management activities focusing on the marketing mix, purchasing, financing, human resources, global marketing, pricing, and emerging technologies. Students will prepare for advancement in marketing careers and post-secondary education.

CTE Sequence: The course above and any one of the following courses – Entrepreneurship; Fashion Marketing; Fashion Marketing Advanced; Hotel Marketing; Opportunities in Hospitality and Tourism; Hotel Management and Operations; Introduction to Fashion Design and Marketing; Marketing; Principles of Business and Marketing; Sports, Entertainment and Recreation Marketing; Sports, Entertainment and Recreation Marketing Advanced

Schools offering course: 2, 4, 9, 10

SPORTS, ENTERTAINMENT, AND RECREATION MARKETING
Grades: 10-12
Prerequisite: None
This introductory course helps students develop a thorough understanding of fundamental marketing concepts and theories as they relate to the sports, entertainment, and recreation industries. Students will investigate the components of branding, sponsorships, and endorsements, as well as promotion plans needed for sports, entertainment and recreation events. The course also supports career development skills and explores career options.

CTE Sequence: The course above and any one of the following courses – Entrepreneurship; Marketing; Marketing Advanced; Principles of Business and Marketing; Sports, Entertainment, and Recreation Marketing Advanced

Schools offering course: 2, 3, 4, 6, 7, 9, 10, 11, 12

ADVANCED SPORTS, ENTERTAINMENT, AND RECREATION MARKETING
Grades: 11-12
Prerequisite: Sports, Entertainment, and Recreation Marketing
Students will build on prior knowledge of sports, entertainment, and recreation marketing. This course focuses on the principles of management and planning supported by research, financial, and legal concepts. Students will be able to plan and execute an event; develop a career plan, and establish a sports, entertainment, and recreation product/business. Academic skills (mathematics, science, English, and history/social science) related to the content are a part of this course. Computer/technology applications supporting this course are studied.

CTE Sequence: The course above and any one of the following courses – Entrepreneurship; Marketing; Marketing Advanced; Principles of Business and Marketing; Sports, Entertainment, and Recreation Marketing

Schools offering course: 2, 3, 4, 6, 7, 9, 10, 11, 12

TECHNOLOGY AND ENGINEERING EDUCATION
All Technology Education courses will count toward meeting the one-credit “Fine Arts or Career and Technical Education” requirement for graduation.

ARCHITECTURAL DRAWING/DESIGN/CAD
Grades: 10-12
Prerequisite: Technical Drawing
Students explore architectural design foundations and increase understanding of working drawings, construction techniques, and codes regulating building design. They learn the design process and apply the elements and principles of design to architectural projects. Through producing models and illustrations of all aspects of a building, students create architectural design solutions using CAD (Computer Aided Drafting and Design).

CTE Sequence: The course above and any one of the following courses – Construction Technology; Digital Visualization; Engineering Drawing/Design/CAD; Technical Drawing

Schools offering course: All except 6, 8, 9, 99

CONSTRUCTION TECHNOLOGY
Grades: 9-12
Prerequisite: None
Students design and build scale or full-size structures and work with projects that help them understand the jobs of architects, carpenters, electricians, plumbers, surveyors, contractors, masons, design engineers, and a variety of other construction careers. They also explore aspects of the construction industry.

CTE Sequence: The course above and any one of the following courses – Architectural Drawing and Design; Production Systems

Schools offering course: 1, 3, 5, 6, 7, 10, 11, 12
ENGINEERING EXPLORATIONS I
Grades: 10-12  Credit: 1
Prerequisite: Geometry
This course provides an orientation to the careers and challenges of engineering. Students are actively involved in hands-on activities in engineering graphics, machining, fluid power, electronics, materials testing and technical drawing. Through these activities students learn to solve problems by applying math and science principles. Students communicate information through seminars, technical reports, and sharing ideas in-group activities.

CTE Sequence: The course above and any one of the following courses – Engineering Analysis and Applications II, formerly Challenges of Engineering II; Challenges of Engineering II/Robotics
Schools offering course: 1, 6

ENGINEERING EXPLORATIONS I – ROBOTICS
Grades: 10-12  Credit: 1
Prerequisite: Geometry
This course provides an orientation to the careers and challenges of engineering. Students are actively involved in hands-on activities in engineering graphics, machining, fluid power, electronics, materials testing, robotics, and computer technology. Through these activities students learn to solve problems by applying math and science principles. Students communicate information through seminars, technical reports and sharing ideas in-group activities.

CTE Sequence: The course above and any one of the following courses – Engineering Analysis and Applications II formerly Challenges of Engineering II/Robotics
Schools offering course: 3, 4, 9

ENGINEERING ANALYSIS AND APPLICATIONS II – ROBOTICS
Grades: 11-12  Credit: 1
Prerequisite: Engineering Explorations I
To learn the applications and design process of engineering, students form engineering teams and select a group design problem. Each team uses communications, graphics, mathematics, and community resources to solve problems. Each team learns appropriate information in order to complete a project. Projects may be models, systems, or products that creatively solve an engineering problem.

CTE Sequence: The course above and any one of the following courses – Engineering Analysis and Applications II formerly Challenges of Engineering I; Challenges of Engineering II/Robotics
Schools offering course: 1, 9

ENGINEERING ANALYSIS AND APPLICATIONS II
Grades: 11-12  Credit: 1
Prerequisite: Engineering Explorations I
To learn the applications and design process of engineering, students form engineering teams and select a group design problem. Each team uses communications, graphics,
GRAPHIC COMMUNICATIONS SYSTEMS
Grades: 10-12 Credit: 1
Prerequisite: None
This course provides experiences related to a wide range of tools and materials used to reproduce information and images. Several mediums are used, including paper, metal, plastic, and fabric. Students develop competencies in message design, composition and assembly, film conversion and assembly, and message transfer and product conversion.

CTE Sequence: The course above and the following course – Communications Systems
Schools offering course: 2, 3, 4, 9, 12

POWER AND TRANSPORTATION
Grades: 10-12 Credit: 1
Prerequisite: None
Students survey the many broad sources of energy and power used in power and transportation systems. Instruction in this course includes ways that energy is converted to power; power is transmitted and controlled; and power is used through mechanical, fluid, and electrical devices. Students explore career opportunities in power and transportation fields, design and build products, conduct experiments, and repair mechanical devices such as small engines.

CTE Sequence: The course above and the following course – Sustainability and Renewable Technologies
Schools offering course: 7

PRODUCTION SYSTEMS
Grades: 9-11 Credit: 1
Prerequisite: None
Students assess the relationship between production and society as they compose design portfolios, construct production prototypes, and apply automation to evaluate their solutions to technological problems.

CTE Sequence: The course above and the following course – Construction Technology
Schools offering course: 1, 4, 5, 6, 7, 10, 11, 12

SUSTAINABILITY AND RENEWABLE TECHNOLOGIES
Grades: 9-12 Credit: 1
Prerequisite: None
Sustainability and Renewable Technologies explores issues that affect global citizens in the areas of economics, culture, and the environment. The course introduces students to the historic, economic, political, environmental, and cultural issues that impact the global community and its future. Students will address issues affecting the health of our environment and explore solutions offered by sustainable agriculture, energy efficient building design, and renewable energy sources.

CTE Sequence: The course above and any one of the following courses – Business Management; Entrepreneurship; Marketing; Power and Transportation
Schools offering course: 9

TECHNICAL DRAWING
Grades: 9-12 Credit: 1
Prerequisite: None
In this foundation course, students learn the basic language of technical design, while they design, sketch, and make technical drawings, illustrations, models or prototypes of real design problems. Students develop spatial ability as they apply mathematical concepts to visual representations. The course is especially recommended for future engineering and architecture students.

CTE Sequence: The course above and any one of the following courses – Architectural Drawing/Design/CAD; Digital Visualization; Engineering Drawing/Design/CAD
Schools offering course: All except 9, 12, 99

TECHNOLOGY FOUNDATIONS
Grades: 9-12 Credit: 1
Prerequisite: None
In this beginning high school course, students acquire a foundation in technological resources including material, energy, and information and apply processes associated with the technological thinker. Challenged by laboratory activities, students create new ideas and innovations, build systems, and analyze technological products to learn further how and why technology works. The students work in groups to build and control systems using engineering design in the development of a technology.

CTE Sequence: The course above and the following course – Technical Drawing and Design
Schools offering course: See counselor for availability

VIDEO AND MEDIA TECHNOLOGY
Grades: 11-12 (Hylton HS only – grades 9-10) Credit: 1
Prerequisite: None
This course offers students an opportunity to study all aspects of video and media production, from planning and writing for production to operating studio and editing equipment. Students practice various methods of gathering news and information from individuals, research, and online resources. In addition, students are introduced to analog and digital principles of film production.

CTE Sequence: The course above and any one of the following courses – Communication Systems; Digital Visualization
Schools offering course: 4, 7, 10, 11 by application only
CIVIL ENGINEERING AND ARCHITECTURE (PLTW)
Grades: 10-12  Credit: 1
Prerequisite: Must be completing college level sequence of math and science
Students explore architectural design foundations and increase understanding of working drawings, construction techniques, and codes regulating building design. They learn the design process and apply the elements and principles of design to architectural projects. Through producing models and illustrations of all aspects of a building, students create architectural design solutions using CAD (computer aided drafting and design).

Course Sequence: The course above and any one of the following courses – Digital Electronics (PLTW); Engineering Design and Development (PLTW); Introduction to Engineering Design (PLTW); Principles of Engineering (PLTW)
Schools offering course: 3, 5, 6, 8, 9, 11, 12

DIGITAL ELECTRONICS (PLTW)
Grades: 10-12  Credit: 1
Prerequisite: Must be completing college level sequence of math and science
Digital electronics is the foundation of all modern electronic devices such as mobile phones, MP3 players, laptop computers, digital cameras, and high-definition televisions. Students are introduced to the process of combinational and sequential logic design, engineering standards, and technical documentation.

Course Sequence: The course above and any one of the following courses – Civil Engineering and Architecture (PLTW); Engineering Design and Development (PLTW); Introduction to Engineering Design (PLTW); Principles of Engineering (PLTW)
Schools offering course: 2, 3, 4, 5, 6, 8, 9, 11

ENGINEERING DESIGN AND DEVELOPMENT (PLTW)
Grade: 12  Credit: 1
Prerequisite: Must have completed at least 3 PLTW courses or have teacher approval
In this capstone course in PLTW, teams of students, guided by community mentors, work together to research, design, and construct solutions to engineering problems. Students synthesize knowledge, skills, and abilities through an authentic engineering experience. Students are expected to develop and formally present an independent-study project and a team-oriented project that are critiqued by an evaluation committee.

Course Sequence: The course above and any one of the following courses – Civil Engineering and Architecture (PLTW); Digital Electronics (PLTW); Introduction to Engineering Design (PLTW); Principles of Engineering (PLTW)
Schools offering course: 2, 4, 5, 6, 8, 9, 11, 12

INTRODUCTION TO ENGINEERING DESIGN (PLTW)
Grades: 9-12  Credit: 1
Prerequisite: Must be completing college level sequence of math and science
In this foundation course in PLTW, students use 3-D computer modeling software as they learn the engineering-design process and solve design problems for which they develop, analyze, and create project modes.

Course Sequence: The course above and any one of the following courses – Civil Engineering and Architecture (PLTW); Digital Electronics (PLTW); Engineering Design and Development (PLTW); Principles of Engineering (PLTW)
Schools offering course: 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12

PRINCIPLES OF ENGINEERING (PLTW)
Grades: 10-12  Credit: 1
Prerequisite: Must be completing college level sequence of math and science
In this foundation course in PLTW, students explore the engineering profession and the fundamental aspects of engineering problem solving. Students study the historical and current impacts of engineering on society, including ethical implications. Mathematical and scientific concepts will be applied to fundamental engineering topics, including mechanics and electrical-circuit theory.

Course Sequence: The course above and any one of the following courses – Civil Engineering and Architecture (PLTW); Digital Electronics (PLTW); Engineering Design and Development (PLTW); Introduction to Engineering Design (PLTW)
Schools offering course: 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12

SOFTWARE ENGINEERING (PLTW)
Grades: 11-12  Credit: 1
Prerequisites: None
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. Computer Software Engineering (CSE) helps students develop programming expertise and explore the workings of the Internet. Projects and problems include app development, visualization of data, cyber-security, and simulation. This course is equivalent to the AP Computer Science Principles course. Therefore, students who have taken the AP Computer Science Principles course should not enroll in this PLTW course as additional credit will not be granted.

Course Sequence: The course above and Introduction to Engineering Design (PLTW)
Schools offering course: 2, 3, 4, 6, 8, 10, 11

School Number Code:
1 – Brentsville  4 – Potomac  7 – Hylton  10 – Freedom  99 – Virtual
2 – Gar-Field  5 – Stonewall  8 – Forest Park  11 – Patriot
3 – Osbourn Park  6 – Woodbridge  9 – Battlefield  12 – Colgan
SOFTWARE ENGINEERING ESSENTIALS (PLTW)
Grades: 9-12 Credit: 1
Prerequisites: None
Students will experience the major topics, big ideas, and computational thinking practices used by computing professionals to solve problems and create value for others. This course will empower students to develop computational thinking skills while building confidence that prepares them to advance to Computer Science Principles and Computer Science A.

CTE Sequence: Software Engineering (PLTW)
Schools offering course: 6

AVIATION MAINTENANCE TECHNOLOGY I
Grades: 10-11 Credit: 1
Prerequisite: None
Students will work with airframe and control surfaces, power plants, and basic aviation electricity, and perform ground operations and servicing procedures, as specified by Federal Aviation Administration (FAA) requirements. Students will also practice lab and tool safety, apply science and mathematics principles to aviation maintenance tasks, and research and use maintenance publications, forms, and records.

CTE Sequence: Aviation Maintenance Technology II
Schools offering course: 5

AVIATION MAINTENANCE TECHNOLOGY II
Grades: 11-12 Credit: 2
Prerequisite: Aviation Maintenance Technology I
Students will explore design features of aircraft through drawings and blueprints. Students will investigate aircraft materials and processes, weight and balance procedures, and fluid lines and fittings. Additionally, students will learn care and maintenance techniques (such as how to identify and correct corrosion), practice lab and tool safety, and apply academic principles while working with aircraft.

CTE Sequence: Aviation Maintenance Technology I
Schools offering course: 5

BUILDING TRADES I
Grades: 10-11 Credit: 1
Prerequisite: None
Building Trades I prepares students to erect, install, maintain, and repair buildings, and other structures using materials such as metal, wood, stone, brick, glass, concrete and composition substances. Students focus on developing skills in core safety and the masonry, carpentry, electricity, and plumbing professions.

CTE Sequence: The course above and the following course – Building Trades II
Schools offering course: 11

BUILDING TRADES II
Grades: 11-12 Credit: 2
Prerequisite: Building Trades I
Building Trades II continues to prepare students to erect, install, maintain, and repair buildings, and other structures using materials such as metal, wood, stone, brick, glass, concrete, and composition substances. Students focus on mastering skills in core safety and the masonry, carpentry, electricity, and plumbing professions.

CTE Sequence: The course above and the following course – Building Trades I
Schools offering course: 11

TRADE & INDUSTRIAL

All Trade and Industrial courses will count toward meeting the one-credit “Fine Arts or Career and Technical Education” requirement for graduation.

AUTOMOTIVE TECHNOLOGY I
Grades: 10-11 Credit: 1
Prerequisite: None
- Students prepare for ASE Certification Exams
In this first course of the three-course program, students learn all aspects of repair, safety, and customer service.

CTE Sequence: The course above and any one of the following courses – Automotive Technology II; Automotive Technology III
Schools offering course: 3, 7

AUTOMOTIVE TECHNOLOGY II
Grades: 10-11 Credit: 2
Prerequisite: Automotive Technology I
- Students prepare for ASE Certification Exams
Students refine their knowledge and skills regarding all aspects of repair, safety, and customer service.

CTE Sequence: The course above and any one of the following courses – Automotive Technology I; Automotive Technology III
Schools offering course: 3, 7

AUTOMOTIVE TECHNOLOGY III
Grades: 11-12 Credit: 2
Prerequisite: Automotive Technology II
- Students prepare for ASE Certification Exams
In this capstone course of the three-course program, students master all aspects of repair, safety, and customer service.

CTE Sequence: The course above and any one of the following courses – Automotive Technology I, Automotive Technology II; (formerly Introduction to Automotive Technology; Automotive Technology I)
Schools offering course: 3, 7
### CABINETMAKING I
**Grades:** 10-12  
**Credit:** 1  
**Prerequisite:** None

Students learn workshop and tool safety and employability skills as they practice reading blueprints; estimating and selecting materials; cutting and shaping stock; assembling, fastening, and installing components; and finishing surfaces. The technical, problem-solving, leadership, and creative skills learned in Cabinetmaking can be applied in industries well beyond construction trades and professions and can prepare the student for lifelong learning and success.

**CTE Sequence:** The course above and the following course:  
Cabinetmaking II

Schools offering course: 7

### CABINETMAKING II
**Grades:** 11-12  
**Credit:** 1  
**Prerequisite:** Cabinetmaking I

Students continue to learn workshop and tool safety and enhance their employability skills as they interpret plans; estimate and select materials; cut and shape stock; assemble, fasten, and install components; install interior finishes; apply wood veneers and plastic laminates; finish surfaces; and transport and install cabinets. The technical, problem-solving, leadership, and creative skills learned in Cabinetmaking can be applied in industries well beyond construction trades and professions and can prepare the student for lifelong learning and success.

**CTE Sequence:** The course above and Cabinetmaking I

Schools offering course: 7

### COMPUTER NETWORKING HARDWARE OPERATIONS I
**Grade:** 11; Semester I  
**Credit:** 0.5  
**Prerequisite:** None

This course teaches students the skills needed to obtain entry-level home network installer jobs. It also helps students develop some of the skills needed to become network technicians, computer technicians, cable installers, and help-desk technicians. It provides a hands-on introduction to networking and the Internet, using tools and hardware commonly found in home and small business environments. Instructors are encouraged to facilitate field trips and outside-the-classroom learning experiences. Labs include PC installation, Internet connectivity, wireless connectivity, file and print sharing and installation of game consoles, scanners, and cameras.

**CTE Sequence:** The course above and ALL of the following courses – Computer Networking Hardware Operations II, III, IV

Schools offering course: 8, 9

### COMPUTER NETWORKING HARDWARE OPERATIONS II
**Grade:** 11; Semester II  
**Credit:** 0.5  
**Prerequisite:** Computer Networking Hardware Operations I

This course prepares students for jobs as network technicians and helps them develop additional skills required for computer technicians and help desk technicians. It provides a basic overview of routing and remote access, addressing, and security. It also familiarizes students with servers that provide email services, Web space, and authenticated access. Students learn about the soft skills required for help desk and customer service positions, and the final chapter helps them prepare for the CCENT certification exam. Network monitoring and basic troubleshooting are taught in context.

**CTE Sequence:** The course above and ALL of the following courses – Computer Networking Hardware Operations I, III, IV

Schools offering course: 8, 9

### COMPUTER NETWORKING HARDWARE OPERATIONS III
**Grade:** 12; Semester I  
**Credit:** 0.5  
**Prerequisite:** Computer Networking Hardware Operations II

This course familiarizes students with the equipment applications and protocols installed in enterprise networks, with a focus on switched networks, IP Telephone requirements, and security. It also introduces advanced routing protocols such as Enhance Interior Gateway Routing Protocol (EIGRP) and Open Shortest Path First (OSPF) Protocol. Hands-on exercises, including configuration, installation, and troubleshooting reinforce student learning.

**CTE Sequence:** The course above and ALL of the following courses – Computer Networking Hardware Operations I, II, IV

Schools offering course: 8, 9

### COMPUTER NETWORKING HARDWARE OPERATIONS IV
**Grade:** 12; Semester II  
**Credit:** 0.5  
**Prerequisite:** Computer Networking Hardware Operations III

This course introduces students to network design processes using two examples: a large stadium enterprise network and a medium-sized film company network. Students follow a standard design process to expand and upgrade each network, which includes requirements gathering, proof-of-concept, and project management. Lifecycle services, including upgrades, competitive analyses, and system integration, are presented in the context of pre-sale support. In addition to the Packet Tracer and lab exercises found in the previous courses, there are many pen-and-paper and role-playing exercises that students complete while developing their network upgrade proposals.

**CTE Sequence:** The course above and ALL of the following courses – Computer Networking Hardware Operations I, II, III

Schools offering courses: 8, 9
COSMETOLOGY I
Grade: 11 Credit: 3
Prerequisite: ADMISSION TO ALL STUDENTS BY APPLICATION
- Prepares for Licensure Exam
In this introductory course, students study hair, skin, and nails and their related care. Students are grounded in theory as they prepare to practice procedures in a clinical lab setting or classroom, using mannequins for manipulative skill practice. The first-year course emphasizes personal safety, professionalism, and sanitation of equipment and facilities. Students develop skills in shampooing and conditioning hair as well as styling and cutting hair. They also receive an introduction to manicure and pedicure procedures.

CTE Sequence: The course above and the following course – Cosmetology II
Schools offering course: 5, 6

COSMETOLOGY II
Grade: 12 Credit: 3
Prerequisite: Cosmetology I
- Students are expected to complete all state requirements and take the State Licensure exam
In this advanced course, students build on their theoretical foundation in cosmetology and increase proficiency in hair cutting and styling on live models, with attention to professionalism, client consultation, safety, and sanitation. Students are trained in safety and chemical processes related to permanent waves, relaxing, soft-curling, lightening, and coloring hair. They also develop artistic skills with artificial hair. In addition, students learn to care for skin, hands, and feet, developing expertise in providing facials, manicures, and pedicures. A business management unit focuses on managing the salon. Competency completions prepare the student for the Virginia state-licensing exam.

CTE Sequence: The course above and the following course – Cosmetology I
Schools offering course: 5, 6

CRIMINAL JUSTICE I
Grades: 11-12 Credit: 1
Prerequisite: None
Students will learn principles, techniques, and practices for pursuing careers within security and the criminal justice services system.

CTE Sequence: The course above and the following course – Criminal Justice II
Schools offering course: 2, 4, 7, 9, 10, 12

CRIMINAL JUSTICE II
Grade: 12 Credit: 1
Prerequisite: Criminal Justice I
Students will learn principles, techniques, and practices for pursuing careers within security and the criminal justice services system.

CTE Sequence: Criminal Justice I
Schools offering course: 2, 4, 7, 9, 10, 12

CYBERSECURITY NETWORK SYSTEMS
Grade: 12 Credit: 1
Prerequisite: Computer Network Hardware Operations IV, Advanced Cybersecurity Systems Technology
This course prepares students for postsecondary education and careers in the rapidly growing field of cybersecurity. Students will gain competitive skills required to administer, analyze, and secure applications, networks, and devices. Students perform threat analysis and participate in risk mitigation. Concepts include understanding threats, attacks, and vulnerabilities; exploring technology and tools; examining architecture and design; analyzing identity and access management; demonstrating risk management; and examining cryptography and public key management. Upon successful completion of this course, students may qualify for the CompTIA Security+ certification exam.

CTE Sequence: Student will have already completed a CTE sequence based on the prerequisite above.
Schools offering course: 4, 8, 9, 10, 11

CYBERSECURITY SYSTEMS TECHNOLOGY
Grades: 10-12 Credit: 1
Prerequisite: None
Students enter the world of computer technology and gain practical experience in assembling a computer system. Students will install, configure, and secure various operating systems. Students will troubleshoot computers and peripherals and use system tools and diagnostic software. They develop skills in computer networking and resource sharing. In addition, students explore the relationships between internal and external computer components. Upon successful completion of the course, students may qualify to take the CompTIA A+ certification exam.

CTE Sequence: Cybersecurity Systems Technology, Advanced
Schools offering course: 4, 8, 10

CYBERSECURITY SYSTEMS TECHNOLOGY, ADVANCED
Grades: 11-12 Credit: 1
Prerequisite: Cybersecurity Systems Technology
This advanced course provides students with training in procedures for optimizing and troubleshooting concepts for computer systems, subsystems, and networks. Students will gain a basic understanding of emerging technologies including unified communications, mobile, cloud, and virtualization technologies. The course prepares students for postsecondary education and training and a successful career in information technology.

CTE Sequence: Cybersecurity Systems Technology
Schools offering course: 4, 8, 10

ELECTRICITY I
Grades: 10-12 Credit: 1
Prerequisite: None
This course provides students with marketable, job-specific skills, workplace readiness skills, and an industry certification upon high school graduation. Students develop skills in the installation, operation, maintenance, and repair of residential,
commercial, and industrial electrical systems. They also study electrical theory, navigate the National Electrical Code Book, select and install conductors, and work with panelboards, switchboards, and generators. Students have the option to enter the job market directly or continue their studies via a college program, technical school, or apprenticeship program. Students completing the two-year electrical sequence also have the opportunity to demonstrate workplace readiness skills through an industry assessment.

**GAME DESIGN AND DEVELOPMENT**

**Grades:** 10-12  
**Credit:** 1  
**Prerequisite:** None  
**Schools offering course:** 2

The game design industry is the fastest revenue growing entertainment medium and has created many new job disciplines. In this project-based course, students will create innovative games through the application of graphic design, animation, audio, and writing skills. Students will work in teams while developing problem-solving, critical thinking, and effective communication skills. They will analyze, design, prototype, and critique interactive games within a project management environment. Career opportunities across multiple industries, including the entertainment and educational arenas, will be explored.

**CTE Sequence:** This course and Game Design and Development.

**Schools offering course:** 6, 8, 10, 11, 12
PLUMBING I
Grades: 10-12 Credit: 1
Prerequisite: None

Plumbing I students learn to safely assemble, install, and repair pipes, fittings, and fixtures of heating, water, and drainage systems, according to specification and plumbing codes, with marketable job-specific skills, workplace readiness skills, and an industry certification upon high school graduation. Students completing the two-year plumbing sequence also have the opportunity to demonstrate workplace readiness skills through an industry assessment.

**CTE Sequence:** Plumbing II

Schools offering course: 2

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PLUMBING II
Grades: 11-12 Credit: 2
Prerequisite: Plumbing I

Students continue to learn to safely assemble, install, and repair pipes, fittings, and fixtures of heating, water, and drainage systems, according to specification and plumbing codes. Students completing the two-year plumbing sequence have the opportunity to demonstrate workplace readiness skills through an industry assessment.

**CTE Sequence:** The course above and the following course - Plumbing I

Schools offering course: 2

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TELEVISION PRODUCTION I
Grades: 10-11 Credit: 1
Prerequisite: ADMISSION TO ALL STUDENTS BY APPLICATION

Students will learn how to think and work like media producers by engaging in hands-on production projects. Students will also gain proficiency with the media production process while using industry-standard tools. They will explore jobs and careers in the dynamic and growing industry of television and media production and understand the impact of media and its function as entertainment, persuasion, information, and instruction.

**CTE Sequence:** The course above and any one of the following courses – Television Production II; Television Production III

Schools offering course: 7

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TELEVISION PRODUCTION II
Grades: 11-12 Credit: 2
Prerequisite: Television Production I

Students will become media producers as they take real-world projects from conception to production. They will continue to develop and master skills that are essential to the industry as they function in various professional roles. In addition, the students will gain both breadth and depth in their abilities with the sophisticated tools and equipment involved in professional media production. They will develop an increased understanding of post-secondary and career pathways and will develop plans and portfolios to help them achieve their goals.

**CTE Sequence:** Television Production I; Television Production III

Schools offering course: 7

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TELEVISION PRODUCTION III – PRACTICUM
Grade: 12 Credit: 1
Prerequisite: Television Production II

Students will demonstrate mastery of media production knowledge and skills. They will function as media producers by creating original productions as they develop and market programs for target audiences. Students will assemble a professional digital portfolio to advance post-secondary and career goals. They will investigate the dynamic media production industry and identify opportunities for real-world experiences (e.g. internship, job shadowing). Students will research post-secondary opportunities and formulate strategies for both college and career success.

**CTE Sequence:** Television Production I; Television Production II

Schools offering course: 7

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WELDING I
Grades: 10-12 Credit: 2
Prerequisite: None

Welding is required by a wide variety of industries, anywhere fusible materials and high heat are needed to manufacture, repair, or alter tools and products. Professional welders are in high demand and can earn accordingly. Students in Welding I use manual welding, cutting, and electric arc welding processes to fabricate and weld metal parts according to diagrams, blueprints, and specifications. Students will also receive safety-related practices and techniques.

**CTE Sequence:** Welding II; Welding III

Schools offering course: 4

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WELDING II
Grades: 11-12 Credit: 2
Prerequisite: Welding I

This course teaches advanced welding students to fine-tune their craft and to perform V-groove welds in all positions, using multiple welding processes. Students prepare to pass relevant industry certification. Welding is required by a wide variety of industries, anywhere fusible materials and high heat are needed to manufacture, repair, or alter products. Professional welders are in high-demand and can earn accordingly.

**CTE Sequence:** The course above and any one of the following courses – Welding I; Welding III

Schools offering course: 4

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WELDING III
Grade: 12 Credit: 2
Prerequisite: Welding II

This capstone course in welding teaches the industry’s emerging technologies, including exotic metals and their applications, and how to master gas tungsten arc welding (GTAW) and shielded metal arc welding (SMAW) pipe tests. Students are prepared to earn relevant industry credentials toward employment in production or manufacturing facilities.

**CTE Sequence:** The course above and any one of the following courses – Welding I; Welding II

Schools offering course: 4
<table>
<thead>
<tr>
<th>PWCS CTE Course</th>
<th>Course Number</th>
<th>HS Credits</th>
<th>Post-Secondary Institution</th>
<th>Post-Secondary Course Name</th>
<th>Post-Secondary Course Number</th>
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<td>Network Fundamentals I: CISCO I</td>
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<td>Network Security Basics AND Introduction to Telecommunications</td>
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<td>Cybersecurity Systems Technology</td>
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<td>Intro to Computer Applications and Concepts AND Personal Computer Hardware &amp; Troubleshooting</td>
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<td>Survey of Criminal Justice</td>
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<td>Early Childhood Education and Services I</td>
<td>8285</td>
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<td>NVCC</td>
<td>Intro to Early Childhood Education AND Teaching Art, Music, and Movement to Children</td>
<td>CHD 120 CHD 145</td>
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<td>Early Childhood Education and Services II</td>
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<td>Observation &amp; Participation in ECE</td>
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<td>Intro to Computer Applications and Concepts AND Software Design</td>
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<td>Intro to Welding AND Arc Welding AND Welding II (Electric Arc)</td>
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<td>Inert Gas Welding AND Semi-Automatic Welding Processes</td>
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<td>Welding III</td>
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<td>Welding Drawing and Interpretation</td>
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<td>Teachers for Tomorrow</td>
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</table>

Note: Battlefield High School students please see your counselor for dual enrollment details.
REQUIRED COURSE SEQUENCE FOR ENGLISH

ENGLISH 9
Grade: 9
Credit: 1
Prerequisite: Successful completion of Grade 8
Students analyze the elements of short story, drama, poetry, autobiography, biography, mythology, epic, and nonfiction, and develop an independent reading program. They compose narrative, literary, expository, and technical writings. Each unit of literary study involves increasingly complex texts, with an emphasis placed on the development of written and oral communication. Grammar instruction includes sentence formation, usage, and mechanics; and students develop vocabulary skills through a variety of methods. The skills of using the information management process are used to create a research paper.

Schools offering course: All

ENGLISH 10
Grade: 10
Credit: 1
Prerequisite: Successful completion of English 9
Students analyze novels, poetry, essays, editorials, science fiction, and non-fiction from a variety of eras and cultures. Students also develop vocabulary and oral communication skills, use the information management process, and study grammar. Grammar instruction emphasizes sentence formation, usage, and mechanics. Compositions in the narrative, expository, analytical, technical, and persuasive modes reinforce skills from the grammar and literature studies. Students develop reading strategies in increasingly complex texts as well as review and expand research skills through completion of a documented paper. Students develop an independent reading program.

Schools offering course: All

ENGLISH 11
Grade: 11
Credit: 1
Prerequisite: Successful completion of English 10
Students critically analyze and evaluate relationships among British literature, history and other cultures. Analysis of literary themes, movements and genres, vocabulary development, application of the information management process, the study of grammar, and oral communication skills are incorporated into this course. Through writing narrative, analytical, expository, technical, and persuasive compositions, students reinforce skills studied in the grammar and literature studies. Students develop an independent reading program. Students practice independent research skills through the completion of documented papers.

Schools offering course: All

ENGLISH 12
Grade: 12
Credit: 1
Prerequisite: Successful completion of English 11
Students critically analyze and evaluate relationships among British literature, history and other cultures. Analysis of literary themes, movements and genres, vocabulary development, application of the information management process, the study of grammar, and oral communication skills are incorporated into this course. Through writing narrative, analytical, expository, technical, and persuasive compositions, students reinforce skills studied in the grammar and literature studies. Students develop an independent reading program. Students practice independent research skills through the completion of documented papers.

Schools offering course: All

ADVANCED PLACEMENT COURSE SEQUENCE

PRE-AP ENGLISH 9
Grade: 9
Credit: 1
Prerequisite: Successful completion of Grade 8
Pre-AP English 9 focuses on the close reading, analytical writing, and language skills that have immediate relevance for students and that will be essential for their future coursework. Texts take center stage in the Pre-AP English 9 classroom, where students engage in close, critical reading of a wide range of literary and nonfiction works. The course teaches the reader to observe the small details within a text to arrive at a deeper understanding of the whole. It also teaches the writer to focus on crafting complex sentences as the foundation for writing to facilitate complex thinking and communicate ideas clearly. This course is an integral component of the multidisciplinary program of studies established for the Biotechnology Center (BIOTECH), Center for Environmental and Natural Sciences (CENS), Center for the Fine and Performing Arts (CFPA), Center for International Studies and Languages (CISL). For additional information, refer to the description of these programs in the specialty program section. This course meets all objectives in the English 9 Standards of Learning.

Schools offering course: 3, 6, 7, 8, 9, 10, 11, 12

PRE-AP ENGLISH 10
Grade: 10
Credit: 1
Prerequisite: Successful completion of Pre-AP 9
Pre-AP English 10 spotlights the recursive moves that matter in preparing students for the demands of college and career ready reading and writing. This course builds upon the foundational routines of close observation, critical analysis, and appreciation of author’s craft learned in Pre-AP English 9. As readers, students develop an awareness of how poets, playwrights, novelists, and writers of nonfiction manipulate language to serve their unique purposes. As writers, students compose more nuanced essays without losing sight of the importance of well-crafted sentences and a sense of cohesion.
This course is an integral component of the multidisciplinary program of studies established for the Biotechnology Center (BIOTECH), Center for Environmental and Natural Sciences (CENS), Center for the Fine and Performing Arts (CFPA), Center for International Studies and Languages (CISL). For additional information, refer to the description of these programs in the specialty program section. This course meets all of the objectives for the English 10 Standards of Learning.

Schools offering course: 3, 6, 7, 8, 9, 10, 11, 12

**ADVANCED PLACEMENT ENGLISH LANGUAGE AND COMPOSITION**

**Grade: 11**  
**Credit: 1**

**Prerequisite: Successful completion of Pre-AP English 10 or a grade of B or better in English 10, student interest in advanced study, and teacher recommendation**

This course in advanced language, literature, and composition is designed for the student who desires the challenge of an advanced English class. Students are expected to master all English 11 performance indicators of the curriculum guide and complete a study of American literature. Critical, analytical, and creative writing is required. In May, the students take an exam to qualify for advanced standing in college and/or college credit.

Schools offering course: 3, 4, 6, 7, 8, 9, 10, 11, 12

**ADVANCED PLACEMENT LITERATURE AND COMPOSITION**

**Grade: 12**  
**Credit: 1**

**Prerequisite: Successful completion of AP English 11 or English 11 with grade of B or better, student interest in advanced study, and teacher recommendation**

Advanced Placement English Literature and Composition is a senior-level course designed for the student who desires the challenge of an advanced English class. Students are expected to master all English 12 performance indicators of the curriculum guide and complete a study of world literature. Critical, analytical, and creative writing will be required. Specific problems that occur in students’ work will generate the study of grammar and advanced composition skills. In May, the students take an exam to qualify for advanced standing in college and/or college credit.

Schools offering course: 3, 4, 6, 7, 8, 9, 10, 11, 12

**IGCSE ENGLISH 9**

**Grade: 9**  
**Credit: 1**

**Prerequisite: Successful completion of Grade 8 with a grade of B or better and interest in advanced study**

Students study a variety of literature to develop an awareness of the relationship between life and literary experience while completing all objectives of grade 9. Writing frequently for varied purposes, students develop critical thinking skills in analyzing and evaluating. Modified Oxford debates help develop oral skills. Vocabulary is increased through a study of Greek and Latin roots. Several independent research projects, large and small group participation, required outside reading, and a study of persuasion in the media are all part of this course.

Schools offering course: 1, 4

**IGCSE ENGLISH 10**

**Grade: 10**  
**Credit: 1**

**Prerequisite: Successful completion of IGCSE English 9 or English 9 with a grade of B or better, student interest in advanced study, and teacher recommendation**

Students analyze a variety of genres to understand the structural elements and the relationship of those elements to the meaning of the work and its literary tradition. Through frequent personal and literary writing, students study the principal essay forms of narrative, descriptive, expository, persuasive, and documented essays. Students increase vocabulary, evaluate critically, write and speak persuasively and responsibly, as well as present dramatic material effectively. Assessment will include an external student examination.

Schools offering course: 1, 4

**AICE ENGLISH LANGUAGE AND COMPOSITION (AS)**

**Grade: 11**  
**Credit: 1**

**Prerequisite: Successful completion of IGCSE English 10 or English 10 with a grade of B or better, student interest in advanced study, and teacher recommendation**

AICE English Language and Composition is an advanced language and composition course which meets all the objectives for English 11 and employs an international curriculum. Focusing on reading and writing from a wide variety of genres, styles, and contexts, students respond in critical and detailed analysis through directed writing, oral presentations, and group discussion. Students meet the requirements for an Advanced International Certificate of Education Diploma and Advanced Placement English Language and Composition credit with possible college credit through successful completion of external assessments.

Schools offering course: 1, 4

**AICE ENGLISH LITERATURE (AS)**

**Grade: 12**  
**Credit: 1**

**Prerequisite: Successful completion of AICE English Language and Composition or English 11 with a grade of B or better, student interest in advanced study, and teacher recommendation**

Students in AICE English Literature, while meeting all the objectives for English 12, follow an accelerated, international curriculum. They read a wide variety of texts from a broad range of cultures and literary periods. Students write both personal and formal literary responses to literature, practicing their skills of logical, critical analysis. Oral skills are honed in group and individual presentations and discussions. Students meet the requirements of an Advanced International Certificate of Education Diploma and Advanced Placement English Literature and Composition credit with possible college credit through successful completion of external assessments.

Schools offering course: 1, 4
**AICE ENGLISH LITERATURE A LEVEL**
Grade: 12  
Credit: 1  
Prerequisites: Successful completion of AICE English Language and Composition with a B or better, student interest in advanced study, and teacher recommendations

Students in AICE English Literature A Level, while meeting all objectives for English 12, follow an accelerated, international curriculum. They study a range of texts in the three main forms of literature: prose, poetry, and drama. A variety of texts are offered from a wide range of different periods and cultures. Students enhance their reading skills and expand their ability to analyze text. Diverse reading material assists students in their comprehension of the work of various authors and expedites their ability to speak coherently about all forms of literature. Students meet the requirements of an Advanced International Certificate of Education (AICE) with possible college credit through successful completion of external assessments.

Schools offering course: 1, 4

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**IB ENGLISH I LITERATURE (HL)**
Grade: 11  
Credit: 1  
Prerequisite: Successful completion of Adv-MYP English 10 or a grade of B or better in English 10, student interest in advanced study, and teacher recommendation

While meeting all the objectives for English 11, students follow an accelerated, internationally based curriculum. IB English I is part one of a two year program in which students develop a knowledge of the literature and culture of both the United States and other countries. Reading from a variety of genres and texts, students develop and practice detailed and critical analysis in oral and written forms. Students produce one essay that is externally assessed by the IB Organization and one oral presentation that is internally assessed. In addition to these assessments, students will be required to complete additional assessments in IB English II to meet the requirements for a Higher Level IB Diploma or Certificate.

Schools offering course: 2, 5

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**IB ENGLISH II LITERATURE (HL)**
Grade: 12  
Credit: 1  
Prerequisite: Successful completion of IB English I with a grade of C or better

The students in IB English II, while meeting all the objectives for English 12, complete the second year of the accelerated internationally based curriculum begun in IB English I. Students refine their skills in structuring ideas and argumentation in a logical, persuasive, and sustained manner in both oral and written work. Students engage in independent literary criticism of major works of literature through detailed study, supporting their ideas with precise and relevant examples. In addition to the assessments completed in IB English I, successful completion of an internally assessed oral exam, and two externally assessed written exams meet the requirements for a Higher Level IB Diploma or Certificate and may qualify for advanced standing in college and/or college credit.

Schools offering course: 2, 5

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**IB ENGLISH II (SL)**
Grade: 12  
Credit: 1  
Prerequisite: Successful completion of IB English I or grade of B or better in English 11, student interest in advanced study, and teacher recommendation

While completing all the requirements of English 12, IB English II, Standard Level, students work at a more accelerated pace learning to approach literature in an independent manner, expressing their ideas with precision, fluency, and clarity. Students develop an ability to comment on major works of literature and structure their writing in a logical and sustained manner. Successful completion of one externally assessed paper and an exam, as well as an internally assessed oral exam, meets the requirement for a IB Diploma or Certificate and may qualify for advanced standing in college and/or college credit.

Schools offering course: 2, 5

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**ADVANCED MIDDLE YEARS PROGRAMME ENGLISH 9**
Grade: 9  
Credit: 1  
Prerequisite: Successful completion of Grade 8 and interest in advanced study

Adv-MYP English 9 prepares students planning to enroll in the IB Sequence of English classes. Students will complete all objectives of English 9 in an accelerated program. Students expand speaking skills by creating presentations from group and individual research. In class studies, emphasis is placed on the reading and analysis of complex texts, and independent reading is expected. Students develop both grammar and vocabulary skills in conjunction with frequent writing in all expository modes. Development of critical analysis and support in thinking and writing are emphasized. This course will incorporate the MYP global contexts, strategies, and assessments.

Schools offering course: 2, 5

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**ADVANCED MIDDLE YEARS PROGRAMME ENGLISH 10**
Grade: 10  
Credit: 1  
Prerequisite: Successful completion of Adv-MYP English 9 or a grade of B or better in English 9, student interest in advanced study, and teacher recommendation

Adv-MYP English 10 prepares students planning to enroll in IB English courses in Grades 11 and 12. Students will complete all English 10 objectives through an accelerated program using challenging in-depth readings. Grammar and vocabulary studies are structured to support reading and writing levels. Oral skills are honed in group and individual presentations and discussions. Formal writings are evaluated for close analysis, elaboration of details, and fluid articulation of ideas. This course will incorporate the MYP global contexts, strategies, and assessments.

Schools offering course: 2, 5

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**IB COURSE SEQUENCE**

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**ADVANCED MIDDLE YEARS PROGRAMME**

**INTRODUCTION TO SPEECH COMMUNICATION**

**Grades:** 10-12  
**Credit:** 1  
**Prerequisite:** None

The Adv-MYP Introduction to Speech Communication is a sequential program designed to continue the development of each student as a speaker. Students develop their speaking skills, as well as learn the dynamics of speech and the categories of speech (forensics) competition. Students participate in the creative processes of oral interpretation. This course will incorporate the MYP global contexts, strategies, and assessments.

Schools offering course: 1, 2, 6

**DUAL ENROLLMENT COURSES**

**DUAL ENROLLMENT AN INTRODUCTION TO SPEECH COMMUNICATIONS**

Both CST 100 and CST 110 must be taken to earn credit for Introduction to Speech Communications.

Most colleges and universities require students to take a course in oral communication to earn a degree. Taking the Introduction to Communication course and the Principles of Public Speaking course satisfies that requirement at most schools and gives students an elective credit as well.

CST 100, Principles of Public Speaking, applies theory and principles of public address with emphasis on preparation and delivery. Students spend the semester focusing on how to become proficient at preparing and presenting speeches in public.

CST 110, Introduction to Communication, examines the elements affecting speech communication at the individual, small group, and public communication levels with emphasis on practice of communication at each level. Students focus on how to effectively communicate with others in various situations including interviews, small groups, and speeches.

Schools offering course: 10

**SOL DUAL ENROLLMENT COLLEGE COMPOSITION 11**

**Grades:** 11  
**Prerequisite:** Successful completion of English 10

Both ENG 111 and ENG 112 must be taken to earn credit for English 11. At the completion of this course students will take the English SOL exams. The course will be supplemented to support preparation for the SOL tests.

ENG 111, College Composition I, is a fall semester course that is designed to prepare students for various types of college level writing. The three main goals of the course are to instruct students in the Process of Writing, Expository and Argumentative Writing, and Critical Thinking and Research. Students need a C or better at the end of the first semester to enroll in the second semester course. Students that do not have a C or better will be moved to a non-college level course to satisfy English 11 and SOL requirements.

ENG 112, College Composition II, is a spring semester course that continues to prepare students for various types of college level writing focusing on critical essays and argumentation. Students will read, study, research, and respond to a variety of literary texts reflecting the human experience. The four main goals of the course are to instruct students in the Process of Writing, Critical Thinking and Writing, Argument, and Research.

Schools offering course: 1, 4, 6, 7, 8, 9, 10, 11, 12

**DUAL ENROLLMENT COLLEGE COMPOSITION 12**

**Grades:** 12  
**Prerequisite:** Successful completion of English 11

Both ENG 111 and ENG 112 must both be taken to earn credit for English 12.

ENG 111, College Composition I, is a fall semester course that is designed to prepare students for various types of college level writing. The three main goals of the course are to instruct students in the Process of Writing, Expository and Argumentative Writing, and Critical Thinking and Research. Students need a C or better at the end of the first semester to enroll in the second semester course. Students that do not have a C or better will be moved to a non-college level course to satisfy English 12.

ENG 112, College Composition II, is a spring semester course that continues to prepare students for various types of college level writing focusing on critical essays and argumentation. Students will read, study, research, and respond to a variety of literary texts reflecting the human experience. The four main goals of the course are to instruct students in the Process of Writing, Critical Thinking and Writing, Argument, and Research.

Schools offering course: 1, 4, 6, 7, 8, 9, 10, 11, 12

**DUAL ENROLLMENT SURVEY OF WORLD LITERATURE 12**

**Grades:** 12  
**Prerequisite:** Successful completion of SOL Dual Enrollment English Composition 11

Both ENG 251 and ENG 252 must be taken to earn credit for English 12.

ENG 251, Survey of World Literature I, is a fall semester course that is designed to introduce students to selected major works that represent the development of world literature from about 1650 to present. The four main goals of this course are to increase knowledge of historical movements, enhance critical thinking skills via literary study, develop greater proficiency in written and oral expression, and understand social differences in values and education.

ENG 252, Survey of World Literature II, is a Spring semester course that is designed to introduce students to selected major works that represent the development of world literature from the ancient world to about 1650. The four main goals of this course are to increase knowledge of historical movements, enhance critical thinking skills via literary study, develop greater proficiency in written and oral expression, and understand social differences and values in education.

Schools offering course: 1, 4, 6, 7, 8, 9, 10, 11, 12
ENGLISH ELECTIVE COURSES

CREATIVE WRITING I
Grades: 11-12 and 10 with Permission
Prerequisite: Successful mastery of Grade 9 and Grade 10
Language Arts objectives
Students write and revise extensively to develop voice and style as experiment with a variety of subjects, genres, techniques, purposes, and audiences producing polished writing in fiction, non-fiction, poetry, and drama. Students will submit their work for publication in the school's literary magazine.
Schools offering course: All except 5, 12

CREATIVE WRITING II
Grades: 11-12
Prerequisite: Successful completion of Creative Writing I
Students who have completed the first level of Creative Writing refine their skills in writing and revising to further develop their style. They examine the composing processes of professional writers and participate in the process of producing a literary magazine.
Schools offering course: 1, 2, 3, 4, 6, 7, 8, 9, 11

JOURNALISM I
Grades: 9-12
Prerequisite: Successful completion of previous English courses and teacher recommendation
To develop basic skills in journalism, students study and write news, feature, sports, editorial, and other forms of journalistic articles. They study interviewing, various types of research, legal rights and responsibilities, page design, photography, desktop publishing and advertising. They produce articles for publication in the mass media.
Schools offering course: All except 8

JOURNALISM II
Grades: 10-12
Prerequisite: Successful completion of Journalism I and journalism teacher recommendation
Students produce a news publication. Working cooperatively, students apply skills and techniques learned in Journalism I.
Schools offering course: All except 8

JOURNALISM III
Grades: 11-12
Prerequisite: Journalism II
Students learn editorial leadership, develop a sense of professionalism, understand the role of the newspaper in our society, and develop more fully as productive members of the publication staff. Students serve as leaders, mentors, and peer tutors. They may also represent the newspaper staff in the community by writing for the professional press in stringer or internship positions, and/or serve as tutors in neighboring middle schools.
Schools offering course: 1, 2, 3, 4, 7, 9, 10, 11, 12

PHOTO JOURNALISM – YEARBOOK
Grades: 9-12
Prerequisite: Yearbook staff assignment, Journalism I
Students learn various aspects of publication while assisting in the production of the high school yearbook. Students participate in each step of production from planning the ladder diagram to distribution of the completed publication. This course may be taken more than once for credit.
Schools offering course: All

AN INTRODUCTION TO SPEECH COMMUNICATION
Grades: 9-12
Prerequisite: None
Students develop their speaking skills, as well as learn the dynamics of speech and the categories of speech (forensics) competition. Students participate in the creative processes of oral interpretation.
Schools offering course: All except 5, 9, 8

ENRICHMENT IN SPEECH COMMUNICATION
Grades: 10-12
Prerequisite: An Introduction to Speech Communication
Students reinforce, refine, and expand the speaking skills learned in An Introduction to Speech Communication. They further develop their abilities to compete in intra-scholastic contests in Forensics, Student Congress, Lincoln Douglas, and Policy Debate.
Schools offering course: 2, 3, 4, 10, 12

GLOBAL CONNECTIONS IN MULTICULTURAL LITERATURE
Grades: 11-12
Prerequisite: Teacher recommendation
Global Connections in Multicultural Literature is a junior/senior enrichment course designed to immerse students in the lifestyles, cultures, traditions, and experiences of various ethnic groups within American culture through the study of representative literature, field trips, speakers, and projects. Students broaden their understanding of multicultural literature by drawing upon personal experiences, discussions, and presentations as they expand their understanding of America's diverse and changing society.
Schools offering course: 7, 8, 10

PSAT – SAT VERBAL-MATH PREPARATION CLASS
Grades: 10-12
Prerequisite: English 9, Algebra I and Geometry
Students study and practice the skills necessary for improving scores on the PSAT/SAT tests.
Schools offering course: 4
READING IMPROVEMENT
Grades: 9-12
Credit: 1
Prerequisite: Students reading two to four years below grade level
Students develop and reinforce basic reading and study skills. They learn techniques applicable to content reading and they develop word analysis and comprehension skills.
Schools offering course: All

ENGLISH 9 SEMINAR
Grade: 9
Credit: 1
Prerequisite: Assigned based on SOL Language Arts scores
Students who did not pass the 8th grade language arts SOLs or are two or more years below grade level in reading are required to participate in this remedial program which does not replace English 9. Students work intensely with reading comprehension strategies and the writing domains in a small class setting. An opportunity to retake the 8th grade SOLs is offered in the spring.
Schools offering course: 1, 2, 3, 4, 7, 10

ADVANCED GENRE FOCUS – SCRIPT WRITING AND CREATIVE NONFICTION
Grades: 10-12
Credit: 1
Pre-Requisites: C or better in Creative Writing Exploration
Students will explore the composing processes of professional writers; view, analyze, and critique classic and contemporary plays, films, and broadcasts for dramatic structure; write for live theater and screen; study different types of creative nonfiction writing; write original works focusing on the development of voice, style, and tone.
Schools offering course: 12

ADVANCED GENRE FOCUS – POETRY AND FICTION
Grades: 10-12
Credit: 1
Pre-Requisites: C or better in Creative Writing Exploration
Students will extend their study of classic and contemporary fiction writers and poets; read, analyze, and respond to craft essays on fiction and poetry writing; write original works focusing on the development of characterization, plot structure, story frames, point of view, dialogue, style, voice, sensory imagery, and figurative language.
Schools offering course: 12

ADVANCED GENRE FOCUS – WRITING FOR PUBLICATION
Grades: 10-12
Credit: 1
Pre-Requisites: C or better in Creative Writing Exploration
Students contribute to the production of literary magazines and publications which includes elements of graphic arts, marketing, and business management. Priority enrollment will be given to CFPA creative writing students. This course may be repeated for credit. CFPA students from other disciplines may request to waive the pre-requisite with special permission from the course instructor.
Schools offering course: 12

ADVANCED CREATIVE WRITING WORKSHOP AND SEMINAR
Grade: 12
Credit: 1
Pre-Requisites: Must be in the CFPA program, earned a “C” or better in Creative Writing Exploration, and “Cs” or better in two other Advanced Genre Focus courses.
In this capstone course, advanced creative writing students will work on written pieces of their choice, in genres of their choosing, under the guidance of an instructor.
Schools offering course: 12

CENTER FOR FINE AND PERFORMING ARTS CREATIVE WRITING PROGRAM

CREATIVE WRITING
Students accepted into the Center for Fine and Performing Arts Creative Writing program begin their journey with the Creative Writing Exploration course which introduces writing techniques and provides an overview of genres offered for further in-depth study. Students will then take two Advanced Genre Focus courses of their choice as pre-requisites for the Advanced Creative Writing Senior Workshop and Seminar course.
All CFPA Creative Writing courses are designed to support burgeoning writers in their craft, and facilitate access to a variety of platforms to showcase their work. Coursework will focus on craft, process, and the major traditions within fiction, poetry, screenwriting, and creative nonfiction. Instructors will engage students in a variety of writing experiences: classes, workshops, conferences, readings, and collaborations with other arts and disciplines. Priority enrollment in these courses will be given to CFPA Creative Writing students and open to others on a case by case basis if space is available.

CREATIVE WRITING EXPLORATION
Grades: 9-12
Credit: 1
Pre-Requisites: none
Students read, analyze, and write in a variety of genres, learn and collaborate with other writers as they explore writing techniques and the writing process to develop polished pieces in fiction, creative nonfiction, poetry, and scriptwriting.
Schools offering course: 12
ENGLISH LEARNER (EL) PROGRAMS

Graduation requirements are located in the “General Information” section.

ENGLISH LEARNER DEVELOPMENT (ELD) AND SHELTERED INSTRUCTION (SI) COURSES

ENGLISH FOR ACADEMIC PURPOSES
Grade: 9 Credit: 1
This optional language development course promotes emerging print literacy while building content knowledge and skills for the language arts standards of learning for English 9. Students use English for purposeful reading, writing, speaking and listening tasks essential to foundations of literacy. Students enrolled in this course generally take English 9 the following year. Note: One ELD course may be used to award 1 English credit.

Schools offering course: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

ENGLISH LANGUAGE DEVELOPMENT (ELD) FOR ENGLISH 9
Grades: 9-10 Credit: 1
This optional course is aligned to the WIDA ELD Standard for language arts and the VA English 9 Standards of Learning. Course content aligns to the units of instruction for English 9. Students examine various literary genres with linguistically appropriate texts and engage in narrative, expository, and persuasive writing. Accelerating English development with increased fluency is emphasized as students read and respond in English for academic purposes. Students enrolled in this course generally take it concurrently with an English 9 course that does not carry the SI designation, or it may precede enrollment in English 9 when following the English 9, 10, 11 sequence. Note: One ELD course may be used to award 1 English credit.

Schools offering course: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

ENGLISH LANGUAGE DEVELOPMENT (ELD) FOR ENGLISH 10
Grades: 9-11 Credit: 1
This course is aligned to the WIDA ELD Standard for language arts and the VA English 10 Standards of Learning. Course content aligns to the units of instruction for English 10. Students read and analyze literary and nonfiction texts, exploring the characteristics of different forms and techniques authors use to achieve their intended purpose. Students follow the writing process (pre-write, draft, revise, publish). This course is offered as an option for concurrent enrollment in an English 10 course that does not carry the SI designation. Note: One ELD course may be used to award 1 English credit.

Schools offering course: All except 2

ENGLISH LANGUAGE DEVELOPMENT (ELD) FOR ENGLISH 11
Grades: 10-12 Credit: 1
This course is aligned to the WIDA ELD Standard for language arts and the VA English 11 Standards of Learning. Course content aligns to the units of instruction for English 11. Students refine reading, writing, research, and linguistic skills while engaging with a variety of genres, and styles. Students increase academic literacies and expressive academic responses reflecting skill in oracy and writing as a form of art. This course is offered as an option for concurrent enrollment in an English 11 course without the SI designation. Note: One ELD course may be used to award 1 English credit.

Schools offering course: All except 2

ALGEBRA READINESS
Grade: 9 Credit: 1
This course prepares students for enrollment in Algebra I in the following year as they develop academic literacy. The WIDA ELD Standard for the language of mathematics supports the VA standards of learning for mathematics. Students will focus on number, number sense, computation, estimation, patterns, functions, and algebra. An elective credit is earned for successful completion of this course. Students generally take the Algebra sequence starting the following year.

Schools offering course: 3, 5, 7, 8, 9, 11

SURVEY OF WORLD HISTORY
Grade: 9 Credit: 1
This course promotes academic literacy in world history content in preparation for enrollment in World History I. The WIDA ELD Standard for the language of social studies supports the VA standards of learning for history and social sciences. Students read authentic non-fiction texts and share understandings both orally and in written forms which include long answer and paragraph responses. An elective credit is earned for successful completion of this course which generally carries an ELD designation. Students at English language proficiency level 1 enrolled in this course generally take World History the following year.

Schools offering course: See counselor for availability

School Number Code:
1 – Brentsville 4 – Potomac 7 – Hylton 10 – Freedom 99 – Virtual
2 – Gar-Field 5 – Stonewall 8 – Forest Park 11 – Patriot
3 – Osbourn Park 6 – Woodbridge 9 – Battlefield 12 – Colgan
GENERAL SCIENCE
Grade: 9 Credit: 1
This course prepares students for enrollment in Earth Science and Biology while developing academic literacy. One semester of study is devoted to Earth Science topics and one semester is devoted to Biology topics. The WIDA ELD Standard for the language of science is aligned to the VA Standards of Learning for the sciences. The course includes nonfiction reading and scientific writing. An elective credit is earned for successful completion of this course. Students generally enroll in either Biology or Earth Science the following year.
Schools offering course: 5, 6, 8, 9, 12

ACADEMIC LITERACY FOR A RANGE OF LEARNERS
Grades: 9-11 Credit: 1
This course is designed for students seeking to expand literacy skills for application in language arts, math, science, and social studies. A study of academic vocabulary enhances understanding for explicit word choice to express meaning. Students learn features of narrative and informational texts to enhance reading comprehension and response writing in a variety of formats such as narratives, essays, articles, and reports. An elective credit is earned for successful completion of this skill building course.
Schools offering course: See counselor for availability

ELD or SI Courses Offer 1 Credit
ELD OR SI ENGLISH 9
Schools offering course: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
ELD OR SI ENGLISH 10
Schools offering course: 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
ELD OR SI ENGLISH 11
Schools offering course: 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
ELD OR SI EARTH SCIENCE
Schools offering course: 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
ELD OR SI BIOLOGY
Schools offering course: 2, 3, 4, 5, 6, 7, 8, 9, 10, 12
ELD OR SI ASTRONOMY
Schools offering course: 2
ELD OR SI CHEMISTRY
Schools offering course: 2
ELD OR SI GEODESIC
Schools offering course: 7
ELD OR SI WORLD HISTORY I
Schools offering course: 2, 3, 4, 5, 6, 8, 9, 10, 11, 12
ELD OR SI WORLD HISTORY II
Schools offering course: 2, 6, 10, 12
ELD OR SI US/VA HISTORY
Schools offering course: 2, 3, 4, 5, 7, 9, 10, 11
ELD OR SI GOVERNMENT
Schools offering course: 2, 3, 5, 7, 9, 11, 12
ELD OR SI ALGEBRA I, PART 1
Schools offering course: 2, 3, 4, 5, 6, 7, 9, 10, 12
ELD OR SI ALGEBRA I, PART 2
Schools offering course: 3, 5, 6, 9, 10
ELD OR SI ALGEBRA I
Schools offering course: 2, 3, 4, 5, 6, 9, 10, 12
ELD OR SI GEOMETRY
Schools offering course: 2, 3, 4, 5, 6, 9, 10
ELD OR SI COMPUTER APPLICATIONS – For ELs at Level 1 only
Schools offering course: 5, 8, 10
ALGEBRA, FUNCTIONS, AND DATA ANALYSIS (ADFA)
Schools offering course: 5
THE FINE AND PERFORMING ARTS
Dance, Music, Theatre and Visual Arts

Graduation requirements are located in the “General Information” section

DANCE ELECTIVE COURSE SEQUENCE

DANCE I – FUNDAMENTALS OF DANCE
Grades: 9-12
Credit: 1 per year
Prerequisite: None

Fundamentals of Dance offers students an introduction to dance techniques and styles; dance history and cultural context; analysis, evaluation, and critique; and aesthetics. Students will develop the technical and artistic skills necessary for expressive dance performance and for the safe training and care of the body as an instrument. They will demonstrate an understanding of dance within the contexts of history, culture, and other art forms, and of the role of dance as a vehicle for human expression. Students will develop observation and critical-thinking skills for the evaluation of dance works, including their impact on society, and nurture a lifelong appreciation for dance as an integral component of an educated, cultured society.

Schools offering course: 12

DANCE II – DANCE AND THE CREATIVE PROCESS
Grades: 10-12
Credit: 1 per year
Prerequisite: Completion of Dance I

Dance and the Creative Process offers dance students the opportunity to integrate and expand upon the concepts learned and skills acquired in Dance I or other equivalent prior training. Students develop additional performance and production skills while increasing their range of physical skills through disciplined study of dance technique. Dance improvisation and composition studies expand students’ creativity and choreographic craftsmanship.

Schools offering course: 6

CFPA DANCE I COMPANY
Grades: 9-12
Credit: 1 per year
Prerequisite: Acceptance to the Center for Fine and Performing Arts or recommendation from the Program Coordinator

The content of “Company” is designed to provide students with a survey of the dance arts. Students will be studying ballet, modern dance, and jazz dance technique. Students will also be introduced to dance vocabulary, choreographic concepts, and dance history. Students will also develop performance skills, conduct critique and analysis and begin to develop their dance portfolios.

Schools offering course: 12

CFPA DANCE II CORPS
Grades: 9-12
Credit: 1 per year
Prerequisite: Recommendation from the Program Coordinator

The content of “Corps” is designed to integrate and build upon concepts and skills from Company level class. Students increase their range of physical skills through the disciplined study of dance technique. Students also develop performance and production skills. Students continue to expand their appreciation of the dance arts by further study of dance history and its contribution to society. Students are introduced to the diversity that exists within the art form and their personal aesthetic. Students continue to develop their dance portfolios.

Schools offering course: 12

CFPA DANCE III ENSEMBLE
Grades: 9-12
Credit: 1 per year
Prerequisite: Recommendation from the Program Coordinator

The content of “Ensemble” is designed to further refine physical alignment and technical execution of dance patterns specific to each dance style studied. Students will develop rudimentary understanding of concepts necessary for dance composition. Students will also begin to examine anatomical and kinetic components of dance, injury prevention and nutrition. This course will also familiarize students with the various aspects of dance production; lighting, sound, and other technical skills. Students continue to develop their portfolios.

Schools offering course: 12

CFPA DANCE IV ARTIST
Grades: 9-12
Credit: 1 per year
Prerequisite: Recommendation from the Program Coordinator

The content of “Artist” is to develop mastery of physical alignment and technical execution designed of dance patterns specific to each styled. Students will further explore and implement concepts used in dance composition and continue to develop knowledge and understanding of anatomical and kinetic aspects of dance. Students will continue their study of dance history and will explore its impact and relevance to dance in the 21st century.

Schools offering course: 12

CFPA DANCE COMPOSITION AND REPERTORY
Grades: 11-12
Credit: 1 per year
Prerequisite: Students must audition

Students will be introduced to the process of movement invention while developing the skills for creating and communicating a series of planned movement phrases. Students will also explore different choreographic styles as they produce original choreographed projects for the class.

Schools offering course: 12
MUSIC ELECTIVE COURSE SEQUENCE

CLASS PIANO – GUITAR
CLASS PIANO
GUITAR
UKULELE
Grades: 9-12
Credit: 0.5 or 1
Prerequisite: None
Students will be taught the necessary music fundamentals required to successfully play these instruments. Scales, music vocabulary, dynamics, technique, rhythmic skills and improvisation will be emphasized. All students will learn the beginning level technical and ensemble skills necessary for performance. Students enrolling in the guitar class will be required to furnish their own textbook and acoustic (non-electric) guitar. Piano students will be required to furnish their own textbook and headphones. Some limited performance opportunities may be provided in these classes. These courses may be taken more than once for credit.
Schools offering course: 2, 4, 5, 12 (3, 4, 5, 11 guitar only), 6, 7, 10

MUSIC THEORY
MUSIC THEORY I & II
Grades: 9-12
Credit: 1
Prerequisite: Music Theory I – Possess music skill and the ability to read music and teacher recommendation; Music Theory II – Successful completion of Music Theory I and teacher recommendation
Music Theory is a course designed for the student interested in an in-depth study of the fundamentals of music. Part writing, keyboard harmony, melodic and rhythmic dictation, and other ear-training skills will be developed in this class. Students will develop related skills in music composition, transposition, improvisation, and arranging. Each student will be encouraged to pursue independent study related to individual musical interests.
Schools offering course: 1, 2, 3, 4, 7, 10

MUSIC HISTORY
Grades: 9-12
Credit: 1
Prerequisite: None
Music History is designed to provide an overview of the development of music as an art form through a variety of time periods. Students will study today’s music and how and why it has evolved to its current state. To the extent possible, a multicultural approach to music history will be emphasized. This class may only be taken one time for credit.
Schools offering course: 2, 4

MUSIC TECHNOLOGY
Grades: 10-12
Credit: 1
Prerequisite: One High School music course, or permission of the instructor.
This course will offer students the opportunity to develop an understanding of music composition through the use of music notation software and hardware. Students will also develop skills that will assist them with creative and technical expression. A portfolio of compositions, arrangements and recordings representing a variety of styles and compositional situations will be developed throughout the course.
Schools offering course: 2, 12

ADVANCED MUSIC TECHNOLOGY
Grades: 11-12
Credit: 1
Prerequisite: Music Technology or permission of the instructor
The Advanced Music Technology course will build upon the knowledge and skills acquired in Music Technology and refine the student’s ability to arrange and compose original music and scores for film, using a variety of hardware and software tools. A final portfolio which demonstrates the student’s music development throughout the year will be required.
Schools offering Course: 11, 12

ORCHESTRA
INTERMEDIATE ORCHESTRA
ADVANCED ORCHESTRA
ORCHESTRA ENSEMBLE
CHAMBER ENSEMBLE
ADVANCED MIDDLE YEARS PROGRAMME ORCHESTRA
CFPA CONCERT ORCHESTRA
CFPA CHAMBER STRINGS
CFPA ORCHESTRA ENSEMBLE
CFPA PHILHARMONIC ORCHESTRA
Grades: 9-12
Credit: 1
Prerequisite: None, except for advanced orchestra
Students who enroll in the high school orchestra develop technical and ensemble skills through the study of orchestral literature. Students receive fundamental training in the proper playing of a stringed instrument and performance and study literature commensurate with their level of ability. Members of this class form the representative string performing group for the school. Some after-school rehearsals and performances are required of all students as a part of these courses. These courses may be taken more than once for credit. The curriculum for Adv-MYP Orchestra will incorporate global contexts, strategies, and assessment criteria.
Schools offering course: All (IB is at schools 2, 5 only, CFPA is at school 12 only)
CHOIR

VARSITY CHOIR
ADVANCED VARSITY CHOIR
CONCERT CHOIR
MEN'S CHOIR
TREBLE CHOIR
VOCAL ENSEMBLE
ADVANCED MIDDLE YEARS PROGRAMME
CHOIR
CFPA MEN'S VARSITY CHOIR
CFPA CONCERT CHOIR
CFPA WOMEN'S CAMERATA
CFPA COLGAN CHAMBER ENSEMBLE

Grades: 9-12
Credit: 1

Prerequisite: Auditions expected for all choirs except Varsity and Men's Choir

The high school choral program offers various courses to develop a student's musical skills based on his/her level of ability. Classes in varsity choir, concert choir, men's choir, treble choir, or vocal ensemble allow students to learn a variety of vocal skills through the study of related choral literature. Students in these classes develop technical facility and proficient musicianship through a variety of performance experiences. Through group performances, solos, and ensembles, the student is exposed to standard choral repertoire encompassing various styles and periods of music. Some after-school rehearsals and performances are required of all students as a part of these courses. These courses may be taken more than once for credit. The curriculum for Adv-MYP chorus will incorporate global contexts, strategies, and assessment criteria.

Schools offering course: All (IB is at schools 2, 5 only. CFPA is at school 12 only)
Advanced Varsity Choir Not offered at FPHS or Freedom HS
Treble Choir not offered at Freedom HS

WOMEN'S CHORALE

Grades: 9-12
Credit: 1

Prerequisite: None

Women's Chorale is for any female who has not had singing experience in high school. The course's target audience is incoming 9th graders, although upperclassmen are also eligible for enrollment.

Schools offering course: 5, 6, 7, 11, 12

WOMEN'S CHAMBER CHOIR

Grades: 10-12
Credit: 1

Prerequisite: One year of high school choir

This class offers the opportunity for students in Grades 10-12 to study and perform three and four-part music for the female voice at an advanced level. Basic vocal skills will be expanded and a high level of music reading will be encouraged. The class will be selected by audition only.

Schools offering course: 2, 4, 5, 6, 7, 8, 11, 12

CLASS VOICE I, II, III

Grades: 9-12
Credit: 1

Prerequisite: Voice II – successful completion of Voice I with a “B” or better or teacher recommendation
Voice III – successful completion of Voice II with a “B” or better, or teacher recommendation

Students enrolled in Class Voice I, II, and III will be taught fundamentals of singing technique. The class will emphasize posture, breathing technique, tone quality, diction, legato singing, and auditioning techniques. Students will be required to learn and sing solos from a variety of vocal literature appropriate to their skill level. All students will learn the skills necessary for solo performance. An emphasis will be placed on preparation for auditions including County, District and State events. Students will be required to purchase songbooks and/or music for class study. This is not an ensemble class.

Schools offering course: 12

BAND

9TH GRADE BAND
BAND/BRASS
BAND/PERCUSSION
BAND/WOODWIND
INTERMEDIATE BAND
PERCUSSION ENSEMBLE
JAZZ BAND (36 weeks – 1 credit) (18 weeks – 0.5 Credit)
ADVANCED MIDDLE YEARS PROGRAMME
BAND
CFPA SYMPHONIC BAND
CFPA CONCERT BAND
CFPA PERCUSSION ENSEMBLE
CFPA WIND SYMPHONY

Grades: 9-12
Credit: 1

Prerequisite: Audition required for Intermediate, Advanced, and Jazz Bands (8 requires audition)

The high school band program offers various courses to develop the student’s musical skills. Classes in 9th grade band, intermediate band, advanced band, marching band or jazz band allow students to learn technical and ensemble skills through the study of related literature. Some after-school rehearsals and performances are required of all students as an integral part of these courses. These courses may be taken more than once for credit. Students must provide their own instruments or make arrangements with the teacher to rent school-owned equipment. The curriculum for Adv-MYP band will incorporate global contexts, strategies, and assessment criteria.

Schools offering course: 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
(IB is at schools 1, 2, 5 only, CFPA is at school 12 only)
**Marching Band**

**Marching Band**

**Grades: 9-12**  
**Credit: 0.5**

Marching band is offered at all schools as part of the high school band program and is an offering for students who are also enrolled in another band class offering. This course may be taken more than once for credit.

**Schools offering course: All**

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**AP Music Theory**

**Grades: 11-12**  
**Credit: 1**  
**Prerequisite: Successful completion of Music Theory I or successful completion of one year of a high school music performing ensemble and permission of the instructor**

AP Music Theory provides students the learning experience equivalent to a college introductory course in music theory. Major areas of study include compositional procedures, listening skills (particularly those involving recognition and comprehension of melodic and rhythmic patterns), harmonic functions, compositional techniques, music textures, music terminology, notation skills, sight-singing, and score analysis. At the end of the course, students will be prepared to successfully complete the AP Music Theory Examination.

**Schools offering course: 6, 8, 11, 12**

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**IB Music Course Sequence**

**IB Music I (SL)**

**Grade: 11**  
**Credit: 1**  
**Prerequisite: Two years of high school music**

IB Music I is part one of a two-year program resulting in an IB Certificate or Diploma. The course develops an in-depth understanding of music theory. Study will include intervals, choral development, transposition, composition, analysis, ear training, sight-singing, and basic piano skills. Students will be required to participate in performance ensembles and take private lessons during the course.

**Schools offering course: 2**

**IB Music II (HL)**

**Grade: 12**  
**Credit: 1**  
**Prerequisite: Successful completion of IB Music I**

IB Music II is part two of a two-year program resulting in an IB Certificate or Diploma. The course is a continuation of IB Music I, with emphasis on music history. Students will explore all time frames of music history. Topics covered will include Gregorian Chant, baroque music, classical music, 20th Century music, and score reading. Students will be required to keep a composition portfolio and perform a lecture-recital. Depending on their skill and experience, students may prepare for either higher level or standard level examinations. Students will prepare for the IB Music HL exam.

**Schools offering course: 2**

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**Cambridge Music Course Sequence**

**IGCSE Music Studies**

**Grades: 10-12**  
**Credit: 1**  
**Prerequisite: Successful completion of one year of music studies at the high school level and teacher recommendation, Theory I, advanced music ensemble or private instruction**

IGCSE Music Studies will provide students with a basis for an informed appreciation of music and a foundation for further study at an advanced level. Students will develop a perceptive, critical response to the main historical periods and styles of Western music. Students will also recognize and understand the music from a variety of non-Western traditions, thus forming an appreciation of similarities and differences among cultures. Students will acquire basic musical skills, knowledge, and understanding of world music through listening, performing, and composing activities. Successful completion of the end of course exam will result in an IGCSE or an ICE certificate.

**Schools offering course: 4**

**AICE Music (AS/A Level)**

**Grades: 11-12**  
**Credit: 1**  
**Prerequisite: Successful completion of IGCSE Music Studies and/or teacher recommendation, advanced music ensemble or private instruction**

AS/A Level Music students develop an appreciation of, and informed critical response to, music of the Western tradition from at least two genres and periods. Students learn how to listen attentively and responsibly to better understand the musical processes at work: they also learn how to communicate this understanding, supporting their judgments through evidence-based argument. Students develop their own creative and interpretive skills through the disciplines of composing and performing in Western and/or non-Western traditions. AS Level year concentrates on listening, performing, or composing. A-Level builds on AS Level and concentrates on composing an original piece, investigating and reporting, and performing on a musical instrument or voice. Cambridge students are required to take the CIE exam in June.

**Schools offering course: 4**

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**Theatre Elective Course Sequence**

**Film Studies**

**Grades: 9-12**  
**Credit: 1**  
**Prerequisite: None**

This yearlong course seeks to encourage an enjoyment and deeper understanding of different types of film (narrative cinema, documentary, and abstract film) through a critical understanding of how films work artistically, technically, and socially. Through film theory and film production, students will apply a range of critical approaches as well as receiving instruction in video and film production.

**Schools offering course: 1, 2, 3, 4, 6, 8, 9, 10, 11, 12**

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**School Number Code:**

1 – Brentsville  
2 – Gar-Field  
3 – Osbourn Park  
4 – Potomac  
5 – Stonewall  
6 – Woodbridge  
7 – Hylton  
8 – Forest Park  
9 – Battlefield  
10 – Freedom  
11 – Patriot  
99 – Virtual
THEATRE I: INTRODUCTION TO THEATRE
Grades: 9-12 Credit: 1
Prerequisite: None
Students survey the theatre arts. They have opportunities to experience and appreciate dramatic literature and to participate in the creative processes of performance and production, with emphasis in skill development and theatrical opportunities that enable students to determine personal areas of interest.
Schools offering course: All except 7

THEATRE II: AN EXPLORATION OF PERFORMANCE IN THEATRE
Grades: 10-12 Credit: 1
Prerequisite: Theatre I: Introduction to Theatre and teacher recommendation
Students have advanced opportunities for reinforcement, refinement and expansion of the acting skills learned in Theatre I: Introduction to Theatre
Schools offering course: All except 7

TECHNICAL THEATRE – PRODUCTION
Grades: 10-12 Credit: 1
Prerequisite: None, or with teacher recommendation
Students study the design, scenery, lighting, makeup, sound, costumes, and public relations necessary to ensure successful theater productions. This course may be taken more than once for credit.
Schools offering course: All except 7

THEATRE III
Grades: 11-12 Credit: 1
Prerequisite: Theatre I and II and teacher recommendation
Students extensively examine dramatic literature, stage and scene design, costume design, theatre history, and performance.
Schools offering course: 3, 6, 9, 11, 12

THEATRE IV
Grade: 12 Credit: 1
Prerequisite: Theatre I, II, III, and teacher recommendation
Students refine the concepts learned and skills acquired in Theatre III and apply them to writing, performing, and directing while showcasing their collaborative and analytical skills.
Schools offering course: 6, 9, 11

IB FILM (SL)
Grades: 10-12 Credit: 1
Prerequisite: Successful completion of Film Studies
IB Film enables students to explore the various contexts of film and make links between films, filmmakers, and filmmaking techniques. Students acquire and apply skills as discerning interpreters and creators of film, working both individually and collaboratively. Students develop evaluative and critical perspectives on their own film work and the work of others.
Schools offering course: 2

IB THEATRE ARTS (SL)
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Theatre I and/or Exploration of Performance in Theatre and an audition
IB Theater Arts students study performance skills (ensemble work, mime/movement, voice, role play, and acting techniques/characterization), theatre studies (historical and theoretical developments), play analysis and interpretation, and theatre production. Students are required to contribute to and participate in theatre productions. Completion of the course’s IB examination is also required.
Schools offering course: 2

MUSICAL THEATRE
Grades: 11-12 Credit: 1
Prerequisite: Enrollment as a 3rd year student in The Center for the Fine and Performing Arts Vocal Music, Dance or Theatre programs
Students study the collaborative efforts involved in creating the stage musical. In the process they fuse three areas of the arts: singing, dancing and acting.
Schools offering course: 12

ADVANCED PERFORMANCE THEATRE
Grades: 10-11 Credit: 1
Prerequisite: Enrollment as a 3rd year student in The Center for the Fine and Performing Arts Theatre program
Students explore advanced acting techniques, and extensively examine and analyze dramatic literature and theatre of the 20th century. Students will also be introduced to scenic design, costume design, script analysis and performance as it applies to the directorial processes and investigate basic directing techniques.
Schools offering course: 12
DIRECTING FOR THE STAGE AND SCREEN  
Grade: 12  
Credit: 1  
Prerequisite: Theatre I, Advanced Performance Theatre  
The student learns how to create a vision for a production and to share that vision with the actors and the design teams who bring it to the stage or screen. The student selects plays and analyzes and edits the script. The student learns to develop calendars, scene designs, ground plans, story boards, and shooting techniques. The student will learn the technical vocabulary, direct for various theatrical stages, as well as for the camera, and develop techniques for optimal uses of performance space. The student studies differing types of theatre and the techniques and styles of important screen and stage directors.  
Schools offering course: 12

VISUAL ART ELECTIVE COURSE SEQUENCE

ART I – BASIC FOUNDATIONS  
ADVANCED MIDDLE YEARS PROGRAMME  
ART I  
Grades: 9-10  
Credit: 1 (36 weeks)  
Prerequisite: None  
First-year art students are enrolled in this introductory course. Art foundations will include two-dimension and three-dimension art production as well as visual literacy experiences with a focus on the elements of art and an introduction to the principles of design. The curriculum for Adv-MYP Art I will incorporate MYP global contexts, strategies, and assessment criteria.  
Schools offering course: All (IB is at schools 2, 5 only)

ART II  
Grades: 10-12  
Credit: 1  
Prerequisite: A grade of “C” or better in Art I  
Students will focus on the principles of design with reinforcement of the elements of art. In this course, students will demonstrate proficiency and craftsmanship in a variety of media.  
Schools offering course: All

ART III  
Grades: 11-12  
Credit: 1  
Prerequisite: A grade of “C” or better in Art II or teacher recommendation  
Students will explore art periods, styles, cultures, and artists through art production. Students will provide evidence of original ideas while demonstrating accomplished skill and technique with a variety of traditional and contemporary tools and media.  
Schools offering course: All

ART IV  
Grades: 12  
Credit: 1  
Prerequisite: A grade of “C” or better in Art III  
Students will investigate, interpret, and analyze artworks while reflecting on their success and growth as an artist. Students will demonstrate advanced skills and techniques in art making. Students will also demonstrate mastery through a culminating portfolio that exhibits personal direction, quality, concentration, breadth of experience, and technical skills.  
Schools offering course: All except 7, 8, 9, 12

ART V  
Grades: 10-12  
Credit: 1  
Prerequisite: Successful completion of the previous course with a “C” or better and a teacher recommendation  
Students will focus on art production reinforcing the learning of the elements of art and the principles of design. Students will continue to maintain and expand on the development of a process art portfolio that demonstrates independent research and mastery of skills and art processes. Students will refine their artistic vision and demonstrate innovative skills and craftsmanship with both two and three-dimensional media.  
These courses are sequentially designed to extend and further develop experiences in the Basic Foundations course. Artistic expression is explored through discipline-based art education (art production, art history, art aesthetics, and art criticism).  
Schools offering course: 1, 2, 3, 4, 6, 9, 10, 12  
School 9: Art V must be taken concurrently with AP Studio Art

3-D SCULPTURE I  
Grades: 9-12  
Credit: 1  
Prerequisite: None  
3-D Sculpture I is a hands-on course that allows students to develop knowledge and problem solving skills while working with various forms of expression. Students will study and apply methods of balance, positive and negative space, methods of change, and the arrangement and use of media. Students will also learn to plan a 3D project and address a work from multiple perspectives. Students will gain knowledge of the history of sculpture from representational to non-objective styles.  
Schools offering course: 3, 5

ART PORTFOLIO PREPARATION  
Grades: 10-12  
Credit: 1  
Prerequisite: Successful completion of Art I and II with a “B” or better average or Art I with an “A” average and/or approval of the instructor  
The Art Portfolio Preparation studio is intended for students committed to serious study in art. The studio will focus on the student’s individual artistic talents. The portfolio, compiled by the student, will demonstrate a variety of experiences in the formal, technical, and expressive means. This course is highly recommended for juniors considering AP Art their senior year.  
Schools offering course: Each school’s offerings are determined by enrollment

PHOTOGRAPHY I  
Grades: 10-12  
Credit: 1  
Prerequisite: Successful completion of Art I. Student must provide a 35mm S.L.R. film camera (for schools with darkrooms) or a digital camera. A fee may be charged for consumable materials needed to complement provided materials.
**ART HISTORY**

**Grades: 9-12**

**Credit: 1**

**Prerequisite: None**

Art History will provide a comprehensive program of study that includes architecture, painting, sculpture and other visual art forms in relation to history and cultures. Students will study medieval times through modern art trends. Two visits to Washington’s art galleries are included to evaluate different works of art. This course may be of particular interest to CISL students and is a prerequisite for students wishing to take AP Art History. This course will complement classes in the humanities, providing multicultural and interdisciplinary connections. Students will be expected to pursue their own artistic talents outside the classroom.

**Schools offering course: 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12**

**PHOTOGRAPHY II**

**Grades: 11-12**

**Credit: 1**

**Prerequisite: Successful completion of Photography I with a “B” or better and/or recommendation from the Photography instructor.** Student must provide a 35mm S.L.R. film camera (for schools with darkrooms) or a digital camera. A fee may be charged for consumable materials needed to complement provided materials.

Students will expand photography skills using 35mm cameras. Emphasis will be placed on the study of personal expression and development of creativity. Advanced camera problems and darkroom techniques will be studied through a variety of assignments. The history of photography will be offered through the study of major photographers, photographic imagery, the use of photography for artistic communication, and the major themes used by photographers. Ethical issues concerning photographic imagery will be explored. Students will also explore digital cameras and scanners to create photographic compositions. Students will produce a portfolio containing both 35 mm and digital photographs reflecting a series of works organized around a compelling visual concept or concentration.

**Schools offering course: 1, 3, 5, 6, 7, 8, 9, 11, 12**

**COMPUTER ART I**

**Grades: 10-12**

**Credit: 1**

**Prerequisite: Successful completion of Art I or IT**

**Graphic Design/Commercial Art with a “B” or better and recommendation from Art Teacher**

This course places emphasis on the production of artistic computer imagery, rather than commercial/web graphics. Students will use photographic software to examine and alter images for computer graphic and fine art applications. The study of aesthetics and history of art will be included in the course. Students will combine natural art media, scanned images and digital photography with computer imagery. Students will be required to produce digital portfolios.

**Schools offering course: 1, 4, 5, 6, 7, 8, 9, 11, 12**

**ART ADVANCED PLACEMENT COURSES**

- **ADVANCED PLACEMENT STUDIO ART 2-D DESIGN**
  **Grades: 9-12**
  **Credit: 1**
  **Prerequisite: Completion of Art I and II with a “B” or better, or teacher recommendation. Recommend completion of Portfolio Prep prior to AP Art**

The Advanced Placement studio studies are intended for the highly motivated students committed to serious study in art. Students should have completed Art I and II or have an art teacher recommendation for this course. This portfolio is intended to address a very broad interpretation of two-dimensional (2-D) design issues. This type of design involves purposeful decision-making about how the use of the elements and principles of art work in an integral way. This portfolio is comprised of 3 sections: Quality (5 actual works of art), Concentration (12 slides which reflect a series of art around a visual concept in 2-D Design) and Breadth (12 slides that demonstrate a wide variety of concepts, media and approaches.) Actual works of art and slides are submitted for AP Examination review.

**Schools offering course: 3, 4, 8, 9, 11, 12**

- **ADVANCED PLACEMENT STUDIO ART DRAWING**
  **Grades: 9-12**
  **Credit: 1**
  **Prerequisite: Completion of Art I and II with a “B” or better and teacher recommendation. Recommend completion of Portfolio Prep prior to AP Art**

The Advanced Placement studio studies are intended for the highly motivated students committed to serious study in art. Students should have completed Art I and II and have an art teacher recommendation for this course. This portfolio is intended to address a very broad interpretation of drawing issues and media. The AP Drawing portfolio is comprised of 3
sections: Quality (5 actual works of art), Concentration (12 slides which reflect a series of art around a visual concept in drawing) and Breadth (12 slides that demonstrate a variety of concepts, media, and approaches). Actual works of art and slides are submitted for AP Examination review.

Schools offering course: 3, 4, 6, 7, 8, 9, 12

ADVANCED PLACEMENT STUDIO ART
3-D DESIGN
Grades: 9-12 Credit: 1
Prerequisite: Completion of Art I and II with a “B” or better and teacher recommendation. Recommend completion of Portfolio Prep prior to AP Art

The Advanced Placement studio studies are intended for highly motivated students committed to serious study in art. Students should have completed Art I and II and have an art teacher recommendation for this course. This portfolio is intended to address a broad interpretation of sculptural issues in depth and space. This portfolio is comprised of 3 sections: Quality (10 slides consisting of 2 views each of 5 works), Concentration (12 slides of a series of works organized around a compelling visual concept in 3-D Design) and Breadth (16 sides consisting of 2 views each of 8 works that demonstrate a variety of concepts, media and approaches). Slides are submitted for AP Examination review.

Schools offering course: 3, 7, 8, 9, 12

ADVANCED PLACEMENT ART HISTORY
Grades: 10-12 Credit: 1
Prerequisite: Successful completion of at least one course in the visual or performing arts.

The Advanced Placement Program in the History of Art is designed to provide the same benefits to secondary students as are provided by an introductory college course in art history: an understanding and enjoyment of architecture, sculpture, painting, and other art forms within a historical and cultural context. In the course students learn to look at works of art with intelligence and sensitivity, examining the major forms of artistic expression of the past and of distant cultures as well as those of our own time and environment in preparation for the advanced placement test.

Schools offering course: 6, 11
CENTER FOR FINE AND PERFORMING ARTS COURSE SEQUENCE

CFPA ART I – BASIC FOUNDATIONS
Grades: 9-12
Credit: 1
Prerequisite: None
This course is designed for the first-year CFPA student. The areas of concentration will include basic foundations, principles of design, elements of design, visual literacy, two-dimensional design and three-dimensional design. This course will serve as the prerequisite for all advanced CFPA studio classes and prepare the student in a specific medium. Each student will be required to present an exit portfolio of the work prepared in the class.

Schools offering course: 12

CFPA ART II
Grades: 10-12
Credit: 1
Prerequisite: A grade of 2.5 or better in CFPA Art I
This course is designed for the second-year CFPA student and includes a more in-depth study of basic foundations, media and stylizations. The student will be encouraged to develop a particular medium. Each student will be required to present an exit portfolio of the work prepared in the class.

Schools offering course: 12

CFPA 2D MEDIA AND DESIGN
Grades: 11-12
Credit: 1
Prerequisite: Successful completion of CFPA Art II or ART II or approval by the CFPA faculty
In this course, students will participate in an in-depth exploration of processes in drawing, painting, printmaking, collage, and mixed-media. Students will experiment with various tools and techniques. Students will also explore the works of professional two-dimensional artists. Upon completion of this course, students will select two-dimensional works of art created in this class to diversify their existing portfolio.

Schools offering course: 12

CFPA 3D MEDIA AND DESIGN
Grades: 11-12
Credit: 1
Prerequisite: Successful completion of CFPA ART II or ART II with approval of the CFPA faculty
3D Media and Design is an exploration of sculpture and ceramics with an emphasis on the individual's study of three-dimensional form, expanding upon the student's current knowledge of media. Students will experiment with a wide variety of media, tools, and techniques in their work. They will also explore the work of professional sculptors and ceramicists. Students will select three-dimensional works of art created in this class to diversify their existing portfolios.

Schools offering course: 12

IB ART COURSE SEQUENCE

IB VISUAL ARTS (SLA OR SLB)
Grades: 11 or 12
Credit: 1
Prerequisite: Completion of one year of high school art with a “C” or better average and/or teacher approval
IB Visual Arts (Standard Level) is a one-year program resulting in an IB Certificate or Diploma. The course is intended for students committed to serious study in art. Students will combine persistent research with regular studio work, training, visual, perceptual, and critical awareness of the arts of various cultures, as well as developing creativity, technical skills, and a feeling for the fundamentals of design. Students may choose either SLA (a concentration in studio work) or SLB (a concentration in research). Students are required to take part in an IB assessment process.

Schools offering course: 2, 5

IB VISUAL ARTS I (HL)
Grades: 11-12
Credit: 1
Prerequisite: Successful completion of two years of high school art courses with a grade of “B” or better in each and/or teacher recommendation
IB Visual Arts is the first year of a two-year program resulting in an IB Certificate or Diploma. The course is intended for students committed to serious study in art. The aim of this course is to provide opportunities to develop the aesthetic, imaginative, and creative faculties as well as to train visual, perceptual, and critical awareness of arts of various cultures. The portfolio, compiled by the student, will demonstrate intensive concentration in studio work and/or research in preparation for the required IB assessment at the end of the second year. Credit will be awarded upon the completion of the two-year program.

Schools offering course: 2, 5
IB VISUAL ARTS II (HL)
Grade: 12
Credit: 1
Prerequisite: Successful completion of IB Visual Arts I

IB Visual Arts II is the second year of a two-year program resulting in an IB Certificate or Diploma. The course is intended for students committed to serious study in art. Students will combine research with studio work, developing appreciation, creativity, technical skills, and a feeling for the fundamentals of design. Students are required to take part in the IB assessment process. Credit will be awarded upon the completion of the two-year program.

Schools offering course: 2, 5

IT COMPUTER GRAPHICS II
Grades: 11-12
Credit: 1
Prerequisite: Successful completion of IT Computer Graphics I

IT Computer Graphics II is a continuation of IT Computer Graphics I. The course of study will include applications for image creation and manipulation. The emphasis will be on the study of aesthetics and on the production of original computer imagery. This course will enable modeling for print reproduction rather than web production. Students will work on individual as well as team projects. Students will be required to produce professional portfolios.

Schools offering course: 8, 9

INSTRUCTIONAL TECHNOLOGY (IT) ART COURSE SEQUENCE

IT GRAPHIC DESIGN
Grades: 9-12
Credit: 1
Prerequisite: Acceptance into the IT Program

IT Graphic Design is designed to train students to become visual communicators. Students will apply the knowledge and understanding of the elements and principles of art through various media, techniques, and processes to solve problems in visual communications. A variety of 2-D and 3-D media will be used. Students will explore technical aspects of layout, typography, illustration, design, and color psychology using traditional graphic tools. Students will learn about the ethical issues in the commercial field, management of time to meet deadlines, working in a team, and expressing and defending their ideas. Also, students will study the history and cultural impact of visual communications. Works generated will be the basis for beginning a Graphics Art Portfolio.

Schools offering course: 8, 9

IT COMPUTER GRAPHICS I
Grades: 10-12
Credit: 1
Prerequisite: Successful completion of IT Graphic Design with a “B” or better and a background in computer applications is recommended, and teacher recommendation

This course prepares students for upper-level computer graphics and multimedia as well as entry-level career opportunities in the computer graphics industry. The course of study includes learning the foundations of computer graphics, photo design, and production as well as taking images from concept to completion in print and on the web. Tools such as digital cameras and scanners are used to import art and graphics into electronic formats. The students’ artistic abilities will be enhanced as they master Adobe’s Photoshop software to complete the design and production process.

Schools offering course: 8, 9

IT MULTIMEDIA SOFTWARE DESIGN AND DEVELOPMENT I
ACADEMY OF MULTIMEDIA I
Grades: 11-12
Credit: 1
Prerequisite: Computer Graphics I

Multimedia prepares students for the challenging world of information design, multimedia development, Web-based development and learning management. The processes and tools that address these aims will be explored. Computer based multimedia combines all the facets of communication into an interactive product. The ethical issues of copyright laws and fair use issues will be emphasized.

Schools offering course: 8, 9

IT MULTIMEDIA SOFTWARE DESIGN AND DEVELOPMENT II
ACADEMY OF MULTIMEDIA II
Grade: 12
Credit: 1
Prerequisite: Academy of Multimedia I

Multimedia II continues the student’s study of the challenging world of information design, multimedia Web-based development and learning management. Students will use informational design and multimedia software to study advanced applications in this field. Video and computer based multimedia will be combined into an interactive product. The ethical issues of copyright laws and fair use issues will be reviewed. Students will work individually and in teams to complete projects. Students will produce a digital portfolio.

Schools offering course: 8
**IT PHOTOGRAPHY**

Grades: 11-12  
Credit: 1  
Prerequisite: Completion of IT Computer Graphics I. Students must provide a 35mm S.L.R. camera  

The study of 35 mm print photography focusing on darkroom development will be introduced. Advanced studies of digital photography using cameras, scanners, and photo editing software will be explored. Students will examine through the camera lens how the elements of art and principles of design contribute to effective compositions that communicate a clear message. Students will compare/contrast the history of photography and digital photography. Ethical issues concerning photographic imagery will be explored. Students will produce a portfolio containing both 35 mm and digital photographs to be used in multimedia classes. This course is designed for interactive media students seeking an advanced IT certificate.

Schools offering course: 8

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**PHOTOGRAPHY I**

Grades: 10-12  
Credit: 1  
Prerequisite: Successful completion of Art I. Students must provide a 35mm S.L.R. film camera (for schools with darkrooms) or a digital camera. A fee may be charged for consumable materials needed to complement provided materials.

The study of black and white photography as an art medium is introduced. Light, design, lens, camera, film, and darkroom techniques are explored. The history of photography and related career opportunities provide a broad overview of the continually growing technical and artistic field of photography. Student self-expression as a means of creative communication is emphasized throughout the course. A student portfolio is maintained for assessment and exhibition.

Schools offering course: 10
WORLD LANGUAGE

Graduation requirements are located in the “General Information” section.

MODERN ROMAN ALPHABET

WORLD LANGUAGES

FRENCH I
GERMAN I
ITALIAN I
SPANISH I

Grades: 9-12

Credit: 1

Prerequisite: None

Students use the language authentically, communicating in real-life situations from the beginning of the course. They learn the sound system and basic grammar and vocabulary, primarily through use of the language in meaningful contexts. All basic skills of the language are learned: understanding, speaking, reading, and writing. Emphasis is on communication in interpersonal situations. Culture is an integral part of the course.

Schools offering courses:
French I: All
German I: 6, 7, 8, 12, 99
Italian I: 4, 6, 7, 99
Spanish I: All

FRENCH II
GERMAN II
ITALIAN II
SPANISH II

Grades: 9-12

Credit: 1

Prerequisite: Level I and teacher recommendation

Students continue to learn the language through its use in realistic contexts with more complex grammatical structures. Additional listening, speaking, writing, and reading skills are acquired through practice with authentic materials and in real-life situations. The study of customs and culture is an integral part of the course.

Schools offering courses:
French II: All
German II: 6, 7, 8, 12, 99
Italian II: 4, 6, 7, 99
Spanish II: All

FRENCH III
GERMAN III
ITALIAN III
SPANISH III

Grades: 9-12

Credit: 1

Prerequisite: Level II equivalent and teacher recommendation

The emphasis for study continues on all four skills of communication: listening, speaking, reading, and writing. Students continue to work toward the mastery of the essential elements of grammar and the development of a sufficient vocabulary to use the language proficiently in most situations. Reading skills continue development through use of more challenging authentic materials. Students’ writing skills are expected to be increasingly complex and sophisticated. Students continue to develop a global awareness.

Schools offering courses:
French III: All
German III: 6, 7, 8, 12
Italian III: 4, 6, 7
Spanish III: All

FRENCH IV
ITALIAN IV
SPANISH IV

Grades: 9-12

Credit: 1

Prerequisite: Level III, Advanced III, or Spanish for Fluent Speakers III equivalent and teacher recommendation

Oral communication is practiced through conversation, group discussion, skits, dialogues, reports, and reading selections. Reading for comprehension of ideas rather than for individual word or sentence meaning is developed. Course syntax focuses on advanced grammatical structures. Controlled writing decreases and skills for practicing free composition are developed. Vocabulary building encompasses extensive practice with idioms, synonyms, and antonyms. Students broaden their appreciation of the target language culture through the study of current and historical events and literature.

Schools offering courses:
French IV: 1, 3, 4, 9, 10
Italian IV: 4, 6
Spanish IV: 1, 3, 4, 9, 10

FRENCH V
SPANISH V

Grades: 10-12

Credit: 1

Prerequisite: Level IV, Advanced IV or Spanish for Fluent Speakers IV equivalent and teacher recommendation

Speaking and listening skills are practiced primarily through classroom discussion of reading materials. Analysis of the various literary forms becomes a significant part of the reading program. Both required and independent reading takes place. Writing skills are further developed through directed writing and free composition. A variety of major literary works are read and discussed in detail to include: excerpts from novels, essays, poetry, short stories, and plays.

Schools offering courses:
French V: 1, 4, 9, 10
Spanish V: 1, 4, 9, 10
ARABIC I
Grades: 9-12  Credit: 1
Prerequisite: None
Arabic I students will examine the Arabic alphabet, the essential elements of pronunciation and the basic structure of the written form of standard modern Arabic. Students will use the language authentically, communicating in real life situations from the beginning of the course. All basic skills of the language are learned: speaking, listening, reading, and writing. Emphasis is on communication for interpersonal situations. Culture is an integral strand and goal of the entire course.
Schools offering course: 2, 7

ARABIC II
Grades: 9-12  Credit: 1
Prerequisite: Arabic I or basic language proficiency and teacher recommendation
Arabic II students will continue to study the essential elements of the basic structure of the written form of standard modern Arabic. Students will continue the use of language authentically, communicating in real life situations from the beginning of the course. All fundamental skills of the language are learned: speaking, listening, reading, and writing. Emphasis is on communication for interpersonal situations in more complex situations and in various modes. Culture is an integral strand and goal of the entire course.
Schools offering course: 2, 7

ARABIC III
Grades: 9-12  Credit: 1
Prerequisite: Arabic II or basic language proficiency and teacher recommendation
After successful completion of Arabic II students will be able to advance to Arabic III. Arabic III focuses on strengthening the basic language skills of reading, writing, listening, and speaking, all in cultural context. It reinforces grammar and vocabulary in an intermediate language level through constant review and expands to challenge students as their skills develop.
Schools offering course: 2, 7

ARABIC IV
Grades: 11-12  Credit: 1
Prerequisite: Arabic III or basic language proficiency and teacher recommendation
After successful completion of Arabic III, students will be able to advance to Arabic IV. Arabic IV focuses on expanding on the language skills of reading, writing, listening, and speaking, all in cultural context. It reinforces grammar and vocabulary in an intermediate-high language level through constant review and expands to challenge students as their skills develop to be able to read some literature and cultural readings.
Schools offering course: 7

CHINESE I (MANDARIN)
Grades: 9-12  Credit: 1
Chinese I is designed to introduce and to make students comfortable with the most widely spoken language on earth. Pronunciation will emphasize Romanization, tones, initials, and finals. Students will examine Chinese characters from a number of angles and will learn the basic principles of grammar. A vocabulary of essential words will be developed and practiced. The course will be infused with the culture and customs of the Chinese people.
Schools offering course: 7

KOREAN I
Grades: 9-12  Credit: 1
Pre-Requisite: None
Korean I students will examine the Korean alphabet, Hangul, the essential elements of pronunciation and the basic structure of the written form of standard Korean. Students will use the language authentically, communicating in real life situations from the beginning of the course. All basic skills of the language are learned: speaking, listening, reading, and writing. Emphasis is on communication for interpersonal situations. Culture is an integral strand and goal of the entire course.
Schools offering course: 7

KOREAN II
Grades: 9-12  Credit: 1
Pre-Requisite: Korean I or basic language proficiency and teacher recommendation
Korean II students will continue to develop basic reading and writing skills using the Korean alphabet and Hangul form of written Korean in order to communicate basic information in writing and speaking and understand basic conversations and readings in meaningful contexts. Students will continue to develop all four skills of the language: listening, speaking, reading and writing in order to communicate in daily situations and present, interpersonal exchange familiar information and to interpret this information in reading and listening. Cultural elements will be integrated to include the perspectives, products, and practices of Koreans.
Schools offering course: 7

KOREAN III
Grades: 9-12  Credit: 1
Pre-Requisite: Korean II or equivalent. Korean III students will continue to develop their skills in understanding and speaking Korean, but especially progress in their literacy skills. Students will read, discuss, and write about various authentic types of written texts to include short literary texts and excerpts. Cultural products, practices and perspectives of Korean culture will continue to be integrated into all discussions.
Schools offering course: 7
KOREAN IV
Grades: 10-12
Credit: 1
Prerequisite: Korean III or equivalent. Korean IV students will continue to develop their skills in understanding and speaking Korean, but especially progress in their literacy skills. Students will read, discuss, and write about various authentic types of written texts to include short literary texts and excerpts. Cultural products, practices and perspectives of Korean culture will continue to be integrated into all discussions.
Schools offering course: 7

RUSSIAN I
Grades: 9-12
Credit: 1
Prerequisite: None
Russian I students will examine the Cyrillic alphabet and essential elements of pronunciation. Speaking and listening skills will be developed through personal interaction and access to authentic material. Basic grammar and vocabulary are introduced. The course will be infused with the culture and customs of the Russian people.
Schools offering course: 7, 8

RUSSIAN II
Grades: 10-12
Credit: 1
Prerequisite: Russian I equivalent and teacher recommendation
Russian II will provide students additional tools to improve conversational skills, listening comprehension, and proficiency in reading and writing. Emphasis will be placed on the acquisition of more complex grammatical structures. Exposure to authentic materials and situations will increase. The study of culture will enhance students’ understanding of the language.
Schools offering course: 7, 8

RUSSIAN III
Grades: 10-12
Credit: 1
Prerequisite: Russian II or equivalent and teacher recommendation
Russian III will continue to provide students additional tools to improve conversational skills, listening comprehension, and proficiency in reading and writing. Emphasis will be placed on the acquisition of more complex grammatical structures as found in extended reading passages and writing prompts. Exposure to authentic materials such as video series and situations will increase. The study of culture will enhance students’ understanding of the language and help dispel stereotypes of the Russian people.
Schools offering course: 6, 11

RUSSIAN IV
Grades: 10-12
Credit: 1
Prerequisite: Russian III
ASL I, II, and III have been approved courses for over 15 years. ASL IV is a new level to the already established course sequence and will meet the needs of some students who prefer to continue with this course of study and not start a new world language course.
Schools offering course: 6, 11

AMERICAN SIGN LANGUAGE

AMERICAN SIGN LANGUAGE I
Grades: 9-12
Credit: 1
Prerequisite: None
By the end of this course, the students should be able to exchange personal information about themselves in ASL, using the correct vocabulary and grammar. Students are given instruction in basic ASL vocabulary and grammar, fundamentals about Deaf Culture and what it means to be deaf, the history of American Deaf Culture, which is also the history of Deaf Education, and basic rules of social interaction within Deaf Culture.
Schools offering course: 6, 7, 9, 11, 12

AMERICAN SIGN LANGUAGE II
Grades: 9-12
Credit: 1
Prerequisite: ASL I
By the end of this course, students should be able to carry on a moderately complex conversation in ASL on a wide variety of topics. Students continue to deepen their understanding of Deaf Culture as well as receive more in-depth instruction in ASL vocabulary and grammar. The students continue to develop their receptive skills, and now begin to focus more on their expressive abilities in ASL. Role playing and videorecording are an integral part of the course. Students also study hearing loss, assistive devices, and the Americans with Disabilities Act (ADA).
Schools offering course: 6, 9, 11, 12

AMERICAN SIGN LANGUAGE III
Grades: 9-12
Credit: 1
Prerequisite: ASL II
By the end of this course, students should be able to carry on a moderately complex conversation in ASL on a wide variety of topics. Students will continue to deepen their understanding of Deaf Culture as well as receive more in-depth instruction in ASL vocabulary and grammar. The students continue to develop their receptive skills, and now begin to focus more on their expressive abilities in ASL. Interactions with the Deaf culture will increase. Role playing and videorecording are an integral part of the course. Students also study hearing loss, assistive devices, and the Americans with Disabilities Act (ADA).
Schools offering course: 6, 9, 11, 12

AMERICAN SIGN LANGUAGE IV
Grades: 10-12
Credit: 1
Prerequisite: ASL III
ASL I, II, and III have been approved courses for over 15 years. ASL IV is a new level to the already established course sequence and will meet the needs of some students who prefer to continue with this course of study and not start a new world language course.
Schools offering course: 6, 11
LATIN I
Grades: 9-12  Credit: 1
Prerequisite: None
The student of Latin I is introduced to the morphology of an inflected language with the primary focus on the noun system and indicative mood of verbs. The syntax of the language builds from words and phrases to sentences. The student develops a basic Latin vocabulary with opportunities to enlarge his/her English vocabulary through derivative study. Classical pronunciation to aid in reading comprehension is taught. The student is introduced to the customs of daily life and the geography of ancient Rome.
Schools offering course: 1, 3, 4, 9

LATIN II
Grades: 9-12  Credit: 1
Prerequisite: Latin I or equivalent and teacher recommendation
Latin II is an elective course offered in Grades 9-12. The student continues a study of Latin morphology with the primary focus on the subjunctive mood of verbs, infinitives and participles, increasingly sophisticated syntactic concepts are introduced, and the student expands his/her comprehension skills through readings of appropriate difficulty. The student continues to develop a Latin vocabulary and to enlarge his/her English vocabulary through derivative study. The student studies the people, places, and events that shaped Roman history.
Schools offering course: 1, 3, 4, 9

LATIN III
Grades: 10-12  Credit: 1
Prerequisite: Latin II or equivalent, and teacher recommendation
Latin III is an elective course offered in Grades 10-12 that serves to synthesize the skills already mastered, to complete the corpus of grammar, and to introduce specialized syntactic constructions. The course provides for translation practice, reading comprehension, an introduction to rhetorical devices, and both Latin and English vocabulary expansion through a study of Latin selections. The student develops an understanding of the relationship between the works read and their social, economic, political, and historical contexts.
Schools offering course: 3, 4, 9

LATIN IV
Grades: 11-12  Credit: 1
Prerequisite: Latin III or equivalent, and teacher recommendation
Latin IV is an elective course offered in Grades 11 and 12 that serves to refine all grammar skills and to apply these skills to the reading and translation of Latin literature. The student studies in-depth selected works of Latin literature. Emphasis is on increasing comprehension, refining skills for critical analysis, and enhancing the student’s ability to respond to the aesthetic elements of literature. Continued attention is given to the acquisition of Latin vocabulary, especially those words/idioms particular to authors read and to the varying connotations of familiar words.
Schools offering course: 3, 4, 9

LATIN V
Grades: 11-12  Credit: 1
Prerequisite: Latin IV or equivalent, and teacher recommendation
Latin V is an elective course offered in Grades 11 and 12. Extensive reading of various Latin selections of both prose and poetry is emphasized. Discussions will focus on works by Virgil, Horace, Catullus, Ovid, Caesar, Cicero, and Livy, emphasizing their styles, context, and themes of Roman life. Highly motivated seniors may select to study one or two of the authors in depth in preparation for the Advanced Placement Exam.
Schools offering course: 3, 9

SPANISH FOR FLUENT SPEAKERS PROGRAM
Spanish for Fluent Speakers (SFS) Courses allow native or heritage speakers of Spanish to continue to develop all skills of Spanish in an accelerated manner commensurate with their skills in reading, writing, speaking and listening. It recognizes the natural skill of both native/heritage speakers who were born in the US and never had formal education in a Spanish-speaking country, or students who may have come from a Spanish–speaking country and due to many circumstances may not have had the opportunity to receive formal education or who had interrupted formal education, yet are proficient in their understanding and speaking of Spanish for interpersonal purposes.
Specific written identification procedures ensure appropriate identification of native/heritage speakers based on objective criteria such as a student’s Home Language Survey, transcript analysis, and/or a common student interview/questionnaire as is applicable. A PWCS pre-assessment allows teachers to determine each student’s skill level and appropriate placement or Placement Test should be administered to all students prior to being put into a course. Students entering the fluent speakers sequence having started the traditional Spanish courses for non-native/heritage speakers, should also be assessed prior to placement. Even if a student were in regular/traditional Spanish 1 and 2, it is recommended to place them in SFS 1.
Students may earn a world language credit for this course as allowed by the Virginia Department of Education. The goal is for both native/heritage and non-native speakers of Spanish to learn together in the advanced courses beyond Level III in high school. Research studies show a direct correlation with the higher skills in a student’s first language and their facility to learn English faster and also to a higher level. Traditional language courses are created for non-native/heritage speakers of the language.

SPANISH FOR FLUENT SPEAKERS I – BEGINNING LEVEL
Grades: 9-12  Credit: 1
Prerequisite: Native or heritage speakers of Spanish and recommendation of teacher based on assessment of student’s skills
This course is designed for Spanish-speaking students at the high school level. It recognizes the natural skill of native/heritage speakers who were born in the US and never had formal education in a Spanish-speaking country, or students who may have come from a Spanish–speaking country and due to many circumstances may not have had the opportunity to receive formal education, yet
are proficient in their understanding and speaking of Spanish for interpersonal purposes. The course will build on these existing listening and speaking skills, and also develop basic reading and writing skills, with an emphasis on grammatical concepts. The course will try to tap the natural potential of native/heritage speakers to focus on enhancement of skill acquisition in general, especially emerging literacy, instill pride in a rich heritage, and allow students to succeed to their full potential.

Schools offering course: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12

**SPANISH FOR FLUENT SPEAKERS II – INTERMEDIATE LEVEL**

Grades: 9-12

Prerequisite: Successful completion of Spanish for Fluent Speakers I or Fluent Speakers of Spanish and recommendation of teacher based on assessment of student's skills

This course is designed for Spanish-speaking students at the high school level. This level is for Spanish-speaking native/heritage speakers who have some proficiency in all skills, to include listening, speaking, reading, and writing, but at a level commensurate with students who have had interrupted or limited formal schooling in a Spanish-speaking school. It also recognizes the natural skill of native/heritage speakers and emphasizes expansion and not replacement of the student's existing language skills. The course will continue to tap the natural potential of native/heritage speakers to focus on enhancement of skill acquisition, instill pride in a rich heritage, and allow students to succeed to their full potential. The course will also continue to build on existing listening and speaking skills, and especially continue to develop reading and writing skills.

Schools offering course: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12

**SPANISH FOR FLUENT SPEAKERS III – ADVANCED LEVEL**

Grades: 11-12

Prerequisite: Successful completion of Spanish for Fluent Speakers II or Native/Heritage Speakers of Spanish and recommendation of teacher based on assessment of student's skills

This course is designed for Spanish-speaking students at the high school level who have had formal study of Spanish in a school setting in their native countries or have an advanced level of literacy. The course continues to recognize the natural skill of native/heritage speakers and emphasizes expansion and not replacement of the student's existing language. The course will continue to tap the natural potential of native/heritage speakers to focus on enhancement of skill acquisition, instill pride in a rich heritage, and allow students to succeed to their full potential. The course will build on existing reading and writing skills and expand authentic readings by authors of the Spanish-speaking world and require advanced compositions and projects.

Schools offering course: 1, 2, 4, 5, 6, 7, 8, 9, 10, 12

**ADVANCED PLACEMENT**

**ADVANCED FRENCH LANGUAGE III**

**ADVANCED GERMAN LANGUAGE III**

**ADVANCED RUSSIAN LANGUAGE III**

**ADVANCED SPANISH LANGUAGE III**

**ADVANCED LATIN LANGUAGE III**

Grades: 9-12

Prerequisite: Successful completion of Level II equivalent and teacher recommendation

Advanced Language III is a course designed to develop proficiency in the language for highly motivated students. Students will be expected to master all of the objectives of the Level III course in a more rigorous and accelerated manner. The courses in French, German, and Spanish seek to develop all skills emphasizing language for communication using authentic materials in preparation for further AP study. The Advanced Latin course seeks to develop all skills emphasizing literal translation of passages, analysis of grammar and rhetorical devices, discussion of motifs and general themes, analysis of characters and situations and free response essays in preparation for further AP Latin study.

Schools offering courses:

French: 3, 6, 7, 8, 9, 10, 11, 12

German: 12

Latin: 3, 9

Russian: 7, 8

Spanish: 3, 6, 7, 8, 9, 10, 11, 12

**ADVANCED FRENCH LANGUAGE IV**

**ADVANCED GERMAN LANGUAGE IV**

**ADVANCED LATIN LANGUAGE IV**

**ADVANCED RUSSIAN LANGUAGE IV**

**ADVANCED SPANISH LANGUAGE IV**

Grades: 10-12

Prerequisite: Successful completion of Pre-AP Level III equivalent and teacher recommendation

Advanced Language IV is a course designed to develop proficiency in the language for highly motivated students. Students will be expected to master all of the objectives of the Level IV course in a more rigorous and accelerated manner. The courses in French, German, Russian, and Spanish seek to develop all skills emphasizing language for communication using authentic materials in preparation for further Advanced Placement study. The Advanced Latin course seeks to develop all skills emphasizing literal translation of passages, analysis of grammar and rhetorical devices, discussion of motifs and general themes, analysis of characters and situations and free response essays in preparation for further AP Latin study.

Schools offering courses:

French: 3, 6, 7, 8, 9, 10, 11, 12

German: 6, 8, 12

Latin: 3, 9

Russian: 8

Spanish: 3, 6, 7, 8, 9, 10, 11, 12
Hispanic literature. The course will guide students to acquire
sufficient proficiency in Spanish language to read, understand, and discuss selected works from both Peninsular and Hispanic literature. Throughout the course students will do close readings from all genres, including poetry, that they will analyze orally and in writing. They will also compose expository essays on related topics. The critical reading of literature develops an understanding not only of linguistic complexity and cultural identity, but also of certain universal human truths. The student will learn and use some practical and necessary strategies to include expressing his/her ideas through timed writings, identifying the key features and elements of a text, detecting themes, comparing and contrasting, composing one’s thoughts, writing an outline, brainstorming in small groups, and fine-tuning language skills. These skills of critical thinking and writing in Spanish will serve the students not only in their college years, but also in their chosen careers. Students are required to take the AP Language Examination which is administered in May.

Schools offering course: 6, 7, 10, 12

AP LATIN VERGIL
Grades: 10-12 Credit: 1
Prerequisite: Successful completion of Advanced Latin Language III or IV, Latin IV, or Latin V and teacher recommendation

The AP Latin Course is parallel to a middle-level or sophomore college course. The course will concentrate on developing the following skills: writing literal English translations of selected Latin passages; defining specific words and/or phrases in context; identifying the content and significance of short excerpts from the required readings, analyzing characteristics or noteworthy features of the authors mode of expression, word choice and placement, imagery, figures of speech, and sound and metrical effects; discussing particular motifs or general themes in specific passages and in the poem as a whole; and analyzing characteristics or situations as portrayed in specific passages. In applying these skills the student will learn to support any observations in paragraphs or essay form, while citing the specific Latin and English in selected passages. The course will concentrate on Vergil’s Aeneid, although other dactylic hexameter works will be read in preparation for the Advanced Placement Examination. Students are required to take the AP Language Examination which is administered in May.

Schools offering course: 3

AP SPANISH LANGUAGE
Grades: 10-12 Credit: 1
Prerequisite: Successful completion of Advanced Language III or IV, Level IV, Level V, or Spanish for Fluent Speakers III and teacher recommendation

The AP Spanish Literature course is designed to be comparable to a third year college/university course on Peninsular and Hispanic literature. The course will guide students to acquire

Schools offering courses:
French: 3, 6, 7, 8, 9, 10, 11, 12
German: 7, 8, 12
Italian: 7
Russian: 7, 8
Spanish: 3, 6, 7, 8, 9, 10, 11, 12

CAMBRIDGE PROGRAMME

IGCSE FRENCH III
IGCSE SPANISH III
IGCSE ITALIAN III
Grades: 10-12 Credit: 1
Prerequisite: Level I, Level II (or equivalency test), and teacher recommendation

Students continue to develop proficiency in listening, speaking, reading, and writing with increased emphasis on consistent and sustained language using more complex grammatical structures. Reading skills continue development through the use of more challenging authentic materials. Students increase awareness and appreciation of the culture and civilization of the countries where each language is spoken. Assessment of the four skills will include an external student examination and course work evaluations by the instructor.

Schools offering course:
Italian: 4
French: 1, 4
Spanish: 1, 4

AICE FRENCH IV (AS)
AICE SPANISH IV (AS)
Grade: 11 Credit: 1
Prerequisite: Successful completion of IGCSE III and teacher recommendation

The objectives of this course are based on an accelerated, international curriculum. Students will communicate confidently and clearly in the target language and will be able to exchange views and opinions during sustained conversations. Also, they will demonstrate a capacity to draw on the target language source material in order to produce a piece of composition in the target language presenting ideas in a coherent sequence. Through external examinations in speaking, listening, reading and writing students can qualify for an Advanced International Certificate of Education Diploma (AICE) and Advanced Placement credit in Language.

Schools offering courses: 1, 4

School Number Code:
1 – Brentsville 4 – Potomac 7 – Hylton 10 – Freedom 99 – Virtual
2 – Gar-Field 5 – Stonewall 8 – Forest Park 11 – Patriot
3 – Osbourn Park 6 – Woodbridge 9 – Battlefield 12 – Colgan
AICE FRENCH V (A) LITERATURE
AICE SPANISH V (A) LITERATURE

Grade: 12               Credit: 1
Prerequisite: Successful completion of AICE Level IV (AS)
(grade “B”) and teacher recommendation

The objectives of this course are based on an accelerated,
international curriculum. The A-Level course builds on the
language skills gained at IGCSE or AS Level, and is the ideal
foundation for the university-level study or to improve career
prospects. Students will learn how to use the language in a
variety of situations. They will be expected to handle texts and
other source materials, extracting information in order to respond
to specific tasks. Through their studies, students can expect to
achieve greater fluency, accuracy, and confidence in the target
language. Through external examinations in speaking, reading,
essay writing, and direct writing using the target language texts,
students can earn an A-level credit towards the Advanced
International Certificate of Education (AICE) Diploma and Advanced
Placement credit.

Schools offering course: 1, 4

ADVANCED MIDDLE YEARS PROGRAM
FRENCH III
SPANISH III

Grades: 9-10               Credit: 1
Prerequisite: French II or Spanish II or equivalent and teacher
recommendation

This course is part of the IB sequence to prepare students for
completion of the IB Program and the external exam in level V.
Students will be able to: use French or Spanish effectively as a
means of practical communication; gain insight into the life and
civilization of the communities where the language is spoken,
and into the local and standard aspects of language; have
positive attitudes towards speakers of other languages and an
appreciation of, and empathy for, other cultures; and have a basis
of communication skills necessary for future study in the IB World
Language strand of courses. The global contexts and Assessment
Criteria will be used as a means of broadening student experience
on knowledge and skills. This course will prepare students for the
IB French or Spanish IV course.

Schools offering course: 2, 5

IB PROGRAM

PRE-DIPLOMA PROGRAM FRENCH II
PRE-DIPLOMA PROGRAM SPANISH II

Grades: 9-10               Credit: 1
Prerequisite: French I or Spanish I or equivalent and teacher
recommendation

This course is part of the IB sequence to prepare students for
completion of the IB Program and the external exam in level V.
Students will be able to: use French or Spanish effectively as a
means of practical communication; gain insight into the life and
civilization of the communities where the language is spoken,
and into the local and standard aspects of language; have
positive attitudes towards speakers of other languages and an
appreciation of, and empathy for, other cultures; and have a basis
of communication skills necessary for future study in the IB World
Language strand of courses. The integration of the Adv-MYP
Global Concepts and Assessment Criteria will be used as a means
of broadening student experience and helping students to develop
attitudes and values based on knowledge and skills. This course
will prepare students for the Adv-MYP French or Spanish III course.

Schools offering course: 2, 5

IB AB INITIO FRENCH I
IB AB INITIO SPANISH I

Grade: 11               Credit: 1
Prerequisite: Student must have two or three years of
another world language not offered at the school and teacher
recommendation

Students demonstrate, through the use of authentic materials,
the skills of listening, speaking, reading, and writing in everyday
situations in preparation for an IB exam at the end of AB Initio II.
Students will be expected to master all the objectives of the Level I
and II curriculum in a rigorous and accelerated manner.

Schools offering course: 2, 5

IB AB INITIO FRENCH II
IB AB INITIO SPANISH II

Grade: 11-12               Credit: 1
Prerequisite: Successful completion of IB AB Initio French I or
Spanish I

The emphasis for study continues on all four skills of
communication: listening, speaking, reading, and writing. Students
continue to master the essential elements and the development
of advanced vocabulary to use language proficiently in everyday
situations. This advanced course is designed to strengthen fluency
and proficiency in oral and written French and Spanish and to
prepare those students who will be taking the IB AB Initio Exam.

Schools offering course: 2, 5
**IB SPANISH IV (SL)**
**IB SPANISH IV (HL)**
Grades: 11-12
Prerequisite: Successful completion of Adv-MYP Level III; can take in grade 10 if started sequence in middle school
IB World Language IV is designed to develop proficiency in highly motivated language students. Students will be expected to master all the objectives of the Level IV curriculum in a more rigorous and accelerated manner. The course seeks to develop all skills emphasizing language for communication, using authentic materials in preparation for the IB Language B Exam. An introduction to the IB Language B Program will be an integral part of this class.
Schools offering course: 2, 5

**IB FRENCH IV (SL)**
**IB FRENCH IV (HL)**
Grade: 12
Prerequisite: Successful completion of IB Level IV
This is an advanced level course designed to strengthen fluency and proficiency in both oral and written world languages and to prepare students for the IB Language B Exam. The student will be able to speak the language with sufficient accuracy to participate in formal and informal conversations with ease. The student will be able to appreciate, discuss and comment (orally and in writing) on various literary forms. The in-depth study of literary works, contemporary articles and the review of complex linguistic structures will substantiate the course. Compositions will be on literary and issue-oriented themes. Self-expression will be encouraged through individual and group activities, oral presentations, and writing assignments.
Schools offering course: 2, 5

**IB SPANISH V (SL)**
**IB SPANISH V (HL)**
Grade: 12
Prerequisite: Successful completion of IB Language B Exam. The development of all language skills-listening, speaking, reading, writing-continues, with emphasis on using the language in realistic contexts with authentic materials, to include films, recordings, newspapers and magazines. Selected literary works are included. Examples and questions from past IB exams are used as learning tools at appropriate times throughout the course. Students are required to take the higher level examination.
Schools offering course: 2, 5

**IB FRENCH V (SL)**
**IB FRENCH V (HL)**
Prerequisite: Four years of French/Spanish or equivalency or test and permission of instructor. IB French/Spanish IV is preferred immediately prior to this course
IB French or Spanish V (HL) is the second segment of a two-year series that prepares students to take the IB French or Spanish Exam. The development of all language skills-listening, speaking, reading, writing-continues, with emphasis on using the language in realistic contexts with authentic materials, to include films, recordings, newspapers and magazines. Selected literary works are included. Examples and questions from past IB exams are used as learning tools at appropriate times throughout the course. Students are required to take the higher level examination.
Schools offering course: 2, 5

**IB SPANISH A1 (SL) LANGUAGE AND LITERATURE**
**IB SPANISH A1 (HL) LANGUAGE AND LITERATURE**
Grades: 11-12
Prerequisite: IB Fluent Speakers of Spanish or equivalent
This course is designed for native/heritage Spanish-speaking students at the high school level in the IB Program. It recognizes the natural skill of native/heritage speakers and emphasizes expansion and not replacement of the student’s existing language. Students will use the language for purposes and situations involving sophisticated discussion, argument and debate. The course will tap the natural potential of native/heritage speakers to focus on the enhancement of skill acquisition, enhance natural oral and aural skills, instill pride in a rich heritage, and allow students to succeed to their full potential. The course is based on the study of both language and literature.
Schools offering course: 2, 5

**IB SPANISH IV (SL)**
**IB SPANISH IV (HL)**
Grades: 11
Prerequisite: Three years of French/Spanish or equivalency or test and permission of instructor. IB French/Spanish III is preferred immediately prior to this course
IB Spanish or French IV (HL) is the first segment of a two-year series that prepares students to take the IB French or Spanish Exam. The development of all language skills-listening, speaking, reading, writing-continues, with emphasis on using the language in realistic contexts with authentic materials, to include films, recordings, newspapers and magazines. Selected literary works are included. Examples and questions from past IB exams are used as learning tools at appropriate times throughout the course. Students are required to take the higher level examination.
Schools offering course: 2, 5

**IB SPANISH V (SL)**
**IB SPANISH V (HL)**
Prerequisite: Successful completion of Adv-MYP Level III; can take in grade 10 if started sequence in middle school
IB World Language IV is designed to develop proficiency in highly motivated language students. Students will be expected to master all the objectives of the Level IV curriculum in a more rigorous and accelerated manner. The course seeks to develop all skills emphasizing language for communication, using authentic materials in preparation for the IB Language B Exam. An introduction to the IB Language B Program will be an integral part of this class.
Schools offering course: 2, 5

**IB FRENCH IV (SL)**
**IB FRENCH IV (HL)**
Grade: 12
Prerequisite: Successful completion of IB Level IV
This is an advanced level course designed to strengthen fluency and proficiency in both oral and written world languages and to prepare students for the IB Language B Exam. The student will be able to speak the language with sufficient accuracy to participate in formal and informal conversations with ease. The student will be able to appreciate, discuss and comment (orally and in writing) on various literary forms. The in-depth study of literary works, contemporary articles and the review of complex linguistic structures will substantiate the course. Compositions will be on literary and issue-oriented themes. Self-expression will be encouraged through individual and group activities, oral presentations, and writing assignments.
Schools offering course: 2, 5

**IB SPANISH A1 (SL) LANGUAGE AND LITERATURE**
**IB SPANISH A1 (HL) LANGUAGE AND LITERATURE**
Grades: 11-12
Prerequisite: IB Fluent Speakers of Spanish or equivalent
This course is designed for native/heritage Spanish-speaking students at the high school level in the IB Program. It recognizes the natural skill of native/heritage speakers and emphasizes expansion and not replacement of the student’s existing language. Students will use the language for purposes and situations involving sophisticated discussion, argument and debate. The course will tap the natural potential of native/heritage speakers to focus on the enhancement of skill acquisition, enhance natural oral and aural skills, instill pride in a rich heritage, and allow students to succeed to their full potential. The course is based on the study of both language and literature.
Schools offering course: 2, 5
**GENERAL CROSS-CURRICULAR**

Graduation requirements are located in the “General Information” section.

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**IB THEORY OF KNOWLEDGE (TOK)**

**Grade:** 12  
**Credit:** 1  
**Prerequisite:** IB diploma candidacy or at least four IB classes taken concurrently

IB Theory of Knowledge is a course required for IB Diploma candidates. It is designed to foster in students a habit of mind that reflects on human ways and limits of knowing as well as on the human ability to communicate these ways of knowing. Students will explore fundamental questions of epistemology by reflecting and questioning the basis of knowledge and experience, examining cultural and ideological bias, and by formulating rational arguments and value judgments of their own. Academic disciplines examined include language, history, logic, science, mathematics, ethics, and aesthetics. The course includes an externally assessed paper and an internally assessed oral presentation.

Schools offering course: 2, 5

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**AICE THINKING SKILLS (A LEVEL)**

**Grades:** 11-12  
**Credit:** 1  
**Prerequisite:** Successful completion of at least one Cambridge course and teacher recommendation

AICE Thinking Skills is designed to develop general thinking processes and skills. Developing and improving these skills will strengthen the study of all subject areas, will help to insure success in post-secondary studies, and will enhance job performance. Content includes applied arithmetic, evaluating evidence, evaluating and presenting an argument, elements of reasoning, and evaluation of reasoning. Successful completion of the end of course exam may be used toward an AICE certificate or an AICE diploma. This course is the second year of a two year sequence option for AICE Thinking Skills.

Schools offering course: 1, 4

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**AP COMPUTER SCIENCE PRINCIPLES**

**Grades:** 9-12  
**Credit:** 1  
**Prerequisite:** Algebra I

The AP Computer Science Principles course is designed to be equivalent to a first-semester introductory college computing course. In this course, students will develop computational thinking skills vital for success across all disciplines, such as using computational tools to analyze and study data and working with large data sets to analyze, visualize, and draw conclusions from trends. The course engages students in the creative aspects of the field by allowing them to develop computational artifacts based on their interests. Students will also develop effective communication and collaboration skills by working individually and collaboratively to solve problems, and will discuss and write about the impacts these solutions could have on their community, society, and world.

This course may not be used for a math credit. This course is equivalent to the Software Engineering (PLTW) course. Therefore, students who have taken the Software Engineering (PLTW) course should not enroll in this AP Computer Science course as additional credit will not be granted.

Schools Offering Course: 3, 4, 10, 12

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**LEADERSHIP DEVELOPMENT I, II, III**

**Grades:** 9-12  
**Credit:** 1  
**Prerequisite:** Application and interview

Students will learn about the aspects of leadership by looking at historical and modern examples. Planning and implementing school activities will allow the students the practical application of leadership theory. Through the practice of planning, coordinating, and implementing school wide activities, students will be exposed to a wide variety of leadership experiences. Each student enrolled in the course is assigned a position in which they are responsible for specific tasks that support the student body.

Schools offering course: 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

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**ATHLETIC AND SPORTS LEADERSHIP DEVELOPMENT**

**Grades:** 9-12  
**Credit:** 1

This course provides leadership skills and lessons for students that participate in athletics and want to extend their knowledge of being a leader. Upon completion of this course, students will understand the importance of teambuilding, create mission and vision statements, develop refined public speaking skills, examine the importance of reflection, and assess the value of building relationships within the team and with coaches.

Schools offering course: 6, 9, 10

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**AP SEMINAR**

**Grade:** 11  
**Credit:** 1  
**Prerequisite:** Successful completion of at least one AP course, and teacher recommendation

The Capstone curriculum is designed to further develop inquiry and research skills as applied to topics of global relevance. The program helps foster communication, collaboration, and creative skills to improve college and career readiness and success. Students participating in this program have required tasks that include a team project, and individual presentation, and a written exam.

Schools offering course: 3, 6, 7, 8, 9, 11, 12

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**AP RESEARCH**

**Grade:** 12  
**Credit:** 1  
**Prerequisite:** Successful completion of the AP Seminar and teacher recommendation

This course cultivates the skills and discipline necessary to conduct independent research in order to produce and defend a scholarly academic thesis. The course offers an opportunity for students to explore an academic topic, problem, or issue of individual interest. Through this exploration, students design, plan and conduct a yearlong mentored, research-based investigation to address a research question. The course culminates in an academic thesis paper and a presentation with an oral defense.

Schools offering course: 3, 6, 7, 8, 9, 11, 12
IB PERSONAL AND PROFESSIONAL SKILLS
Grades: 11-12
Credit: 1
Weighted: Yes (1.0W) Dual Enrolled: No
Prerequisite: Enrollment in IB Program
This course is designed to introduce students to life skills. In this model, the learner uses a range of skills to make sense of the world and develops skills with an emphasis on thinking critically and ethically and communicating effectively.
Schools offering course: 2

AICE GLOBAL PERSPECTIVES
Grades: 11-12
Credit: 1
The focus of AICE Global Perspectives is on developing the ability to think, speak, and write critically about a range of global issues where there is always more than one point of view. Students will become aware of global themes and issues, viewed from personal, local, national and international perspectives, and of the connections between them. This cross-curricular program challenges students to work in groups, to present seminars, to create projects, and to publish essays. Students who sign up for AICE Global Perspectives must be self-motivated and have the ability to establish and meet deadlines. This course is recommended for juniors but is also available to seniors. The course culminates in an external assessment that provides the possibility of college credit.
Schools offering course: 1, 4
GIFTED EDUCATION

Graduation requirements are located in the “General Information” section.

GIFTED EDUCATION MULTI-DISCIPLINARY SEMINAR (GEMS)
Grade: 11
Credit: 0.5
Prerequisite: Successful completion of the 10th grade gifted education seminar program and concurrent enrollment in an AP course
This multi-disciplinary seminar course may replace the seminar program for identified gifted students in grade eleven. The class explores different dimensions of the American experience to determine what constitutes the American identity. The class is multicultural and multi-disciplinary, examining literature, history, science, customs, and visual and performing arts in the kaleidoscope of American culture.
Schools offering course: 3

GIFTED EDUCATION MULTI-DISCIPLINARY SEMINAR (GEMS)
Grade: 11
Credit: 1
Prerequisite: Successful completion of the 10th grade gifted education seminar program and concurrent enrollment in an AP course
This multi-disciplinary seminar course may replace the seminar program for identified gifted students in grade eleven. The class explores different dimensions of the American experience to determine what constitutes the American identity. The class is multicultural and multi-disciplinary, examining literature, history, science, customs, and visual and performing arts in the kaleidoscope of American culture.
Schools offering course: 9, 12

GIFTED EDUCATION MULTI-DISCIPLINARY SEMINAR (GEMS)
Grade: 12
Credit: 0.5
Prerequisite: Placement in the Prince William County Public Schools Gifted Education program and concurrent enrollment in an AP course
This multi-disciplinary seminar course may replace the seminar program for identified gifted students in grade twelve. Students will develop their conceptual, creative, critical, collaborative, and communication skills by exploring topics such as philosophy, metaphysics, and ethics. The class will also examine the epistemological structures of each academic discipline and employ critical thinking skills to evaluate the reliability and nature of knowledge. The course includes a research component.
Schools offering course: 3, 10

GIFTED EDUCATION MULTI-DISCIPLINARY SEMINAR (GEMS)
Grade: 12
Credit: 1
Prerequisite: Placement in the Prince William County Public Schools Gifted Education program or qualification as an AP Scholar
The multi-disciplinary seminar course may replace the seminar program for identified gifted students in grade twelve. Students will develop their conceptual, creative, critical, collaborative, and communication skills by exploring topics such as philosophy, metaphysics, and ethics. The class will also examine the epistemological structures of each academic discipline and employ critical thinking skills to evaluate the reliability and nature of knowledge. The course includes a research component.
Schools offering course: 6, 7, 8, 9, 11, 12

NOTE: In schools offering the IB Programme, the Theory of Knowledge (TOK) course can serve as the junior or senior gifted education seminar services for identified students enrolled in one of those classes. In schools offering the Cambridge Programme, AICE Thinking Skills or AICE Global Perspectives can serve as the junior or senior gifted education seminar services for identified students enrolled in one of those classes. In schools offering AP curriculum, GEMS or AP Seminar or AP Research can serve as the junior or senior gifted education seminar services for identified students enrolled in one of those classes.
HEALTH AND PHYSICAL EDUCATION

Graduation requirements are located in the “General Information” section.

REQUIRED COURSE SEQUENCE FOR PHYSICAL EDUCATION

HEALTH AND PHYSICAL EDUCATION I

Grades: 9-12
Prerequisite: None

Students will participate in classroom instruction and in individual and team activities designed to develop attitudes, knowledge, and skills necessary to maintain personal fitness for a lifetime. Fifty percent of the course focuses on classroom instruction in fitness, nutrition, mental health, First Aid CPR AED, family relationships, disease prevention and control, and substance abuse prevention.

Schools offering course: All

HEALTH, PHYSICAL EDUCATION, AND CLASSROOM DRIVER EDUCATION II

Grades: 9-12
Prerequisite: Successful completion of Health and Physical Education I

Students continue to participate in classroom instruction and in individual and team activities designed to develop attitudes, knowledge, and skills necessary to maintain personal fitness for a lifetime. Fifty percent of the course focuses on classroom instruction in family life education, health concepts, and classroom driver education. Classroom driver education consists of a minimum of 36 periods of structured learning experiences aimed at developing safe and efficient drivers. Completion of driver education through private instruction does not exempt the student from completing all course objectives.

Virginia Licensing Regulation
Juvenile Licensing requires a parent and student to attend a 90 minute traffic safety presentation. This requirement must be met for the student to successfully meet all of the classroom driver education certification requirements.

Schools offering course: All

ELECTIVE COURSE SEQUENCE FOR PHYSICAL EDUCATION

DRIVER EDUCATION (IN-CAR)

Grades: 10-12
Prerequisite: Learner’s Permit and enrollment in or successful completion of Classroom Driver Education. Students must complete a minimum of ten hours behind the wheel experience prior to taking In-Car Driver Education

In-Car Driver Education includes Behind-the-Wheel (BTW) instruction. The class is scheduled as an after school elective program providing the required 14 class periods needed to receive a Virginia Driver’s License. Upon completion of the two phases of the course and submission of the 45 hour driving log the student will be issued a Provisional Driver’s License (PDL). This Provisional Driver’s License is valid only after the student reaches the age of 16 and 3 months and after they have held a Virginia learner’s permit for 9 months. All students should complete all requirements for health and physical education before enrolling in the 10th grade Driver Education Program.

Schools offering course: All

PHYSICAL EDUCATION ASSISTANT

Grades: 11-12
Prerequisite: Successful completion of Health and Physical Education I and II and approval of the department chairperson and the supervising teacher

This course offers opportunities for further positive learning experiences for the student who is interested in pursuing a career in Health and Physical Education. Emphasis is placed on assisting in the instructional program. This course may be taken more than once for credit.

Schools offering course: 1, 2, 3, 4, 5, 7, 11

AICE PHYSICAL EDUCATION

Grades: 11-12

The AICE Physical Education course will allow our student learners to have both practical and theoretical experiences. The course will cover anatomy and physiology, movement skills, and contemporary studies in sports. Learners will be encouraged to try out a range of physical activities, including team and individual sports, games, and outdoor activities, and then use the theoretical knowledge they have gained to analyze the different factors influencing performance. The course also encourages learners to understand and explain global trends in Physical Education and Sports.

Schools offering course: 1, 4
ADVANCED PHYSICAL EDUCATION – PERSONAL FITNESS
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Health and Physical Education I and II

Advanced Physical Education places emphasis on why exercise and fitness are important, what one’s own fitness needs are, and how to attain and maintain personal fitness for a lifetime. Additional emphasis is placed on the five health-related components of fitness including cardiovascular fitness, muscular strength and endurance, flexibility, and body fat control. Individual student fitness levels are assessed. Instruction includes emphasis on health risk factors related to lifestyles and how nutrition affects wellness. The course may include classroom instruction as well as individual and team activity. This course may be taken more than once for credit.

Schools offering course: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

ADVANCED PHYSICAL EDUCATION – LIFETIME AQUATIC FITNESS AND ACTIVITIES AND LIFEGUARD TRAINING
Grades: 11-12 Credit: 1

Students will demonstrate the skills and understanding necessary to earn the certification of Lifeguard. Students will also participate in a variety of aquatic activities and sports to include swimming for fitness, kayaking, glide fit board workouts, water aerobics, aqua jogging, and water polo. The lifeguard certification will provide job readiness and skills for students to enter the work force. The aquatic activities and sports will promote fitness opportunities for students and encourage lifetime wellness.

Schools offering course: 12

ADVANCED PHYSICAL EDUCATION – WEIGHT TRAINING – EMPHASIS ON WEIGHT TRAINING AND CONDITIONING
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Health and Physical Education I and II

This Advanced Physical Education section places emphasis on weight training and conditioning. The student will understand how and why weight training and conditioning benefits the student’s ability to perform athletically. The student will learn to assess one’s own fitness needs and how to attain and maintain personal fitness for a lifetime. Additional emphasis is placed on the five health-related components of fitness including cardiovascular fitness, muscular strength and endurance, flexibility, and body fat control. Individual student fitness levels will be assessed and the students will formulate personal goals and develop individual fitness programs. Instruction includes emphasis on health risk factors related to lifestyles and how nutrition affects wellness. This course may be taken more than once for credit.

Schools offering course: All
### PWCS Secondary Mathematics Course Sequence Examples

#### Leading to an ADVANCED Studies Diploma

**Advanced Placement (AP)**

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<th>5 HS Math Credits</th>
<th>6 HS Math Credits</th>
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<td>Precalculus with Trig for AB</td>
<td>AP Calculus BC*</td>
<td>AP Computer Science*</td>
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<td>or AP Statistics*</td>
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<td>Algebra II SOL Test</td>
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<tr>
<td>8</td>
<td>Pre-AP Algebra I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Pre-AP Geometry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Pre-AP Algebra I</td>
</tr>
</tbody>
</table>

### Note:
- Many other sequences are possible with additional math electives, such as Trigonometry; Discrete Math; and Probability/Statistics; Computer Mathematics; and AP Computer Science.
- Students in Cambridge or International Baccalaureate Specialty Programs take comparable courses.
- In high school, students take the SOL tests only if they have not earned verified credit for graduation and/or satisfied federal testing requirements.
- * These courses offer possible college credits with a qualifying score on external exams and college acceptance.
- **Note:** Multiple courses at a grade level are listed from lower level to higher level with higher level on top.
Students are encouraged to take mathematics all four years of high school. Students are better prepared for taking the SAT or taking a Math Placement exam after high school if they have completed or are enrolled in Algebra II.

Many other sequences are possible with additional math electives, such as Trigonometry; Discrete Math; and Probability/Statistics; Advanced Computer Math; and AP Computer Science.

In high school, students take the SOL tests only if they have not earned verified credit for graduation and/or satisfied federal testing requirements.

* These courses offer possible college credits w/a qualifying score on external exams and college acceptance.

**Note:** Multiple courses at a grade level are listed from lower level to higher level with the higher level on top.
PWCS Secondary Mathematics Course Sequence Examples
Leading to an ADVANCED Studies Diploma
Cambridge Programme

<table>
<thead>
<tr>
<th>Grade</th>
<th>4 High School (HS) Math Credits</th>
<th>5 HS Math Credits</th>
<th>6 HS Math Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>AICE Math I* or Precalculus with Trig for AB</td>
<td>AICE Math II* or Precalculus for BC</td>
<td>AICE Mechanics* (Level A)</td>
</tr>
</tbody>
</table>

or Advanced Math

<table>
<thead>
<tr>
<th>Grade</th>
<th>Algebra II SOL Test</th>
<th>IGSCE Algebra II/Trig or Algebra II</th>
<th>AICE Math I*</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td></td>
<td>Geometry SOL Test</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geometry</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Algebra I SOL Test</th>
<th>Pre-AP Algebra I with Alg II extensions</th>
<th>Pre-AP Geometry includes extensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td></td>
<td>Geometry SOL Test</td>
<td>Geometry SOL Test</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pre-AP Algebra I with Alg II extensions</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Math 8 Pre-Algebra</th>
<th>Pre-AP Algebra I with Alg II extensions</th>
<th>Pre-AP Algebra I with Alg II extensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>covers 8th grade standards</td>
<td>Algebra I SOL Test</td>
<td>Algebra I SOL Test</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math 7</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Math 7 Extended half of Grade 7 and all of Grade 8 Math 8 SOL Test</th>
<th>Pre-AP Algebra I with Alg II extensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td></td>
<td>Geometry SOL Test</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math 6</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Math 6 Extended all Grade 6 and half of Grade 7 Math 7 SOL Test</th>
<th>Math 7 Extended half of Grade 7 and all of Grade 8 Math 8 SOL Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number</th>
<th>Course Description</th>
<th>Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>AICE Math I* or Precalculus with Trig for AB</td>
<td>High School</td>
</tr>
<tr>
<td>11</td>
<td>Algebra II SOL Test</td>
<td>High School</td>
</tr>
<tr>
<td>10</td>
<td>Geometry SOL Test</td>
<td>High School</td>
</tr>
<tr>
<td>9</td>
<td>Algebra I SOL Test</td>
<td>High School</td>
</tr>
<tr>
<td>8</td>
<td>Math 8 Pre-Algebra</td>
<td>High School</td>
</tr>
<tr>
<td>7</td>
<td>Math 7</td>
<td>High School</td>
</tr>
<tr>
<td>6</td>
<td>Math 6</td>
<td>High School</td>
</tr>
</tbody>
</table>

Many other sequences are possible with additional math electives, such as Trigonometry; Discrete Math; Probability/Statistics; Computer Math; and AP Computer Science.

Students in Advanced Placement or International Baccalaureate Programs take comparable courses.

In high school, students take the SOL tests only if they have not earned verified credit for graduation and/or satisfied federal testing requirements.

*These courses offer possible college credits w/a qualifying score on external exams and college acceptance.

**Note:** Multiple courses at a grade level are listed from lower level to higher level with higher level on top.
PWCS Secondary Mathematics Course Sequence Examples
Leading to an ADVANCED Studies Diploma
International Baccalaureate Programme

<table>
<thead>
<tr>
<th>Grade</th>
<th>4 High School (HS) Math Credits</th>
<th>5 HS Math Credits</th>
<th>6 HS Math Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>IB Math: Analysis and Approaches I SL or AP Statistics* or Advanced Math</td>
<td>IB Math: Analysis and Approaches II HL* or IB Math: Analysis and Approaches II SL* or AP Statistics*</td>
<td>IB Math: Analysis and Approaches II HL* or IB Math: Analysis and Approaches II SL*</td>
</tr>
<tr>
<td>10</td>
<td>Geometry or Advanced Math</td>
<td>IB Math: Analysis and Approaches II HL* or IB Math: Analysis and Approaches II SL*</td>
<td>AP Statistics*</td>
</tr>
<tr>
<td>8</td>
<td>Algebra I or Adv-MYP Algebra I</td>
<td>Pre-AP Algebra I or Adv-MYP Algebra I</td>
<td>Algebra I SOL Test</td>
</tr>
<tr>
<td>7</td>
<td>Math 7 or Pre-AP Algebra I</td>
<td>Pre-AP Geometry or Adv-MYP Geometry</td>
<td>Pre-AP Algebra I or Adv-MYP Algebra I</td>
</tr>
<tr>
<td>6</td>
<td>Math 6 or Pre-AP Geometry</td>
<td>Pre-AP Geometry or Adv-MYP Geometry includes extensions</td>
<td>Pre-AP Geometry or Adv-MYP Algebra I</td>
</tr>
</tbody>
</table>

Many other sequences are possible with additional math electives, such as Trigonometry, Discrete Math, and Probability/Statistics; Computer Math; and AP Computer Science.

Students in Cambridge or Specialty Programs with Advanced Placement courses take comparable courses. In high school, students take the SOL tests only if they have not earned verified credit for graduation and/or satisfied federal testing requirements.

* These courses offer possible college credits w/a qualifying score on external exams and college acceptance.

Note: Multiple courses at a grade level are listed from lower level to higher level with higher level on top.
The Governor's School (GS) Math Placement test will determine junior year math placement.

In high school, students take the SOL tests only if they have not earned verified credit for graduation and/or satisfied federal testing requirements.

The Pre-Governor School provides the option to concurrently enroll in Pre-AP Geometry and Algebra II. * Courses are also offered as dual enrollment.

**Note:** GS courses for a given grade identify the courses to be taken in Semester 1 (lower) and Semester 2. (upper)
### PWCS Secondary Mathematics Course Sequence Examples

**Leading to an ADVANCED Studies Diploma**

**Thomas Jefferson High School for Science and Technology (Grades 9-12)**

<table>
<thead>
<tr>
<th>Grade</th>
<th>5 High School (HS) Math Credits</th>
<th>6 HS Math Credits and 6 George Mason Credits</th>
<th>7 HS Math Credits and 12 George Mason Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>12</strong></td>
<td>AP Calculus BC (year)</td>
<td>Linear Algebra or Math Techniques (Spring)†</td>
<td>Complex Analysis (Spring)†</td>
</tr>
<tr>
<td></td>
<td>or</td>
<td>Multivariable Calc (Fall)†</td>
<td>Differential Equations (Fall)†</td>
</tr>
<tr>
<td></td>
<td>AP Calculus AB (year)</td>
<td>AP Calculus BC (year)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TJ Math 5: Precalculus (Spring) and</td>
<td>TJ Math 4: Trigonometry (Fall)</td>
<td>TJ Math 5: Precalculus (Summer)</td>
</tr>
<tr>
<td><strong>11</strong></td>
<td>TJ Math 4: Trigonometry (Fall)</td>
<td>TJ Math 5: Precalculus (Spring) and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TJ Math 3: Alg II SOL Test (Spring) and</td>
<td>TJ Math 4: Trigonometry (Fall)</td>
<td></td>
</tr>
<tr>
<td><strong>10</strong></td>
<td>TJ Math 2: Coordinate Geom Geometry SOL Test (Fall)</td>
<td>TJ Math 3: Alg II SOL Test and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TJ Math 1 (Spring) Euclidean Geometry and</td>
<td>TJ Research Statistics 1 (Fall)</td>
<td>TJ Math 3: Alg II SOL Test (Fall)</td>
</tr>
<tr>
<td></td>
<td>TJ Research Statistics 1 (Fall)</td>
<td>TJ Research Statistics 1 (Fall)</td>
<td>TJ Research Stat 1 (Summer)</td>
</tr>
<tr>
<td><strong>9</strong></td>
<td>Pre-AP Algebra I with Alg II extensions Algebra I SOL Test</td>
<td>TJ Math 3: Alg II SOL Test and</td>
<td>TJ Math 4: Trigonometry (Spring)</td>
</tr>
<tr>
<td></td>
<td>Math 7 Extended half of Grade 7 and all Grade 8 Math 8 SOL Test</td>
<td>TJ Math 3: Alg II SOL Test and</td>
<td>TJ Math 3: Alg II SOL Test (Fall)</td>
</tr>
<tr>
<td><strong>8</strong></td>
<td>Math 6 Extended all Grade 6 and half of Grade 7 Math 6 SOL Test</td>
<td>Pre-AP Geometry with extensions Geometry SOL Test</td>
<td></td>
</tr>
<tr>
<td><strong>7</strong></td>
<td>Math 7 Extended half of Grade 7 and all Grade 8 Math 8 SOL Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6</strong></td>
<td>Math 6 Extended all Grade 6 and half of Grade 7 Math 6 SOL Test</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A diagnostic test will be administered to all students in the latter part of the TJ Stats 1 course, to help confirm the most appropriate course in which students will begin the sequence (TJ Math 1, TJ Math 2, TJ Math 3, etc)

† Course is also offered as dual enrollment. Other non-dual enrollment electives are available after completing Calculus.

In high school, students take the SOL tests only if they have not earned verified credit for graduation and/or satisfied federal testing requirements.

Please visit [https://www.tjhsst.edu/research-academics/math-cs/math/math-faq.html](https://www.tjhsst.edu/research-academics/math-cs/math/math-faq.html) for further information.
Mathematics

Graduation requirements are located in the “General Information” section.

**Algebra I, Parts 1 and 2**

Grades: 9-10

Credit: 1 Elective Credit for Part 1 and 1 Math Credit for Part 2 when student has passed both parts

Prerequisite: Math 8 (Pre-Algebra)

Note: Students with disabilities eligible for credit accommodations receive two math credits for completing both courses.

Algebra I, in two parts, is offered for students who need additional time to complete the Algebra I curriculum. These two courses employ an interactive, hands-on approach to teaching algebra concepts. This two-part course uses the graphing calculator and real-world and workplace applications as the platform for learning algebra. Emphasis is placed on making connections in algebra to arithmetic, geometry, and statistics. Algebra I, Part 1 and Algebra I, Part 2 are each year-long classes. Schools may double block the courses so that they meet every day for a full block of time over the full year. This gives students the chance to earn the first math credit by the end of the 9th grade year in addition to an elective credit for Part 1. Schools may allow students to take Part 1 in the 9th grade year and Part 2 in the 10th grade. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: All

**Geometry, Parts 1 and 2**

Grades: 11-12

Credit: 1 Elective Credit for Part 1 and 1 Math Credit for Part 2 when student has passed both parts

Prerequisite: Algebra I or Algebra I, Parts 1 and 2

Note: Students with disabilities eligible for credit accommodations may receive two math credits for completing both courses. If they have also taken Parts 1 and 2 of Algebra I, they would receive three math credits and one elective credit for the four parts of the two courses.

Geometry, in two parts, is offered for students who need additional time to complete the Geometry curriculum. Geometry, Part 1 and Geometry, Part 2 are each year-long classes. Schools may double block the courses so that they meet every day for a full block of time over a full year or offer them over two years. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 10

**Algebra I**

Grades: 7-9

Credit: 1

Prerequisite: Math 7 Extended or Math 8 (Pre-Algebra)

Algebra provides a systematic way to represent mathematical relationships and analyze change. Students will make connections and build relationships between algebra and arithmetic, geometry, and probability and statistics. Connections will also be made to other subject areas through practical applications. Students are required to use algebra as a tool for representing and solving a variety of practical problems. Tables and graphs will be used to interpret algebraic expressions, equations, and inequalities and to analyze behaviors of functions. Graphing calculators, computers, and other appropriate technology tools will be used to assist in teaching and learning. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 4, 6, 12, and All Middle Schools

**Geometry**

Grades: 9-11

Credit: 1

Prerequisite: Algebra I or Algebra I, Parts 1 and 2

All students are expected to successfully complete Geometry. This course includes emphasis on two- and three-dimensional reasoning skills, coordinate and transformational geometry, and the use of geometric models to solve problems. A variety of real-world applications and general problem-solving techniques, including algebra skills, are used to implement these standards. Calculators, computers, graphing utilities (graphing calculators or computer graphing simulators), dynamic geometry software, and other appropriate technology tools will be used. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 3, 6, 7, 8, 9, 10, 11, 12

**Algebra, Functions, and Data Analysis**

Grades: 10-12

Credit: 1

Prerequisite: Algebra I

This course is designed for students who have completed Algebra I but need time to further develop algebraic to ensure success in Algebra II. Within the context of mathematical modeling and data analysis, students will study functions and their behaviors, inequalities, probability, experimental design, and analysis of data. Data will be generated by practical applications arising...
from science, business, and finance. Students will solve problems that require the formulation of linear, quadratic, exponential, or logarithmic equations or a system of equations.

**Note: A student may not receive credit for this course after receiving credit for Algebra II.**

**Schools offering course: All**

### ALGEBRA II

**Grades: 9-12**

**Credit: 1**

**Prerequisites: Algebra I and Geometry**

All students preparing for post-secondary and advanced technical studies are expected to achieve the Algebra II standards. A thorough treatment of advanced algebraic concepts will be provided through the study of functions, “families of functions,” equations, inequalities, systems of equations and inequalities, polynomials, rational and radical equations, complex numbers, and sequences and series. Emphasis will be placed on practical applications and modeling throughout the course of study. Graphing utilities (graphing calculators or computer graphing simulators), computers, spreadsheets, and other appropriate technology tools will be used to assist in teaching and learning. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements. Algebra II is required for Advanced Studies Diploma.

**Schools offering course: All**

### ADVANCED MATHEMATICS

**Grades: 11-12**

**Credit: 1**

**Prerequisite: Algebra II**

Advanced Mathematics extends both algebra and trigonometry topics. Emphasis is on functions and their inverses, equations and inequalities, graph theory, matrices, sequences and series, conic sections, and logarithms. Trigonometry topics include triangular and circular definitions of the trig functions, trig identities, and solutions of trig equations. This course does not meet the prerequisite for Calculus AB or BC.

**Schools offering course: All except 10**

### PRE-AP GEOMETRY

**Grades: 8-10**

**Credit: 1**

**Prerequisite: Pre-AP Algebra I**

This course includes emphasis on two- and three-dimensional reasoning skills, coordinate and transformational geometry, and the use of geometric models to solve problems. Students will use a variety of applications and problem-solving techniques including algebraic skills. The intent of this course is to provide students with many opportunities to explore, conjecture, reason logically, formulate and solve problems, and communicate mathematically. Calculators, computers, graphing calculators or computer graphing simulators, dynamic geometry software, and other appropriate technology tools will be used to assist in teaching and learning. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

**Schools offering course: 3, 6, 7, 8, 9, 10, 11, 12**

### ADVANCED ALGEBRA II – TRIGONOMETRY

**Grades: 9-11**

**Credit: 1**

**Prerequisite: Pre-AP Algebra II, advanced Geometry, and teacher recommendation**

Pre-AP Algebra II/Trigonometry is taught at an accelerated pace. The content of the course is the same as the full year of Algebra II and the semester Trigonometry class. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements. Algebra II is required for the Advanced Studies Diploma.

**Schools offering course: 3, 6, 7, 8, 9, 10, 11, 12**

### PRECALCULUS WITH TRIGONOMETRY FOR AB

**Grades: 10-12**

**Credit: 1**

**Prerequisite: Algebra II and teacher recommendation**

Precalculus with Trigonometry for AB is a one-year preparatory course for AP Calculus AB. Basic course content is comprised of the algebra of real numbers, complex numbers and polynomials; exponential, polynomial and logarithmic functions; circular functions and trigonometry.

**Schools offering course: 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12**

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**ADVANCED PLACEMENT PROGRAM COURSES**

**PRE-AP ALGEBRA I**

**Grades: 7-9**

**Credit: 1**

**Prerequisite: Math 7 Extended or Math 8 (Pre-Algebra)**

This course is designed for those students who have completed the Middle School Extended Mathematics curriculum prior to 8th grade or completed 8th grade Pre-algebra with a “B” or better. Pre-AP Algebra I students are expected to master all of the Algebra I objectives as well as some of the Algebra II objectives. Students taking this course are expected to continue their studies with an Advanced Geometry course followed by Algebra II/Trigonometry. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

**Schools offering course: All**
PRECALCULUS FOR BC
Grades: 10-12
Prerequisite: Algebra II / Trigonometry and teacher recommendation

Precalculus for BC is a one-year preparatory course for AP Calculus BC. The course content is comprised of the algebra of real numbers, vectors, complex numbers and polynomials; exponential, polynomial and logarithmic functions; and analytic geometry.

Schools offering course: 3, 4, 6, 7, 8, 9, 10, 11, 12

AP CALCULUS AB
Grades: 11-12
Prerequisite: Precalculus with Trigonometry for AB or Precalculus for BC and teacher recommendation

AP Calculus AB explores the topics of limits/continuity, derivatives, and integrals. These ideas are examined using a multi-layered approach including the verbal, numerical, analytical, and graphical analysis of polynomial, rational, trigonometric, exponential, and logarithmic functions and their inverses. The student will be expected to relate the connections among these approaches. Students will also be required to synthesize knowledge of the topics of the course to solve applications that model physical, social and/or economic situations. These applications emphasize derivatives as rates of change, local linear approximations, optimizations and curve analysis, and integrals as Riemann sums, area of regions, volume of solids with known cross sections, average value of functions, and rectilinear motions. As mandated by the College Board, graphing calculators will be required. Students are required to take the AP Calculus AB examination which is administered in May. College credit and/or advanced placement in college is available to those students receiving a qualifying score on the AP Examination.

Schools offering course: 3, 4, 6, 7, 8, 9, 10, 11, 12

AP STATISTICS
Grades: 11-12
Prerequisite: Algebra II

The Advanced Placement Statistics course introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad conceptual themes:
• Exploring Data: observing patterns and departures from patterns, anticipating patterns
• Planning a Study: deciding what and how to measure
• Producing models using probability theory and simulation,
• Inference: drawing conclusions from sample data.

Students are required to take the AP Statistics examination which is administered in May. Students who successfully complete the course and the AP Statistics Examination may receive credit for a one-semester introductory college statistics course.

Schools offering course: All

AP CALCULUS BC
Grades: 11-12
Prerequisite: Precalculus for BC and teacher recommendation

AP Calculus BC is intended for students who have a thorough knowledge of analytic geometry and elementary functions. Although all of the elements of the AP Calculus AB course are included, this course provides a more rigorous treatment of these introductory calculus topics. The course also includes the development of the additional topics required by the College Entrance Examination Board in its syllabus for AP Calculus BC. Among these are parametric, polar, and vector functions; the rigorous definition of limit; advanced integration techniques; Simpson’s Rule; length of curves; improper integrals; Hooke’s Law; and the study of sequences and series. The use of the graphing calculator will be fully integrated into instruction and students will be called upon to confirm and interpret results of problem situations that are solved using available technology. Students are required to take the AP Calculus BC examination which is administered in May. College credit and/or advanced placement in college is available to those students receiving a qualifying score on the AP Examination.

Schools offering course: 3, 6, 7, 8, 9, 10, 11, 12

IGCSE GEOMETRY
Grades: 9-10
Prerequisite: Algebra I

IGCSE Geometry includes all objectives in the PWCS Geometry curriculum and the Virginia Standards of Learning with a strong relation to algebraic concepts such as functions and linear programming. Emphasis will be placed on recognizing, analyzing, and interpreting geometric terms, shapes, and properties. Additional topics in trigonometry, vectors, and transformations are included. Alternative activities such as projects, investigations, oral and written communication, and cooperative learning activities are a regular part of this course. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 1, 4

IGCSE ALGEBRA II – TRIGONOMETRY
Grades: 10-11
Prerequisites: Pre-AP Algebra I, IGCSE Geometry, and teacher recommendation

IGCSE Algebra II/Trigonometry is an accelerated course including all objectives in the Algebra II curriculum and Trigonometry curriculum as stated in the Virginia Standards of Learning. Further topics include binomial expansions and vectors in two dimensions. Assessment includes an external student examination and course work evaluations by the teacher. This course has an associated
Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements. Algebra II is required for Advanced Studies Diploma.

Schools offering course: 1, 4

**AICE MATHEMATICS I (AS LEVEL)**

**Grades: 11-12**

**Credit: 1**

**Prerequisite: IGCSE Algebra II/Trigonometry or Pre-calculus with Trig for AB and teacher recommendation**

AICE Mathematics I is designed to provide accelerated students a strong foundation in pre-calculus and beginning calculus concepts. They will develop an understanding of advanced mathematical principles and an appreciation of mathematics as a logical and coherent subject. The international curriculum includes essential precalculus topics and an introduction to differentiation and integration. Students will acquire the mathematical background necessary for further study at the AICE Mathematics II level. College credit is available at some universities for exemplary performance on associated exams.

Schools offering course: 1, 4

**AICE MATHEMATICS II (A LEVEL)**

**Grade: 12**

**Credit: 1**

**Prerequisite: AICE Mathematics I and teacher recommendation**

AICE Mathematics II extends the knowledge base built in AICE Mathematics I. The course follows a rigorous, international curriculum to include Advanced Placement Calculus BC topics. Further concepts and skills in mathematics are taught including the study of concepts, techniques and applications of calculus with derivatives, integrals, vectors, sequences and series. Students will increase their ability to analyze problems logically, identify and interpret relevant factors and, where necessary, select an appropriate mathematical method to solve a problem. They will be prepared to sit for the external examination leading to an Advanced International Certificate of Education Diploma. College credit is available at most universities for exemplary performance on Cambridge exams.

Schools offering course: 1, 4

**AICE MECHANICS (A LEVEL)**

**Grade: 12**

**Credit: 1**

**Prerequisite: AICE Mathematics I**

AICE Mechanics is designed to provide accelerated students a strong foundation in physics and the mathematical applications of it. They will develop an understanding of advanced mathematical principles and an appreciation of mathematics as a logical and coherent subject. The international curriculum includes an in-depth study of forces and how they apply to the movement of a body as well as concepts such as movements, Center of Mass, and Elasticity. This course is designed to complement the AICE Mathematics and the AICE Physics courses. It may be taken in conjunction with AICE Mathematics II by seniors or by seniors who completed the AICE Mathematics II class in their junior year. They will be prepared to sit for the external examination leading to an Advanced International Certificate of Education Diploma.

Schools offering course: 4

**ADVANCED MIDDLE YEARS PROGRAMME**

**ALGEBRA I**

**Grade: 9**

**Credit: 1**

**Prerequisite: 8th grade Pre-Algebra**

Adv-MYP Algebra I includes all objectives in the PWCS Algebra I curriculum and the Virginia Standards of Learning. In addition, enrichment and extension topics such as linear programming, absolute value functions, and real-life math applications are emphasized. Critical thinking skills and use of graphing calculator technology are also important components in this course. Alternative assessments such as projects, oral and written communication and cooperative learning activities are a regular part of this course. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 2, 5

**ADVANCED MIDDLE YEARS PROGRAMME**

**GEOMETRY**

**Grade: 9-10**

**Credit: 1**

**Prerequisite: Adv-MYP Algebra I or Pre-AP Algebra I**

Adv-MYP Geometry is an accelerated program of study for students interested in pursuing the IB level math courses. The course includes all objectives from the PWCS Pre-AP Geometry curriculum with particular emphasis on algebraic connections. Additional topics in trigonometry and transformational graphing are included. Graphing calculators are used throughout the course.

This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 2, 5

**ADVANCED MIDDLE YEARS PROGRAMME**

**ALGEBRA II**

**Grade: 9-11**

**Credit: 1**

**Prerequisite: Adv-MYP Geometry**

Adv-MYP Algebra II is the pre-requisite for IB Math: Applications and Interpretations SL and IB Math: Analysis and Approaches I (SL). The course incorporates and expands the knowledge from both Adv-MYP Algebra and Adv-MYP Geometry. The course includes all objectives from the PWCS Algebra II curriculum with emphasis on and completion of projects and internationalism. A graphing calculator is used throughout the course. As in all courses, students will acquire technical writing skills within the mathematics curriculum. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements. Algebra II is required for Advanced Studies Diploma.

Schools offering course: 2
ADVANCED MIDDLE YEARS PROGRAMME

ALGEBRA II – TRIGONOMETRY

Grades: 10-11
Prerequisite: Adv-MYP Geometry and teacher recommendation
Credit: 1

Adv-MYP Algebra II/Trigonometry is an accelerated course including all objectives in the Algebra II curriculum and Trigonometry curriculum as stated in the Virginia Standards of Learning. It is recommended for students with high grades in Adv-MYP Algebra I and Geometry. This course is the prerequisite for IB Math: Analysis and Approaches I HL. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements. Algebra II is required for Advanced Studies Diploma.

Schools offering course: 2, 5

IB MATH: ANALYSIS AND APPROACHES I (SL)

Grades: 10-11
Prerequisite: Adv-MYP Algebra II / Trigonometry or Pre-IBDP
Credit: 1

IB Math: Analysis and Approaches I (SL) is the first year in a two-year mathematics course that fulfills the Group 5 requirement in the IB Diploma Programme. The course is designed for math students who are preparing for studies in subjects such as chemistry, economics, psychology and business administration. The goal is to provide students with a solid foundation in pre-calculus topics such as functions and trigonometry, further extend their studies in probability and statistics, and begin their studies in calculus by exploring derivatives and integrals. Students will use technology as a tool for learning and develop an awareness of global contributions to the field of mathematics sciences. Students wishing to study subjects such as physics, engineering and technology should take the Mathematics HL course.

Schools offering course: 2, 5

IB MATH: ANALYSIS AND APPROACHES II (SL)

Grades: 11-12
Prerequisite: IB Mathematics I SL and teacher recommendation
Credit: 1

This course is the second year of the two-year sequence that meets the requirements of the IB Diploma Programme. This course builds on and extends the knowledge base of IB Math: Analysis and Approaches I (SL) to include topics in calculus. Students in this course will complete a portfolio project (mathematics exploration) and take the IB Mathematics SL examination.

Schools offering course: 2, 5

IB MATH: APPLICATIONS AND INTERPRETATIONS (SL)

Grade: 12
Prerequisite: Adv-MYP Algebra II and teacher recommendation
Credit: 1

This course is a one-year course designed for students with varied backgrounds and abilities who are interested in social sciences, humanities, certain economics, statistics and engineering courses, and the arts. The emphasis of this course is to make explicit the applications of the mathematics being taught using technology, solving practical problems and exploring mathematical models. Topics include: arithmetic sequences and series; logarithms and exponentials; functions; geometry and trigonometry; probability and statistics; and introduction to calculus. Students will complete a portfolio project (math exploration) and take the IB Math: Applications and Interpretations SL Exam.

Schools offering course: 2, 5

IB MATH: ANALYSIS AND APPROACHES I (HL)

Grade: 11
Prerequisite: Adv-MYP Algebra II/ Trigonometry and teacher recommendation
Credit: 1

IB Math: Analysis and Approaches is the first year in a two-year course that has a substantial mathematical element and is designed for students interested in extending their developing of mathematical arguments, problem solving, and exploring real and abstract applications, with and without technology. This course includes the content from Mathematics Analysis SL with additional content and at a faster pace. Topics include number and algebra from arithmetic sequences and series to solutions of systems of linear equations in three unknowns; functions including rational functions to the graphs of the absolute value of the full function; geometry and trigonometry from the distance of two points in three-dimensional space to vectors; statistics and probability from concepts of populations and samples to variance and probability densities, and calculus from the concepts of limits and derivatives to the Maclaurin series.

Schools offering course: 2, 5

IB MATH: ANALYSIS AND APPROACHES II (HL)

Grade: 12
Prerequisite: IB Mathematics I HL and teacher recommendation
Credit: 1

IB Mathematics II HL is the second year of the two-year sequence in mathematics that meets the requirements of the IB Diploma Programme. Students who have successfully completed IB Mathematics I HL may enroll in this course during their senior year. This course builds on and extends the knowledge base of IB Mathematics I HL. IB Mathematics II HL is the study of concepts, techniques, and applications of differential and integral calculus, including Taylor series, the convergence or divergence of infinite series, and differential equations. Students in this course will complete one portfolio project and will take the IB Mathematics HL examination. Year two of this course, IB Mathematics: Analysis and Approaches II (HL), will be available in 2020-21.

Schools offering course: 2, 5

DUAL ENROLLMENT COURSES

PRE-CALCULUS WITH TRIGONOMETRY FOR AB (DE)

Grade: 10-12
Credit 1

Students will complete both MTH 161 and MTH 162.

This course is a one-year dual enrollment preparatory course for AP Calculus AB. Basic course content is comprised of the Algebra of real numbers, complex numbers and polynomials; exponential,
will be utilized. As students solve problems, they will analyze and current traditional courses of algebra, geometry, and calculus in a discrete setting. Techniques that are not considered in the modern society. In this course, the main focus is problem solving by selecting concepts of recent mathematics to solve problems created opportunity to combine previously learned mathematics with selected concepts outlined in the Algebra II standards. Students enrolled in trigonometry are assumed to have mastered those concepts. Topics in trigonometry include right triangle ratios, trigonometric functions, and circular functions. Applications and modeling are included throughout the course. Emphasis is placed on using connections between trigonometric definitions, graphing, and solving trigonometric equations and inequalities. Students enrolled in trigonometry are assumed to have mastered those concepts outlined in the Algebra II standards.

**Schools offering course: 4, 5, 7, 10, 11, 12**

**MULTIVARIABLE CALCULUS (DE)**
Grade: 12 Credit: 0.5
Prerequisite: AP Calculus BC with a score of 3 or above
This course is a dual enrollment course. Students must be enrolled in Multivariable Calculus (MTH 265 - Calculus III) and Linear Algebra (MTH 266) to earn high school credit.
Multivariable Calculus focuses on extending the concepts of function, limit, continuity, derivative, integral and vector from the plane to the three dimensional space. Topics include vector functions, multivariate functions, partial derivatives, multiple integrals and an introduction to vector calculus.

**Schools offering Course: 6, 9**

**LINEAR ALGEBRA (DE)**
Grade: 12 Credit: 0.5
Prerequisite: AP Calculus BC with a score of 3 or above
This course is a dual enrollment course. Students must be enrolled in Multivariable Calculus (MTH 265 - Calculus III) and Linear Algebra (MTH 266) to earn high school credit.
Topics in Linear Algebra include matrices, vector spaces, determinants, solutions of systems of linear equations, basis and dimension, Eigen values, and Eigen vectors.

**Schools Offering Course: 6, 9**

**MATHEMATICS ELECTIVES**

**TRIGONOMETRY**
Grades: 11-12 Credit: 0.5
Prerequisite: Algebra II
This elective semester course provides a thorough treatment of trigonometry through the study of trigonometric definitions, applications, graphing, and solving trigonometric equations and inequalities. Emphasis is placed on using connections between right triangle ratios, trigonometric functions, and circular functions. Applications and modeling are included throughout the course of study. Students enrolled in trigonometry are assumed to have mastered those concepts outlined in the Algebra II standards.

**Schools offering course: 4, 5, 7, 10, 11, 12**

**DISCRETE MATHEMATICS**
Grades: 11-12 Credit: 0.5
Prerequisite: Algebra II
This elective mathematics course provides students with the opportunity to combine previously learned mathematics with selected concepts of recent mathematics to solve problems created by modern society. In this course, the main focus is problem solving in a discrete setting. Techniques that are not considered in the current traditional courses of algebra, geometry, and calculus will be utilized. As students solve problems, they will analyze and determine whether or not a solution exists (existence problems), investigate how many solutions exist (counting problems), and focus on finding the best solution (optimization problems).

**Schools offering course: 2, 3, 4, 6, 8, 9, 12**

**PROBABILITY AND STATISTICS**
Grades: 11-12 Credit: 0.5
Prerequisite: Algebra II
This semester course is an introduction to statistics that emphasizes working with data, graphs, and statistical ideas. Course content includes theory of probability, description of statistical measurements, sampling and experimental design, and the normal distribution. Optional topics include statistical inference involving two populations, linear regression, and correlation. Graphing utilities and other relevant technology tools will be used when appropriate to support instruction, especially to allow students to explore graphical, numerical, and symbolic relationships.

**Schools offering course: 2, 3, 4, 6, 7, 8, 9, 10, 11, 12**

**COMPUTER ELECTIVES**

**COMPUTER MATHEMATICS**
Grades: 9-12 Credit: 1
Prerequisite: Completed or currently enrolled in Algebra I

Notes: 1) Computer Math may count as the third math course for graduation in addition to Algebra and Geometry, only if the student also completes a career and technical concentration. 2) If Advanced Computer Math is taken following this course, Computer Mathematics will become 1 elective credit.

The computer mathematics course is intended to provide students with experiences in using the computer/calculator to solve problems that can be set up as mathematical models. Programming concepts, problem-solving strategies, and mathematical applications are integrated throughout the course. This course is designed for students who want only one computer course.

**Schools offering course: 2, 3, 4, 7, 10, 11**

**ADVANCED COMPUTER MATHEMATICS**
Grades: 9-12 Credit: 1
Prerequisite: Completed Algebra I

Note: Advanced Computer Math may count as the third math course for graduation in addition to Algebra and Geometry, only if the student also completes a career and technical concentration.

Advanced Computer Mathematics has a focus to provide the student with a conceptual background in computer science. Topics include computer architecture, data representation, operating systems, computing systems in society, and software development. Students will implement the major stages of software development using a high level language. Topics will...
include loops, selections, and arrays. This advanced course covers all topics in the regular Computer Mathematics class as well as others. In some schools this course is the first year of a three-year curriculum in Computer Science.

Schools offering course: 2, 3, 4, 6, 8, 9, 10, 11

**AP COMPUTER SCIENCE A**

**Grades: 10-12**  
**Credit: 1**  
**Prerequisite: Geometry and teacher recommendation**

Note: AP Computer Science A may be used for a math credit or for a CTE standard credit to satisfy graduation. For a CTE standard credit, a student must (i) successfully complete a CTE program sequence in programming or related programming sequence, and earn a score of three or higher on the AP Computer Science A examination.

The focus of this course is to provide students with a conceptual background in computer science. The major emphasis is on programming methodology, algorithms, and non-dynamic data structure in the JAVA language. This course prepares a student for advanced placement in computer science by means of the Advanced Placement Examination Level A in Computer Science of the College Entrance Board. Students are required to take the AP Computer Science A examination which is administered in May.

Schools offering course: 1, 3, 4, 6, 7, 8, 9, 10, 11, 12

**DATA STRUCTURES AND ALGORITHMS**

**Grades: 11-12**  
**Credit: 1**  
**Prerequisite: Algebra II and AP Computer Science A**

The course extends the topics of AP Computer Science A and provides a more formal and more in-depth study of algorithms, data structures, and data abstraction. Binary trees, recursive data structures and dynamically allocated structures are fundamental to the course.

Schools offering course: 3, 8, 9

**AICE COMPUTING (AS LEVEL)**

**Grades: 11-12**  
**Credit: 1**  
**Prerequisite: Advanced Placement Computer Science A, Algebra II, and teacher recommendation**

AICE Computing provides students with a thorough knowledge of computing and computer science. Following an international curriculum, students will learn the nature and principles of information processing and the broad range of its applications, together with an advanced understanding of how information-processing systems are designed to suit particular applications. They will develop their ability to use computing techniques to solve problems through structured, practical experiences. This course prepares students for an Advanced International Certificate of Education Diploma and the Computer Science A qualification.

Schools offering course: 4

**IB COMPUTER SCIENCE (SL)**

**Grades: 11-12**  
**Credit: 1**  
**Prerequisite: Advanced Computer Math or teacher recommendation**

IB Computer Science SL continues with the topics developed in Advanced Computer Math such as computer architecture, data representation, operating systems, computing systems in society, and software development. IB CS SL is the second year of a three-year curriculum in Computer Science. Students will implement the major stages of software development using a high level language. Topics will include sorting and searching algorithms, and files. The students will develop a major software project by developing the requirements specification, design documentation, pseudo code, testing documentation and the user documentation.

Schools offering course: 2

**IB COMPUTER SCIENCE (HL)**

**Grade: 12**  
**Credit: 1**  
**Prerequisite: IB Computer Science SL or teacher recommendation**

IB Computer Science HL continues with the topics developed in IB CS SL with the additional topics of computer mathematics and logic, abstract data structures and algorithms, further system fundamentals, and file organization. IB Computer Science HL is the third year of a three-year curriculum in Computer Science. Students will implement the major stages of software development using a high level language. Topics will include lists and iterators, stacks and queues, recursion, binary trees, lookup tables and hashing, priority queues, and analysis of algorithms. Student will develop a major software project from requirement specification to test and take the IB Computer Science HL Exam.

Schools offering course: 2

**ADVANCED COMPUTER STUDIES**

**Grades: 11-12**  
**Credit: 1**  
**Prerequisite: Completed or concurrently enrolled in AP Computer Science A**

This course is an introduction to high performance computational concepts utilizing telecommunication and informational technologies. This course will provide mechanisms for learner-centered, collaborative environments where the students and teacher will engage in dynamic modeling processes in a variety of areas ranging from the sciences to the humanities. The course emphasizes real-world problems, hands-on activities, and discovery learning that will facilitate an environment for constructive learning. The students will be expected to complete a year-long research project.

Schools offering the course: 4, 8, 9
THE GOVERNOR'S SCHOOL @ INNOVATION PARK

**GS PRE-CALCULUS FALL**
**GS PRE-CALCULUS FALL – DUAL ENROLLMENT**
(GMU MATH 105 – 4 credits)
Grades: 11-12  Credit: 0.5 High School credit
Prerequisite: Algebra II / Trigonometry
GS PRE-CALCULUS Fall is a pre-calculus mathematics course utilizing advanced technologies designed to support the science program and provide a thorough preparation for calculus and other advanced mathematics courses. The course will include college algebra and trigonometry with an emphasis on vectors and a comprehensive introduction to calculus.
Offered ONLY at The Governor’s School @ Innovation Park

**GS CALCULUS FALL**
**GS CALCULUS FALL – DUAL ENROLLMENT**
(GMU MATH 115 – 4 credits)
Grades: 11-12  Credit: 0.5 High School credit
Prerequisite: GS Pre-Calculus
GS CALCULUS Fall is an analytic geometry and calculus-based course utilizing advanced technologies which includes a study of functions, limits, derivatives, maximum and minimum problems, integrals, and transcendental functions. Each topic will be taught with a problem solving approach emphasizing students’ ability to analyze, model and solve real world problems.
Offered ONLY at The Governor’s School @ Innovation Park

**GS CALCULUS I, PART A**
**GS CALCULUS I, PART A – DUAL ENROLLMENT**
(GMU MATH 123 – 4 credits)
Grades: 11-12  Credit: 0.5 High School credit
Prerequisite: GS Pre-Calculus or equivalent course
GS CALCULUS I, Parts A and B are the equivalent of GMU Math 115 taken over an extended time. This is an analytic geometry and calculus-based course utilizing advanced technologies which includes a study of functions, limits, derivatives, maximum and minimum problems, integrals, and transcendental functions. Each topic will be taught with a problem solving approach emphasizing students’ ability to analyze, model and solve real world problems.
Offered ONLY at The Governor’s School @ Innovation Park

**GS CALCULUS I, PART B**
**GS CALCULUS I, PART B – DUAL ENROLLMENT**
(GMU MATH 124 – 4 credits)
Grades: 11-12  Credit: 0.5 High School credit
Prerequisite: GS Calculus I, Part A
GS CALCULUS I, Parts A and B are the equivalent of GMU Math 115 taken over an extended time. This is an analytic geometry and calculus-based course utilizing advanced technologies which includes a study of functions, limits, derivatives, maximum and minimum problems, integrals, and transcendental functions. Each topic will be taught with a problem solving approach emphasizing students’ ability to analyze, model and solve real world problems.
Offered ONLY at The Governor’s School @ Innovation Park

**GS CALCULUS SPRING**
**GS CALCULUS SPRING – DUAL ENROLLMENT**
(GMU MATH 116 – 4 credits)
Grades: 11-12  Credit: 0.5 High School credit
Prerequisite: GS Calculus I, Part A
GS CALCULUS Spring is an analytic geometry and calculus-based course utilizing advanced technologies which includes a study of methods of integration, conic sections, parametric equations, infinite series, and power series. Each topic will be taught with a problem solving approach emphasizing students’ ability to analyze, model and solve real world problems. Students will be prepared to take the Advanced Placement Calculus BC exam at the end of this two course sequence.
Offered ONLY at The Governor’s School @ Innovation Park

**GS MULTIVARIABLE CALCULUS FALL – DUAL ENROLLMENT**
(GMU MATH 215 – 3 CREDITS)
Grades: 11-12  Credit: 0.5 High School credit
Prerequisite: GS Calculus
GS Multivariable Calculus follows GS Calculus and includes a study of vectors and vectorvalued functions, partial differentiation, multiple integrals, line integrals, surface integrals, and transformation of coordinates.
Offered ONLY at The Governor’s School @ Innovation Park

**GS LINEAR ALGEBRA SPRING – DUAL ENROLLMENT**
(GMU MATH 203 – 3 credits)
Grades: 11-12  Credit: 0.5 High School credit
Prerequisite: GS Calculus
GS Linear Algebra focuses on the study of systems of linear equations, linear independence, linear transformations, inverse of a matrix, determinants, vector spaces, eigenvalues, eigenvectors, and orthogonalization.
Offered ONLY at The Governor’s School @ Innovation Park
Graduation requirements are located in the “General Information” section.

**SCIENCE COURSES**

**STANDARD FIRST-YEAR SCIENCE COURSES**

**EARTH SCIENCE I**
- Grades: 9-12
- Credit: 1
- Prerequisite: Successful completion of Grade 8 Science
- School offering course: All

**ADVANCED EARTH SCIENCE I**
- Grades: 9-12
- Credit: 1
- Prerequisite: Successful completion of Grade 8 Science
- School offering course: All

**BIOLOGY I**
- Grades: 9-12
- Credit: 1
- Prerequisite: Successful completion of Grade 8 Science
- School offering course: All

**CHEMISTRY I**
- Grades: 10-12
- Credit: 1
- Prerequisite: Successful completion of one year of laboratory science; Algebra I
- School offering course: All

**ENVIRONMENTAL SCIENCE**
- Grades: 9-12
- Credit: 1
- Prerequisite: Successful completion of Grade 8 Science
- School offering course: All except 1

**PHYSICS I**
- Grades: 10-12
- Credit: 1
- Prerequisite: Successful completion of Geometry
- School offering course: All

**Note:** This course may utilize animal dissection techniques as an instructional strategy. Students who conscientiously object to these exercises will participate in Division-approved activities that provide comparable learning experiences.

This course has an associated Standards of Learning (SOL) test. Students will participate in this test to satisfy federal testing requirements.

Schools offering course: All

**School Number Code:**
1 – Brentsville 4 – Potomac 7 – Hylton 10 – Freedom 99 – Virtual
2 – Gar-Field 5 – Stonewall 8 – Forest Park 11 – Patriot
3 – Osbourn Park 6 – Woodbridge 9 – Battlefield 12 – Colgan
PRE-AP BIOLOGY
Grades: 9-12 Credit: 1
Prerequisite: Completion of grade 8 science

Designed to give students a foundation in biological concepts as well as the opportunity to apply principles of experimental design in laboratory settings and on a required student project. Pre-AP Biology includes the same major areas of study as Biology I but with extensions to each curriculum objective and associated specialty program. This course is open to interested students and may be required of students in specialty programs throughout the county.

Note: This course may utilize animal dissection techniques as an instructional strategy. Students who conscientiously object to these exercises will participate in Division-approved activities that provide comparable learning experiences.

This course has an associated Standards of Learning (SOL) test. Students will participate in this test to satisfy federal testing requirements.

Schools offering course: 3, 4, 6, 7, 8, 9, 10, 11, 12

AP BIOLOGY
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of at least two laboratory sciences to include Biology I and Chemistry I; successful completion of Algebra and Geometry.
Co-requisite: Algebra II

AP Biology is designed to be the equivalent of a first year introduction college biology course. AP Biology is designed for students who have successfully completed foundation courses in biology and chemistry. This course aims to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of biology. Primary emphasis of the course is on developing an understanding of concepts rather than memorizing terms and technical details. At least 25% of instructional time is dedicated to hands-on laboratory investigations. Students are expected to take the AP Biology examination in May. With a satisfactory score, students may be eligible to receive some credit for college-level biology.

Schools offering course: 3, 4, 6, 7, 8, 9, 10, 11, 12

AP ENVIRONMENTAL SCIENCE
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Biology I; Chemistry I; Algebra II

AP Environmental Science utilizes students’ mathematics and scientific skills in a systems approach to the environment. Major systems include aquatic and terrestrial ecosystems, the atmosphere, and resource allocation/distribution. In addition to laboratory work, some fieldwork is required. This course is in compliance with the AP Environmental Science course description as set by the College Board. Students will take the Earth Science I Standards of Learning assessment at the end of this course only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements. Students are expected to take the AP Environmental Science examination in May. With a satisfactory score, students may be eligible to receive some credit for college-level environmental science.

Schools offering course: 3, 4, 6, 7, 8, 9, 10, 11, 12

AP PHYSICS 1
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Geometry
Co-requisite: Algebra II/Trigonometry

AP Physics is an algebra-based course that is representative of topics covered in similar college physics courses, as determined by periodic surveys. This course could be taken by students with no previous high school experience in physics but who possess strong study skills required for college-level classes. The course covers the following general areas: Newtonian mechanics; work, energy, and power; mechanical waves, and sound. At least
25% of instructional time is dedicated to hands-on laboratory investigations. Students who have taken this course may enroll in either AP Physics 2 or AP Physics C.

Schools offering course: 3, 6, 7, 8, 9, 10, 11, 12

AP PHYSICS 2
Grade: 12
Credit: 1
Prerequisite: Successful completion of Physics 1, AP Physics 1, or AP Physics C

AP Physics 2 is an algebra-based course that is representative of topics covered in similar college physics courses, as determined by periodic surveys. The course covers five general areas: fluid mechanics; thermodynamics; electricity and magnetism; optics; atomic and nuclear physics. At least 25% of instructional time is dedicated to hands-on laboratory investigations. Schools could offer this course as a single or a double block class, with extended time for lab inquiry activities. Students are expected to take the AP Physics 2 examination in May. With a satisfactory score, students may be eligible to receive some credit for college-level physics.

Schools offering course: 3, 6

AP PHYSICS C: MECHANICS
Grades: 11-12
Credit: 1
Prerequisite: Calculus or concurrent enrollment in Calculus

AP Physics C: Mechanics ordinarily forms the first part of a college sequence that serves as the foundation in physics for students interested in the physical sciences or engineering. Strong emphasis is placed on solving a variety of challenging problems, requiring some calculus that is presented to students during instruction. At least 25% of instructional time is dedicated to hands-on laboratory investigations. Schools could offer this course as a single or a double block class, with extended time for lab inquiry activities. Students are expected to take the Advanced Placement Physics C examination in May. With a satisfactory score, students may be eligible to receive some credit for college-level physics.

Schools offering course: 3, 6, 7, 8, 9, 11

IGCSE BIOLOGY
Grades: 9-10
Credit: 1
Prerequisite: Successful completion of Grade 8 Science

This laboratory-based course includes a curriculum designed to give students a foundation in biological concepts as well as the opportunity to utilize principles of experimental design in laboratory inquiry and on a required independent student project. IGCSE Biology includes, but is not limited to, characteristics and classification of living organisms; organization and maintenance of organisms; reproduction, inheritance, and the continuity of life; and the relationships of organisms to one another and to their environment.

Note: This course may utilize animal dissection techniques as an instructional strategy. Students who conscientiously object to these exercises will participate in Division-approved activities that provide comparable learning experiences.

Schools offering course: 1, 4

AICE BIOLOGY (AS LEVEL)
Grades: 11-12
Credit: 1
Prerequisite: Completion of IGCSE Biology or Biology I; completion of IGCSE Chemistry or Chemistry I; completion of Algebra II or IGCSE Geometry; Co-requisite: Advanced Biology Laboratory at school 4 only and Algebra II or Algebra II/Trigonometry

AICE Biology is an accelerated and rigorous course that follows an international, advanced level curriculum. This course is lab-oriented, with a curriculum designed to give students a foundation in biological concepts as well as the opportunity to utilize principles of experimental design in laboratory inquiry and on a required independent student project. The course covers major biological topics. Students will be prepared to sit for a practical test and external examinations leading to Advanced International Certificate of Education Diploma and an Advanced Placement qualification.

Schools offering course: 1, 4

AICE BIOLOGY (A LEVEL)
Grades: 11-12
Credit: 1
Prerequisite: Completion of AICE Biology (AS Level)

This course is a second year of the AICE Level Biology curriculum that incorporates lab experience as an integral component of its study. The curriculum involves a detailed examination of major biological themes, along with one of four optional units: mammalian physiology; microbiology and biotechnology; growth, development, and reproduction; and applications of genetics in a more comprehensive manner. Students will sit for external exams that contribute to the Advanced International Certificate of Education Diploma and present a possibility for students to receive college credit for an introductory biology course.

Schools offering course: 1, 4

IGCSE CHEMISTRY
Grades: 10-11
Credit: 1
Prerequisite: Completion of IGCSE Biology or Biology I; completion of IGCSE Algebra I or Algebra II

This course is lab-oriented, with a curriculum designed to give students a foundation in chemistry concepts as well as the opportunity to utilize principles of experimental design in laboratory inquiry and on a required independent student project. The course will include the major principles of chemistry: structure of matter, chemical and physical properties, periodic trends, molar and stoichiometric relationships, chemical reactions and equilibria, chemical kinetics, electrochemistry, thermodynamics, acid-base theory, and organic and environmental chemistry. Assessment will include an external examination and coursework evaluations by the teacher. This course has an associated Standards of Learning (SOL) test. Students will participate in this test only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 1, 4
Schools offering course: 1, 4

**AP qualification.**

Advanced International Certificate of Education Diploma and an AP qualification.

Leading to an external examination in theory and practical assessment. Students will be prepared to sit for an AP qualification.

**Schools offering course: 1, 4**

**AICE CHEMISTRY (AS LEVEL)**

Grades: 11-12  
Credit: 1  
Prerequisite: Completion of IGCSE Chemistry or Chemistry I; Algebra II or IGCSE Algebra II/Trigonometry  
Co-requisite: Advanced Chemistry Laboratory at school 4 only

AICE Chemistry is an accelerated and rigorous course that encompasses the AP Chemistry curriculum and enriched AICE topics. This course is lab-oriented, with a curriculum designed to give students a foundation in chemistry concepts as well as the opportunity to utilize principles of experimental design in laboratory inquiry and on a required independent student project. The expanded curriculum enables students to pursue advanced studies of analytic separation techniques, biochemistry, and spectroscopy. Students will be prepared to sit for external examinations in theory and practical assessments leading to an Advanced International Certificate of Education Diploma and an AP qualification.

**Schools offering course: 1, 4**

**IGCSE PHYSICS**

Grades: 10-11  
Credit: 1  
Prerequisite: Algebra I, IGCSE Geometry or Geometry I or concurrent enrollment in IGCSE Algebra II/Trigonometry

This course offers a combination of theoretical and practical studies such as mechanics that analyze motions and forces; study of energy with applications to work and power; thermodynamics; properties of waves (light and sound); electricity and magnetism; and atomic physics leading to an understanding of the basic principles of physics. Investigations will be student designed and tested emphasizing principles of experimental design, inquiry-based discovery, and scientific problem solving. Independent research is a required part of the program. IGCSE Algebra II/Trigonometry must have been successfully completed or the student must take IGCSE Algebra II/Trigonometry concurrently. Assessment measures will include external student examination and course evaluations by the teacher.

**Schools offering course: 1, 4**

**AICE PHYSICS (AS LEVEL)**

Grades: 11-12  
Credit: 1  
Prerequisite: IGCSE Physics or Physics I; IGCSE Chemistry or Chemistry I

AICE Physics is an accelerated and rigorous course that encompasses the AP Physics curriculum and enriched AICE program topics. This course focuses on the advanced study of topics in general physics, Newtonian mechanics, matter, oscillations and waves, electricity and magnetism, and modern physics. The inquiry-based approach emphasizing principles of experimental design, scientific problem solving, and research skills requires students to use principles and concepts that are taught and to apply them in a logical, reasoned, and deductive manner to their work. Independent research is a required part of the program. Students will be prepared to sit for external examinations in theory and practical applications leading to an Advanced International Certificate of Education Diploma and an AP qualification.

**Schools offering course: 1, 4**

**AICE ENVIRONMENTAL MANAGEMENT (AS LEVEL)**

Grades: 11-12  
Credit: 1  
Prerequisite: Successful completion of IGCSE Biology or Biology I; IGCSE Chemistry or Chemistry I; IGCSE Algebra II or Algebra II

This accelerated Cambridge course has a strong human dimension and is concerned with both local and global issues. The curriculum encompasses the four traditional subdivisions of the global environment, including the lithosphere, hydrosphere, biosphere, and atmosphere. The course develops in students a strong understanding of the Earth's natural systems and the effects of human activity on these systems. Students are challenged to think about important environmental issues and to look to themselves for possible solutions. An important component of the practical assessment is an Individual Research Report based on issues for the course of studies. Students will take the Earth Science I Standards of Learning assessment only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements. Students will be prepared to sit for an external examination leading to the AICE Diploma and an Advanced Placement qualification.

**Schools offering course: 1, 4**

**IB SCIENCE COURSES**

**ADVANCED MIDDLE YEARS PROGRAMME**

**EARTH SCIENCE**

Grades: 9-12  
Credit: 1  
Prerequisite: Enrollment in the IB Program and completion of Grade 8 Science

Adv-MYP Earth Science is designed for IB students who wish to concentrate on rigorous earth science principles and processes that will lead to more qualitative sciences. Students will investigate the natural sciences of astronomy, oceanography, meteorology, and geology. The IB internal assessment will serve as a guide as students apply the scientific method. This course has an associated Standards of Learning (SOL) test. Students will participate in this test only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

**Schools offering course: 2**

**IB ENVIRONMENTAL SYSTEMS AND SOCIETIES (SL)**

Grades: 11-12  
Credit: 1  
Prerequisite: Completion of Pre-IB Biology; Pre-IB Chemistry

This one-year course provides students with a perspective on the interrelationships between ecosystems and societies. Students will emerge from the class with an understanding of complex environmental issues in which the interaction between ecosystems and societies is central. Sustainability is the integrative theme of this course. Students will develop the capability to formulate an informed personal response to both
local and global issues. Students will take the Earth Science I Standards of Learning assessment only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements. Environmental Systems and Societies can serve as a requirement for either a Group 3 (Individuals and Societies) course or a Group 4 (Experimental Science) course within the IB diploma program. 40 hours of lab work and participation in the Group IV Project are required by the IBO.

**ADVANCED MIDDLE YEARS PROGRAMME BIOLOGY I**

*Grades: 9-12  Credit: 1*

**Prerequisite:** Successful completion of Grade 8 Science

Adv-MYP Biology is a survey of the animal, plant, and protist kingdoms, including consideration of the classification, distribution, and life processes of the major groups of each kingdom. Students will use scientific research methods to investigate scientific principles. Extensive laboratory work will be a part of the course, and students are required to submit written lab reports. Students will explore the skills used by practicing biologists and how biology can help solve environmental problems.

**IB BIOLOGY I (HL)**

*Grade: 11  Credit: 1*

**Prerequisite:** Successful completion of Adv-MYP Biology; IB Chemistry I (SL)

IB Biology is the first year of an overview of the major principles and processes in the areas of molecular and cellular biology, genetics, ecology, and organisms. Laboratory work is an integral part of this course and students are required to submit written laboratory reports. Key points of the course are structure and function, universality versus diversity, and equilibrium within systems.

**IB CHEMISTRY I (SL)**

*Grades 10-12  Credit: 1*

**Prerequisite:** Successful completion of one year of laboratory science; Algebra I

This course provides a general introduction to chemistry. The topics of study include atomic structure, ionic and covalent compounds, chemical equations, stoichiometry, gases, solutions, organic chemistry, and acids and bases. Students develop experimental design skills to collect and analyze data using graphical and statistical methods. Students will design and conduct experimental research projects and will have an emphasis on qualitative and quantitative study of substances and the changes they undergo. Laboratory investigations form a major component of the course as well as mathematical applications of stoichiometry in problem solving. All students must maintain a portfolio of laboratory work that is submitted to the IB examiners. IB Chemistry I meets the course requirements of Chemistry I. This course has an associated Standards of Learning (SOL) test. Students will participate in this test only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

**IB CHEMISTRY II (SL)**

*Grades 11-12  Credit: 1*

**Prerequisite:** Successful completion of IB Chemistry I (SL)

This second level course provides students with a comprehensive hands-on study of major chemical principles emphasizing laboratory experiences and research. Students study research techniques, advanced problem solving, and synthesis of prior knowledge to investigate IB option topics. Participation in an interdisciplinary science research (Group 4) project is required. Laboratory investigations form a major component of the course, and all students must maintain a portfolio of laboratory work that is presented to the IB examiners. With a satisfactory IB exam score, students may receive credit for introductory college chemistry. Students are required to take the IB Chemistry Standard Level Exam and complete the required hours and assignments tied to the SL Chemistry Internal Assessment.

**Note:** This course may utilize animal dissection techniques as an instructional strategy. Students who conscientiously object to these exercises will participate in Division-approved activities that provide comparable learning experiences.
IB PHYSICS (SL)
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Adv-MYP Physics; Adv-MYP Algebra II/Trigonometry
IB Physics is an extremely fast-paced, rigorous course following the IB Standard Level curriculum. Building on their background from Adv-MYP Physics, students will study mechanics, heat, electromagnetism, light, sound, and modern physics in greater depth. Students will design and implement their own laboratory investigations and will be graded using IB assessment criteria. They will participate in the interdisciplinary “Group 4 Project” and will sit for the Standard Level examination at the end of the course.
Schools offering course: 2

IB BIOLOGY II (HL)
Grade: 12 Credit: 1
Prerequisite: Completion of IB Biology I (HL)
IB Biology II (BIO 102) is an introduction to advanced anatomy and physiology and plant biology. A review of IB Biology I principles and processes in the areas of molecular and cellular biology, genetics, ecology, and organisms is included. Students are required to take the IB examination at the end of the course. Laboratory work is an integral part of this course and students are required to submit written laboratory reports.
Note: This course may utilize animal dissection techniques as an instructional strategy. Students who conscientiously object to these exercises will participate in Division-approved activities that provide comparable learning experiences.
Schools offering course: 2

DUAL ENROLLMENT COURSES

BIOLOGY II: SURVEY OF ADVANCED TOPICS IN BIOLOGY
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Biology I and Chemistry I
Biology II: Survey of Advanced Topics in Biology (BIO 101) is an academically rigorous, in-depth, second year study of selected areas of biology that allows highly motivated students to delve more deeply into life systems and processes. Extensive laboratory work is part of this course. Emphasis is placed on research skills and techniques.
Note: This course utilizes animal dissection techniques as a major instructional strategy. Students who conscientiously object to these exercises will participate in Division-approved activities that provide comparable learning experiences.
Schools offering course: 9, 10

IB BIOLOGY I (HL)
Grade: 11 Credit: 1
Prerequisite: Successful completion of Adv-MYP Biology; IB Chemistry I (SL)
IB Biology (BIO 101) is the first year of an overview of the major principles and processes in the areas of molecular and cellular biology, genetics, ecology, and organisms. Laboratory work is an integral part of this course and students are required to submit written laboratory reports. Key points of the course are structure and function, universality versus diversity, and equilibrium within systems.
Note: This course may utilize animal dissection techniques as an instructional strategy. Students who conscientiously object to these exercises will participate in Division-approved activities that provide comparable learning experiences.
Schools offering course: 2

STANDARD SCIENCE ELECTIVE COURSES

EARTH SCIENCE II: OCEANOGRAPHY
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Earth Science I; and either Biology I or Chemistry I; AP Environmental Science or IB Environmental Systems and Societies are appropriate alternative substitutes for the Earth Science prerequisite.
Note: Course work in Chemistry is recommended
Oceanography is a second level earth science course designed to be a more in-depth treatment of the oceanography concepts presented in first year earth science. It is a broad survey course dealing mainly with physical oceanography and covering such topics as the geology and geography of ocean basins; physical properties of sea water; marine chemistry; salinity and density; circulation of the oceans, waves and tides; and oceanographic instruments, tools, and methods. Emphasis is also placed on ocean policy and ocean ecology.
Schools offering course: All

EARTH SCIENCE II: ASTRONOMY
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Earth Science I; Algebra I; and either Biology I or Chemistry I
Astronomy is a second level earth science course designed to be a more in-depth, mathematical treatment of the astronomical concepts presented in introductory Earth Science course. Topics such as the universe, universal laws, galaxies, stellar evolution, the solar system and its motion, and the exploration of space will be discussed.
Schools offering course: 2, 4, 5, 6, 7, 8, 9, 10, 12, 99
Schools offering course: 3

**EARTH SCIENCE II: PHYSICAL GEOLOGY**
Grades: 11-12  
Credit: 1  
Prerequisite: Successful completion of Earth Science I; and either Biology I or Chemistry I; enrollment in Algebra I

Physical Geology is a second level earth science course designed to be a more in-depth treatment of the geology concepts presented in the introductory Earth Science course. Topics of study include but are not limited to plate tectonics theory; interrelationships between humans and the geological environment that affect ground water resources; runoff and erosion; waste disposal; energy resources and food production; time/space relationships in the earth record; and geomorphology.

Schools offering course: 3, 4, 7

**BIOLOGY II: SURVEY OF ADVANCED TOPICS IN BIOLOGY**
Grades: 11-12  
Credit: 1  
Prerequisite: Successful completion of Biology I and Chemistry I

Biology II: Survey of Advanced Topics in Biology is an academically rigorous, in-depth, second year study of selected areas of biology that allows highly motivated students to delve more deeply into life systems and processes. Extensive laboratory work is part of this course. Emphasis is placed on research skills and techniques.

Note: This course utilizes animal dissection techniques as a major instructional strategy. Students who conscientiously object to these exercises will participate in Division-approved activities that provide comparable learning experiences.

Schools offering course: 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12

**BIOLOGY II: INTRODUCTION TO DNA SCIENCE AND BIOTECHNOLOGY**
Grades: 11-12  
Credit: 1  
Prerequisite: Completion of Biology I and Chemistry I; completion of Algebra I and Geometry

This is a second-year study of biological and chemical principles related to molecular biology and biotechnology. The course is designed for students with interests in the health sciences, animal science, and plant biology. A variety of topics, issues, and techniques will be addressed, including cellular structure and function; enzyme activity; classical and molecular genetics; DNA science (gene regulation, mutation, transfer; karyotyping; and DNA sequencing and decoding); genetic engineering applications; and various biotechniques. Ethical, social, and legal implications associated with biotechnology will be explored through case studies, student research, discussion, debate, and examination of current events. Laboratory experiences will include chromatography, electrophoresis, immunology, enzyme studies, DNA extraction, PCR simulation, and plant cloning.

Schools offering course: 3

**BIOLOGY II: ECOLOGY**
Grades: 11-12  
Credit: 1  
Prerequisite: Successful completion of Biology I; and either Earth Science I, or Chemistry I

Ecology is an academically rigorous, in-depth, second year study of biological and ecological principles governing higher levels of organization (populations, communities, ecosystems). Concepts that will be covered include adaptation and natural selection; the physical environment and climate; population ecology, growth models, and life history patterns; communities, competition, parasitism, mutualism, and human interactions; ecosystem productivity, energy flow, nutrient cycling, and biogeochemical cycles; and biogeography, biodiversity, and global environmental change. The science of ecology is dedicated to an understanding of the relationships between organisms and their environment and is often at the center of public policy disputes related to the environment; therefore, students will learn how ecological research is becoming increasingly important and prominent throughout the world. Student participation in outdoor field activities is expected.

Schools offering course: 2, 5, 8, 10, 12

**LAB ASSISTANT – SCIENCE SEMINAR**
**SCIENCE TEACHER’S AIDE**
Grades: 10-12  
Credit: 0.5 for Lab Assistant/Science Seminar; no credit for Science Teacher’s Aide

Prerequisite: Successful completion of subject in which assisting; prior approval of supervising teacher

Lab Assistant/Science Seminar offers the student the opportunity to learn more science while assisting a science teacher. The instructional objectives vary according to the course in which the student is assisting and according to the program, interests, and ability of the student. This course may be taken more than once for credit with prior approval of the science department chairperson.

Schools offering Lab Assistant/Science Seminar: 1, 2, 4, 5, 6, 7, 8, 9, 12

Schools offering Science Teacher’s Seminar: 3

**CHEMISTRY II: FORENSIC SCIENCES AND CHEMICAL ANALYSIS**
Grades: 10-12  
Credit: 1

Prerequisite: Successful completion of Biology I; Chemistry I

In this college preparatory course, students will work toward a comprehensive understanding of forensic sciences. The foundation will include central concepts concerning the history of forensic sciences, the chemical analysis of forensic evidence, and crime scene management. Students will apply Locard's Principle in the observation, acquisition, and analysis of forensic evidence. Major focus will be placed upon the understanding of science as an active process including the application of instrumental methods of analysis such as ultraviolet, visible, infrared and fluorescence spectrophotometry, gas chromatography, and thin layer chromatography to the classification of physical evidence. In addition, techniques of analytical chemistry will be utilized to investigate the chemical composition of blood, latent fingerprints, hair and fiber evidence, toxicology, soil samples, questioned documents, and other types of trace evidence.

Schools offering course: 1, 3, 5, 6, 7, 9, 10, 11
SCIENCE ELECTIVES FOR THE BIOTECH PROGRAM AND/OR THE CENS PROGRAM

INTRODUCTION TO MICROBIOLOGY AND BACTERIOLOGY
Grades: 10-12 Credit: 0.5
Prerequisite: Successful completion of introductory Biology; successful completion of or concurrent enrollment in Chemistry I

This half credit science elective course will give students the opportunity to learn about the immunological and biological properties of bacteria, viruses, and fungi. In this course students will be exposed to the tools required for a research career and study current issues in microbiology and immunology. Students will become acquainted with the dynamics of the host/parasite relationship, including host defense systems, and the relationship of microorganisms to disease.

Schools offering course: 10

INTRODUCTION TO FORENSIC SCIENCES
Grades: 10-12 Credit: 0.5
Prerequisite: Successful completion of introductory Biology I; successful completion of or concurrent enrollment in Chemistry I

This half credit science elective course will give students the opportunity to examine how technology has revolutionized forensic science and how it is used to solve crimes; the principles that are applied in the collection, preservation, and analysis of evidence; what characterizes individual evidence and class evidence; how microscopic evidence is used in the study of crime; and what the role of experimentation is in teaching, explaining, and illustrating forensic concepts.

Schools offering course: 6, 10

METHODS IN SCIENTIFIC INQUIRY
Grade: 10 Credit: 1
Prerequisite: Enrollment in the BIOTECH program; Successful completion of Biology I; Algebra I; Concurrent enrollment in Chemistry I

This course provides an introduction to research methods relevant to current biotechnology practices. This course will focus on an introduction to research design methods. In addition, the course will focus on providing a practical understanding of several statistical tools used in scientific research. The emphasis will be on asking answerable scientific questions, conducting independent research, and to communicating scientific findings. Students in this course will be introduced to literature review, experimental design, research, the scientific method, statistics, and a variety of laboratory techniques.

Schools offering course: 3

THE GOVERNOR’S SCHOOL @ INNOVATION PARK

GS COLLEGE PHYSICS I – GS COLLEGE PHYSICS I LAB
(GMU PHYS 243 AND LAB 244 – 4 CREDITS)
Grades: 11-12 Credit: 0.5 High School credit
Prerequisite: Completion of Algebra II/Trig and Chemistry with a C or better

This is a two-semester basic physics course with emphasis on topics of classical and modern physics of particular importance to science majors. Principles of mechanics, heat, electricity, magnetism, optics, and atomic and nuclear physics are discussed.

Offered ONLY at The Governor’s School @ Innovation Park

GS COLLEGE PHYSICS I LAB
(GMU PHYS 243 AND LAB 244 – 4 CREDITS)
Grades: 11-12 Credit: 0.5 High School credit
Prerequisite: Completion of Algebra II/Trig and Chemistry with a C or better

Enrollment in this lab requires concurrent enrollment in GS College Physics I.

Offered ONLY at The Governor’s School @ Innovation Park

GS COLLEGE PHYSICS II
(GMU PHYS 245 AND LAB 246 – 4 CREDITS)
Grades: 11-12 Credit: 0.5 High School credit each
Prerequisite: Completion of Algebra II/Trig and Chemistry with a C or better

Successful completion of PHYS 243 with a C or better is prerequisite to PHYS 245. Two-semester basic physics course with emphasis on topics of classical and modern physics of particular importance to science majors. Principles of mechanics, heat, electricity, magnetism, optics, and atomic and nuclear physics are discussed.

Offered ONLY at The Governor’s School @ Innovation Park

GS COLLEGE PHYSICS II LAB
(GMU PHYS 245 AND LAB 246 – 4 CREDITS)
Grades: 11-12 Credit: 0.5 High School credit
Prerequisite: Completion of Algebra II/Trig and Chemistry with a C or better

Enrollment in this lab requires concurrent enrollment in GS College Physics II.

Offered ONLY at The Governor’s School @ Innovation Park

GS UNIVERSITY PHYSICS I
(GMU PHYS 160 AND LAB 161 – 4 CREDITS)
Grade: 12 Credit: 0.5 High School credit
Prerequisite: Completion of Physics 243-246 with a C or better
Corequisite Math 115-116

This is a two-semester calculus-based introductory physics sequence, designed primarily for science and engineering majors.

Offered ONLY at The Governor’s School @ Innovation Park
GS UNIVERSITY PHYSICS I LAB (GMU PHYS 160 AND LAB 161 – 4 CREDITS)
Grade: 12
Credit: 0.5 High School credit
Prerequisite: Completion of Physics 243-246 with a C or better
Corequisite Math 115-116
Enrollment in this lab requires concurrent enrollment in GS University Physics I.
Offered ONLY at The Governor’s School @ Innovation Park

GS UNIVERSITY PHYSICS II (GMU PHYS 260 AND LAB 261 – 4 CREDITS)
Grade: 12
Credit: 0.5 High School credit
Prerequisite: Completion of PHYS 160 with a C or better
Corequisite Math 115-116
Successful completion of PHYS 160 with a C or better is a prerequisite to PHYS 260. This is a two-semester calculus-based introductory physics sequence, designed primarily for science and engineering majors.
Offered ONLY at The Governor’s School @ Innovation Park

GS UNIVERSITY PHYSICS II LAB (GMU PHYS 260 AND LAB 261 – 4 CREDITS)
Grade: 12
Credit: 0.5 High School credit
Prerequisite: Completion of PHYS 160 with a C or better
Corequisite Math 115-116
Enrollment in this lab requires concurrent enrollment in GS University Physics II.
Offered ONLY at The Governor’s School @ Innovation Park

GS GENERAL BIOLOGY II (BIOLOGY 104 AND LAB 106 – 4 CREDITS)
Grade: 12
Credit: 0.5 High School credit
Prerequisite: Completion of Biology 103 and lab 105 with a C or better
Topics in this course include animal (including human) structure, function, homeostatic mechanisms, organ systems, behavior, higher plant systems, and major concepts in ecology.
Offered ONLY at The Governor’s School @ Innovation Park

GS GENERAL BIOLOGY II LAB (BIOLOGY 104 AND LAB 106 – 4 CREDITS)
Grade: 12
Credit: 0.5 High School credit
Prerequisite: Completion of Biology 103 and lab 105 with a C or better
Enrollment in this lab requires concurrent enrollment in GS General Biology II.
Offered ONLY at The Governor’s School @ Innovation Park

GS HUMAN ANATOMY AND PHYSIOLOGY (GMU BIOLOGY 124 – 4 CREDITS)
Grade: 12
Credit: 0.5 High School credit
Prerequisite: Completion of Biology 103, 104 with a C or better
This course is an introduction to the structure and function of the body’s major organ systems. The course will cover basic principles of biology and chemistry required to understand physiology. We will discuss the chemical, cellular and tissue levels of organization in the human body and begin our survey of organ systems with a study of the structure and function of the integumentary, skeletal, muscular and nervous systems. Laboratory exercises are designed to reinforce lecture material by providing opportunities for both observation and manipulation of anatomical structures and experiments in physiological principles.
Offered ONLY at The Governor’s School @ Innovation Park

GS MICROBIOLOGY (GMU BIOLOGY 245 – 4 CREDITS, LAB – ONLY HIGH SCHOOL CREDIT AVAILABLE)
Grade: 12
Credit: 0.5 High School credit
Prerequisite: Completion of Introductory Biology 103 and 104 with a C or better
The course is an introduction to microbial cell structure, physiology and pathogenicity of various microorganisms including bacteria, viruses, and fungi. Emphasis is on host-parasite relationships, epidemiology and immunology of infections. The students will also receive a broad coverage of various infectious diseases including etiological agents, modes of transmission, presentations of systems, and treatments and prevention. An environmental aspect will also be included to increase students’ understanding of the utilization of microorganisms in environmental processes such as fermentation and waste management.
Offered ONLY at The Governor’s School @ Innovation Park
GS MICROBIOLOGY LAB
(GMU BIOLOGY 245 – 4 CREDITS, LAB – ONLY HIGH SCHOOL CREDIT AVAILABLE)
Grade: 12 Credit: 0.5 High School credit
Prerequisite: Completion of Introductory Biology 103 and 104 with a C or better
Enrollment in this lab requires concurrent enrollment in GS Microbiology.
Offered ONLY at The Governor’s School @ Innovation Park

GS GENERAL CHEMISTRY I
(GMU CHEM 211 AND LAB – 4 CREDITS)
Grades: 11-12 Credit: 0.5 High School credit
Prerequisite: Completion of Pre-AP or Honors Chemistry with a C or better
This course offers basic facts and principles of chemistry, including atomic and molecular structure, gas laws, kinetics, equilibrium, electrochemistry, nuclear chemistry, and properties and uses of the more important elements and their compounds.
Offered ONLY at The Governor’s School @ Innovation Park

GS GENERAL CHEMISTRY I LAB
(GMU CHEM 211 AND LAB – 4 CREDITS)
Grades: 11-12 Credit: 0.5 High School credit
Prerequisite: Completion of Pre-AP or Honors Chemistry with a C or better
Enrollment in this lab requires concurrent enrollment in GS General Chemistry I.
Offered ONLY at The Governor’s School @ Innovation Park

GS GENERAL CHEMISTRY II
(GMU CHEM 212 AND LAB – 4 CREDITS)
Grades: 11-12 Credit: 0.5 High School credit
Prerequisite: Completion of Chemistry 211 with a C or better
This is a focused survey course with objectives that include physical and chemical changes and properties; interactions of matter; structures of atoms; and intermolecular forces.
Offered ONLY at The Governor’s School @ Innovation Park

GS GENERAL CHEMISTRY II LAB
(GMU CHEM 212 AND LAB – 4 CREDITS)
Grades: 11-12 Credit: 0.5 High School credit
Prerequisite: Completion of Chemistry 211 with a C or better
Enrollment in this lab requires concurrent enrollment in GS General Chemistry II.
Offered ONLY at The Governor’s School @ Innovation Park

GS INTRODUCTION TO ORGANIC CHEMISTRY
(GMU CHEM 104 AND LAB – 4 CREDITS)
Grades: 11-12 Credit: 0.5 High School credit
Prerequisite: Completion of Chemistry 211, 212 with a C or better
This course in modern chemistry is an introduction to the major classes of organic compounds and biomolecules. Topics include structure, nomenclature, chemical and physical properties, and reactions of organic compounds as well as a survey of the biochemistry of proteins, carbohydrates, lipids and nucleic acids. Students will also complete a laboratory section.
Offered ONLY at The Governor’s School @ Innovation Park

GS INTRODUCTION TO ORGANIC CHEMISTRY LAB
(GMU CHEM 104 AND LAB – 4 CREDITS)
Grades: 11-12 Credit: 0.5 High School credit
Prerequisite: Completion of Chemistry 211, 212 with a C or better
Enrollment in this lab requires concurrent enrollment in GS Introduction to Organic Chemistry.
Offered ONLY at The Governor’s School @ Innovation Park

GS ENVIRONMENTAL CHEMISTRY
(GMU CHEM 155 AND LAB – 3 CREDITS)
Grade: 12 Credit: 0.5 High School credit
Prerequisite: Completion of Chemistry 211, 212 with a C or better
This course in modern chemistry is an introduction to major topics of environmental chemistry. Topics include atmospheric chemistry and air pollution, energy and climate change, water chemistry and water pollution, and select topics on toxic organic compounds. The laboratory component focuses on water chemistry yet includes atmospheric chemistry and analytical chemistry topics.
Offered ONLY at The Governor’s School @ Innovation Park

GS ENVIRONMENTAL CHEMISTRY LAB
(GMU CHEM 155 AND LAB – 3 CREDITS)
Grade: 12 Credit: 0.5 High School credit
Prerequisite: Completion of Chemistry 211, 212 with a C or better
Enrollment in this lab requires concurrent enrollment in GS Environmental Chemistry.
Offered ONLY at The Governor’s School @ Innovation Park
SOCIAL STUDIES

Graduation requirements are located in the “General Information” section.

STANDARD COURSES

WORLD HISTORY AND GEOGRAPHY TO 1500
Grade: 9  Credit: 1
Prerequisite: Assignment to Grade 9
This is a survey of world history to 1500 with a concentration on developing historical thinking skills and geographical analysis. Course topics include: early development of humankind from the Paleolithic Era to the agricultural revolution, ancient river valley civilizations, early civilizations in Persia, India and China, influence of Greece and Rome in the development of Western civilization, the Byzantine Empire and Russia, early Islamic civilization, Western Europe in the Middle Ages, Empires of the Eastern Hemisphere, major civilizations of the Western Hemisphere (Mayan, Aztec, Incan), late medieval developments, and the Renaissance in Europe. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: All

WORLD HISTORY AND GEOGRAPHY FROM 1500
Grade: 10  Credit: 1
Prerequisite: Assignment to Grade 10
This is a survey of world history from 1500 to the present with a concentration on modern developments in western civilization. Course topics include: the Reformation, the Age of Discovery, Absolutism, the Scientific and Industrial Revolutions, the Enlightenment, the development of nation-states, nationalism, and the Age of Imperialism, 20th Century conflicts, and independence movements and world religions and the contemporary world. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: All

U.S. AND VIRGINIA HISTORY
Grade: 11  Credit: 1
Prerequisite: Assignment to Grade 11
The study of the nation’s history provides the intellectual foundations for responsible citizenship. The origins of American ideals and institutions are examined. A study of major events, issues, and personalities of the past provides a perspective for understanding contemporary issues and problems. The role of Virginia in the development of the United States is included. Topics included for study: Exploration and Colonization, European Economic Influences and Slavery in the Americas, the American Revolution, the Constitution and Early National Period, Civil War and Reconstruction, the Progressive Era, U.S. as Emerging World Power, World War II, the Cold War, Civil Rights Movements and the Contemporary U.S. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: All

ADVANCED PLACEMENT COURSES

PRE-AP WORLD HISTORY AND GEOGRAPHY TO 1500
Grade: 9  Credit: 1
Prerequisite: Assignment to Grade 9
This pre-collegiate course emphasizes basic historical research skills using primary and secondary sources to understand multiple causes and perspectives for significant historical events. The course prepares students for future AP history examinations. Course topics include those found in the standard World History and Geography to 1500 course but emphasis is placed on interregional studies, themes, and global historical patterns and processes. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 3, 6, 7, 8, 9, 10, 11, 12

This course is an integral component of the Biotechnology Center (BIOTECH), Center for Environmental and Natural Sciences (CENS), Center for the Fine and Performing Arts (CFPA), Center for International Studies and Languages (CISL), and Centers for Information Technology (IT). For additional information, refer to the description of these programs in the specialty program section.
AP WORLD HISTORY
Grade: 10
Credit: 1
Prerequisite: Successful completion of World History and Geography to 1500 or Pre-AP World History and Geography to 1500 is recommended

This college level course uses the College Board’s AP syllabus to develop greater understanding of the evolution of global processes and contacts in different types of human societies. The course highlights the nature of changes in global frameworks and their causes and consequences, as well as comparisons among major societies. It emphasizes relevant factual knowledge, leading interpretive issues, and skills in analyzing types of historical evidence. The course is organized around five time periods. The first two are explored in detail in the Pre-AP World History and Geography to 1500 course and reviewed briefly in the beginning of this course. The last 500 years are the primary focus of this second year of the study. Specific themes provide further organization to the course, along with consistent attention to contacts among societies that form the core of world history as a field of study. In May, the students will take an AP World History Examination to qualify for advanced standing and/or credit in college. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 3, 6, 7, 8, 9, 10, 11, 12

AP U.S. HISTORY
Grade: 11
Credit: 1
Prerequisite Assignment to Grade 11, AP World History is recommended

AP U.S. History is a course designed for the student who accepts the challenge of an advanced class in American History. Students will be expected to master all of the SOL objectives for Virginia and U.S. History. In addition, analytical writing will be required, both in essays developed within the framework of the class and in papers developed as a result of research assignments. In May, the students will take an AP World History Examination to qualify for advanced standing and/or credit in college. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 3, 4, 6, 7, 8, 9, 10, 11, 12

AP GOVERNMENT AND POLITICS: U.S.
Grade: 12
Credit: 1
Prerequisite: Assignment to Grade 12, AP U.S. History is recommended

This college level course in U.S. political science includes topics such as: Constitutional underpinnings of U.S. government, political beliefs and behaviors, political parties, interest groups, and mass media, institutions of national government, public policy, and civil rights and liberties. Analytical writing will be required, both in essays developed within the framework of the class and in papers developed as a result of research assignments. In May, the students will take an Advanced Placement Government Examination to qualify for advanced standing and/or credit in college.

Schools offering course: 1, 3, 4, 6, 7, 8, 9, 10, 11, 12, 99

AP GOVERNMENT AND POLITICS: COMPARATIVE
Grades: 11-12
Credit: 1
Prerequisite: Virginia and U.S. History or Advanced Placement American History or concurrent enrollment

This college level political science course includes topics such as: introduction to comparative politics; sovereignty, authority, and power; political institutions; citizens, society, and the State; political and economic change; and public policy. Case studies in the governments of Great Britain, China, Iran, Mexico, Russia, and Nigeria provide context for exploring the topics of the course. Analytical writing will be required, both in essays developed within the framework of the class and in papers developed as a result of research assignments. In May, the students will take an Advanced Placement Government Examination to qualify for advanced standing and/or credit in college.

Schools offering course: 5, 7, 8, 11, 12

PRE-AICE WORLD HISTORY AND GEOGRAPHY TO 1500
Grade: 9
Credit: 1
Prerequisite: Assignment to Grade 9 and a pass advance on the Civics and Economics SOL test is recommended

This pre-collegiate course explores the nature and use of historical evidence, causes and consequences, continuity and change, and similarities and differences related to human activity of the past. Topics include: Early Man through Rome, The Late Roman Empire, The Rise of Islam, Feudalism and the Early Middle Ages, Crusading and the Crusader States to 1204, Carolingians and Charlemagne, Early Religions and Trade Routes, The Rise of New Monarchies, The Ottoman Empire, European Social and Economic Development, and The Renaissance. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 1, 4

IGCSE HISTORY
Grade: 10
Credit: 1
Prerequisite: Assignment to Grade 10

This course offers the opportunity to study world history from 1500 with a focus on the 19th century to the beginning of the twenty-first century. It encourages learners to raise questions and to develop and deploy historical skills, knowledge and understanding in order to provide historical explanations. Learners will explore history from a diversity of perspectives, including social, economical, cultural and political, and are given the opportunity to: develop an interest in and enthusiasm for learning about and understanding the past; explore historical concepts such as cause and consequence, change and continuity, and similarity and difference; appreciate historical evidence and how to use it; gain a greater understanding of international issues and inter-relationships and; learn how to present clear, logical arguments.

Schools offering: 1, 4
AICE WORLD HISTORY
Grade: 10 Credit: 1
Prerequisite: Successful Completion of Pre-AICE World History and Geography to 1500, teacher recommendation, and a pass advance on the World History I SOL test is recommended
This college level course examines the nature and use of historical evidence, causes and consequences, continuity and change, and similarities and differences related to human activity of the past. Topics include: Discovery and Exploration, Rise of Nation-States, Reformation, Wars of Religion, Absolutism, The Scientific Revolution, the Enlightenment, The French Revolution, Development of Modern Nation States, Liberalism, Nationalism, Industrial Revolution, Imperialism and World War I and its aftermath, International Relations Since 1919, Russia: 1881-1939, the Rise of Fascism, Causes of WWII and the Final Peace Settlement, The Cold War, and World Issues. This course is required for those enrolled in the Cambridge program. Students will sit for AICE examinations. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.
Schools offering course: 1, 4

AICE U.S. HISTORY
Grade: 11 Credit: 1
Prerequisite: Successful Completion of English 10 or IGCSE English 10, IGCSE World Geography, World History and Geography from 1500
This advanced study of American history follows an international curriculum which focuses on key developments that transformed the United States from an isolated, agrarian society to the world’s leading superpower. Students will demonstrate an understanding of the complexity of issues, will interpret source materials as historical evidence, and will demonstrate facility in their use. On external examinations, students will answer compulsory source-based questions and respond to a choice of essay questions. They will be prepared to qualify for the Advanced International Certificate of Education Diploma. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.
Schools offering course: 1, 4

ADVANCED MIDDLE YEARS PROGRAMME – AP GOVERNMENT AND POLITICS: COMPARATIVE
Grades: 10-12 Credit: 1
Recommended prerequisite: Adv-MYP English 9 and Adv-MYP World History and Geography from 1500
This college level course includes topics such as: sovereignty, authority, and power; political institutions; citizens, society, and the State; political and economic change; and public policy. Case studies in the governments of Great Britain, China, Iran, Mexico, Russia, and Nigeria provide context for exploring the topics of the course. Analytical writing is required. In May, students take the AP Examination to qualify for advanced standing and/or credit in college. Students pursuing the IB Diploma take this course as sophomores. IB History certificate candidates take this course during their sophomore or junior year.
Schools offering course: 2, 5

ADVANCED MIDDLE YEARS PROGRAMME – AP GOVERNMENT AND POLITICS: U.S.
Grades: 10-12 Credit: 1
Recommended prerequisite: Adv-MYP English 9 and Adv-MYP World History and Geography from 1500
This college level course in U.S. political science includes topics such as: Constitutional underpinnings of U.S. government, political beliefs and behaviors, political parties, interest groups, and mass media, institutions of national government, public policy, and civil rights and liberties. Analytical writing will be required, both in essays developed within the framework of the class and in papers developed as a result of research assignments. In May, the students will take an AP Government Examination to qualify for advanced standing and/or credit in college. Students pursuing the IB Diploma take this course as sophomores. IB History certificate candidates take this course during their sophomore or junior year.
Schools offering course: 2, 5

IB GLOBAL POLITICS (SL)
Grades: 11 - 12 Credit: 1
This course explores fundamental political concepts such as power, rights, liberty and equality, in a range of contexts and at a variety of levels. It allows students to develop an understanding of the local, national, international, and global dimensions of political activity, as well as allowing them the opportunity to explore political issues affecting their own lives. The course helps students to understand abstract political concepts by grounding them in real world examples and conflicts and independence movements, world religions and the contemporary world. Students are trained in historical analysis by discussion, research, and oral and written presentation. Students analyze documents for their origin, purpose, value and limitations. These skills are the foundation for the four year IB sequence and are a critical component of IB assessments. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.
Schools offering course: 5
case studies. This course will be an excellent addition and supplement to the courses the students are already taking in the IB History program, building on the foundations established in AP Comparative Government and supporting their studies in 20th Century History. This course provides further study of Comparative Government and prepares students for the IB History course sequence.

Schools offering course: 2

**IB HISTORY I: HISTORY OF THE AMERICAS (HL)**

*Grades: 11-12*  
*Credit: 1*  
*Prerequisite: Successful completion of Adv-MYP World History and Geography from 1500, Adv-MYP /AP Government and Politics: U.S. or Comparative*

This is a survey course of U.S., Canadian, and Latin American history from early European contacts with American Indians and the people of the First Nation through the 20th Century including analysis of the U.S. Civil War, industrialization, expansion, and the Latin American dictatorships. The course focuses on the American region’s historical experience, and political, economic, and social systems. Students will demonstrate historical analysis by discussion, presentation, and written work including the IB History Internal Assessment. This is the first course in a required two-year sequence of IB diploma level history culminating with a series of external examinations including a full examination on this regional study and may provide college level credit at many colleges and universities. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 2, 5

**IB HISTORY II: TOPICS IN TWENTIETH CENTURY HISTORY (HL)**

*Grade: 12*  
*Credit: 1*  
*Prerequisite: Successful completion of IB History I*

This survey course of 20th Century World History includes topics such as: causes, practices, and effects of war; the rise and rule of single-party states; East-West relations after 1945; nationalists and independence movements; decolonization; and the emergence and problems of new nations. This course will continue to stress political, economic, and social systems as well as require students to further develop their skills of interpretation and analysis through historiography. The course culminates in a series of external assessments that include document-based questions, short essay response and research papers which provide the possibility of college credit. This is the second in a two course sequence for the IB history certificate and is required for the IB diploma.

Schools offering course: 2, 5

**IB GEOGRAPHY (SL)**

*Grade: 11-12*  
*Credit: 1*  
*Prerequisite: Successful completion of Adv-MYP World History and Geography from 1500, and Virginia and U.S. History*

In this college level course, students will develop a global perspective and a sense of world interdependence by understanding the relationship between people, place, and environment. Additional topics include: environmental quality; planning and management of resources for present and future generations; the relevance of geography in analyzing contemporary world issues; issues of social justice, equality and respect for others and an appreciation of diversity. Students will explore a wide range of geographical methodologies and apply appropriate techniques of inquiry including Geographic Information Systems technologies to develop solutions to geographic related issues and problems. The course culminates in an external assessment that provides the possibility of college credit. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 2, 5

**DUAL ENROLLMENT COURSES**

**US/VA HISTORY DUAL ENROLLMENT**

*Grade: 11*  
*Credit: 1*  
*Both His 121 and 122 must be taken to earn credit for US/VA History*

The study of the nation’s history provides the intellectual foundations for responsible citizenship. The origins of American ideals and institutions are examined. A study of major events, issues, and personalities of the past provides a perspective for understanding contemporary issues and problems. The role of Virginia in the development of the United States is included with special emphases on George Washington, Thomas Jefferson, James Madison, and George Mason. Topics included for study: Exploration and Colonization, European Economic Influences and Slavery in the Americas, the American Revolution, the Constitution and Early National Period, sectional tensions, Civil War and Reconstruction, the Progressive Era, U.S. as Emerging World Power, the Great War, World War II, the Cold War, Civil Rights Movements and the Contemporary U.S. As a result of this course students will have a better understanding the history of the United States and Virginia. Also, as the course focuses on critical, creative and collaborative thinking skills students will be better prepared for the rigors of collegiate study and/or the workforce. Historical thinking skills will be practiced and assessed include synthesizing evidence from artifacts and primary and secondary sources, judging the reliability of sources based on evidence through using sourcing, contextualization, corroborating and close reading skills, an understanding of historiography, constructing arguments using evidence from multiple sources, comparing and contrasting historical, cultural, economic, and political perspectives, using geographic information to determine patterns and trends in Virginia and United States history analyzing multiple connections across time and place, using a decision-making model to analyze and explain the incentives for and consequences of a specific choice made in a historical context, constructing historical arguments based on evidence and evaluated in the proper context of time and place, and investigating and researching to develop products orally and in writing. This course will offer an opportunity for students to apply their knowledge and skills from all their previous course work in history and social science. This course has an associated Standards of Learning (SOL) test.
Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 1, 6, 8, 9, 10, 11

**US/VA GOVERNMENT DUAL ENROLLMENT**

Grade: 12

Credit: 1

Both PLS 211 and 212 must be taken to earn credit for US/VA US/VA Government

This course teaches an in depth understanding of the American political system. Topics include the founding principles of the United States, democracy and republican principles of government, the Constitution, Federalism, political behavior, civil liberties, the three branches of government in the US and Virginia, domestic and foreign policy, civil rights, and the role of the US in global affairs. Students will use social science skills to gain a deeper understanding of the function of federal, state and local government, and the responsibilities and duties of citizenship.

Schools offering course: 1, 6, 8, 9, 10

**AP ECONOMICS**

Grades: 11-12

Credit: 1

This course fulfills the Economics and Personal Finance graduation requirement.

Prerequisite: Teacher recommendation

Advanced Placement Economics will provide students a thorough understanding of basic economic concepts; the nature and functions of product and factor markets. Students will study the role of the government, as well as the concepts of efficiency and equity. Topics also include: measures of economic performance; national income and price determination; economic growth; international finance, exchange rates and balance of payments. In May, the students will take one or both AP Economics Examinations (Microeconomics or Macroeconomics) to qualify for advanced standing and/or credit in college.

Schools offering course: 3, 6, 7, 8, 9, 10, 11, 12

**AP HUMAN GEOGRAPHY**

Grades: 11-12

Credit: 1

Prerequisite: Successful completion of World History from 1500

This introductory college course in human geography introduces students to the systematic study of patterns, and processes that have shaped human understanding, use, and alteration of Earth’s surface. Students employ spatial concepts and landscape analysis to examine human social organization and its environmental consequences. They also learn about the methods and tools geographers use in their science and practice, including Geographic Information Systems. In May, the students will take an AP Human Geography Examination to qualify for advanced standing and/or credit in college. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 1, 3, 7, 11

**AP PSYCHOLOGY**

Grade: 12 (Grades 11-12 at school 9 and 11 only)

Credit: 1

Prerequisite: Teacher recommendation

The AP Psychology course is designed to introduce students to the systematic and scientific study of the behavior and mental processes of human beings and other animals. Students are exposed to the psychological facts, principles, and phenomena associated with the major subfields within psychology. They will also learn about the ethics and methods psychologists use in their science and practice. In May, the students will take an AP Psychology Examination to qualify for advanced standing and/or credit in college.

Schools offering course: 3, 4, 6, 7, 8, 9, 10, 11, 12

**IB ECONOMICS**

Grade: 12

Credit: 1

This course fulfills the Economics and Personal Finance graduation requirement

Prerequisite: Adv-MYP/AP Government and Politics: U.S. or Comparative and Algebra II

This academically rigorous course focuses on the choices that must constantly be made by individuals, firms, and governments, which affect both their own economic well being and that of society as a whole. The questions of “What?” “How?” and “For whom?” are central to the field of economics. Topics will be approached from an international perspective. The course emphasizes the study of economic development as a part of the solution to contemporary real world problems. The course culminates in an external assessment that provides the possibility of college credit.

Schools offering course: 2, 5
IB SOCIAL AND CULTURAL ANTHROPOLOGY (SL)
Grades: 11-12
Prerequisite: Interest in the subject
IB Social and Cultural Anthropology is a college level comparative study of human societies and culture. It explores both the universal principals of social and cultural life and characteristics of specific societies and cultures. Topics include small groups, as well as kinship relations, symbolism, exchange, political organizations, social control and gender. The course examines society from the small scale to the complex industrial scale, as well as modern nation states. The course culminates in an external assessment that provides the possibility of college credit.

Schools offering course: 2, 5

IB PSYCHOLOGY
Grade: 12
Prerequisite: None
This college level course investigates three psychological perspectives including: biological, cognitive, and learning. Students will also explore an optional subject area and undertake two studies: research and experimental. This elective course of study prepares students for the standard level examination in Psychology and counts toward the IB Diploma. The course culminates in an external assessment that provides the possibility of college credit.

Schools offering course: 5

AICE ECONOMICS (AS – A LEVEL)
Grades: 10-12
This course fulfills the Economics and Personal Finance graduation requirement
Prerequisite: Successful completion of Algebra I
Cambridge International AS and A Level Economics will explain and analyze economic issues and arguments, evaluate economic information, and organize, present and communicate ideas and judgments clearly. The course covers a range of basic economic ideas, including an introduction to the price system and government intervention, international trade and exchange rates, the measurement of employment and inflation, and the causes and consequences of inflation. Students also study the theory of the firm, market failure, macroeconomic theory and policy, and economic growth and development.

Schools offering course: 1, 4

IGCSE GLOBAL PERSPECTIVES
Grade: 10
Credit: 1
Cambridge IGCSE Global Perspectives provides opportunities for inquiry into, and reflection on, key global issues from a personal, local/national, and global perspective. Young people globally face unprecedented challenges in an interconnected and information-heavy world, not least in how they will gain a sense of their own active place in the world and cope with changes that will impact on their life chances and life choices. Students will have opportunities to acquire and apply a range of skills, including: gathering, synthesizing, and communicating information; collaborating with others to achieve a common outcome; analyzing and evaluating planning, processes and outcomes; and developing and justifying a line of reasoning. Students will explore stimulating topics that have global significance. They will assess information critically and explore lines of reasoning. They will learn to collaborate with others from another culture, community, or country, directing much of their own learning and developing an independence of thought.

Schools offering course: 1, 4

AICE GLOBAL PERSPECTIVES
Grades: 11-12
Credit: 1
The focus of AICE Global Perspectives is on developing the ability to think, speak, and write critically about a range of global issues where there is always more than one point of view. Students will become aware of global themes and issues, viewed from personal, local, national and international perspectives, and of the connections between them. This cross-curricular program challenges students to work in groups, to present seminars, to create projects, and to publish essays. Students who sign up for AICE Global Perspectives must be self-motivated and have the ability to establish and meet deadlines. This course is recommended for juniors but is also available to seniors. The course culminates in an external assessment that provides the possibility of college credit.

Schools offering course: 1, 4

AICE INTERNATIONAL HISTORY 1945 – 1991
Grades: 11-12
Prerequisite: A grade of “B” or better in U.S. History or AICE U.S. History, English 11 or AICE English 11, and teacher recommendation
AICE International History, 1871-1991, will help students to develop an interest in the past and an awareness of historical concepts. By studying diverse historical sources, methods, and interpretations of particular historical issues, students will learn to think independently and make informed judgments. Through examination of six major themes, students will gain knowledge and understanding of the key developments that shaped the international order after 1871. Content/themes include: Imperialism, World War I, the rise of Fascist powers and American neutrality before 1939, World War II, the Cold War conflict, globalization of the Cold War, the Nuclear Arms Race; crisis of Communism and the end of the Cold War; the international economy; and the Third World. Successful completion of the end of course exam will result in an AICE certificate or an AICE Diploma.

Schools offering course: 1, 4
AICE PSYCHOLOGY
Grade: 12
Credit: 1
Prerequisite: None

This college level course is designed to help students develop an appreciation of the various fields of psychology including: cognitive, social, physiological, and developmental psychology as well as the psychology of individual differences. The course also investigates the relationship of psychology to education, health, organizations, the environment and abnormality. This elective course prepares students for the Cambridge examination in Psychology and counts toward the Advanced International Certificate of Education (AICE) Diploma. The course culminates in an external assessment that provides the possibility of college credit.

Schools offering course: 1, 4

AICE SOCIOLOGY
Grade: 12
Credit: 1
Prerequisite: Student must have previously taken any AICE course

In a rapidly changing world, Cambridge International Sociology offers students the opportunity to not only explore the processes that are shaping current trends, but also to develop an understanding of the complexity and diversity of human societies and their continuities with the past. The study of Sociology should stimulate awareness of contemporary social, cultural and political issues, and focus attention on the importance of examining these issues in a rigorous, reasoned and analytical way. The course culminates in an external assessment that provides the possibility of college credit.

Schools offering course: 1

HANDS ON HISTORY: DISCOVERING PRINCE WILLIAM COUNTY’S PAST
Grade: 10-12
Credit: 1
Prerequisite: None

This course teaches stewardship and preservation of local cultural resources; develops applied skills in historical analysis such as archival research, artifact interpretation and oral history interview techniques; enables students to share research findings with the community; and encourages community service and active citizenship. Local objects, primary sources, architectural remains, landscapes and citizens are explored. Publications from the Prince William Historic Commission will be available, as well as opportunities to interact with the county government’s and citizen groups’ preservation and education efforts. Topics include: regional prehistory to native contact with Europeans; colonial times through the 1750s; early agricultural, industrial and commercial developments; the Revolutionary War’s effects; the diverse antebellum population; the Civil War and the impact of Reconstruction on the area; debate over formation of magisterial districts and the shifts in the location of the county seat; the county at the turn of the century, WWI, Quantico and WWII; and desegregation of local schools.

Schools offering course: 3, 12

PSYCHOLOGY
Grade: 12
Credit: 1
Prerequisite: Assignment to Grade 12

Psychology will introduce the students to the study of individual human behavior. Students explore subjects studied by behavioral scientists and apply psychological concepts to everyday human problems and life. Topics will include the scientific methods used in psychology, human growth and development, the study of personality, and mental health and behavioral disorders.

Schools offering course: 1, 2, 4, 6, 7, 8, 9, 11

SOCIOLOGY
Grade: 12
Credit: 1
Prerequisite: Assignment to Grade 12

Problems and issues about social behavior, organizations, and institutions of people are examined. The study includes an examination of the structure and the function of groups, the variations in the social order and the dynamics of change in a social environment. There is focus upon the development of skills for participating more effectively in contemporary society by examining issues and seeking solutions to problems involving the interactions of people.

Schools offering course: 1, 2, 3, 6, 7, 8, 9, 10, 11

TWENTIETH CENTURY HISTORY
Grade: 12
Credit: 1
Prerequisite: Assignment to Grade 11

The role of the United States in the modern world is explored. Emphasis is placed on the national and international issues of the 20th Century. Students will have an opportunity to engage in problem-solving and decision-making activities using a format based on research, and written and oral expression. Opportunities will be provided to develop possible resolutions to current issues confronting the nation.

Schools offering course: 1, 4, 6, 7, 9, 10, 11, 12

WORLD GEOGRAPHY
Grade: 10
Credit: 1
Prerequisite: Assignment to Grade 10 or above

The focus of this course is the study of the world’s peoples, places, and environments, with an emphasis on world regions. The knowledge, skills, and perspectives of the course are centered on the world’s population and cultural characteristics, landforms and climates, economic development, and migration and settlement patterns. Spatial concepts of geography will be used as a framework for studying interactions between humans and their environments. Using geographic resources, students will employ inquiry, research, and technology skills to ask and answer geographic questions. Particular emphasis is placed on students’ understanding and applying geographic concepts and skills to their daily lives. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

Schools offering course: 1, 2, 5

School Number Code:
1 – Brentsيلة
2 – Gar-Field
3 – Osbourn Park
4 – Potomac
5 – Stonewall
6 – Woodbridge
7 – Hylton
8 – Forest Park
9 – Battlefield
10 – Freedom
11 – Patriot
12 – Colgan
99 – Virtual

157
INTRODUCTION TO LAW: LAW IN ACTION

Grade: 12  Credit: 1

This Introduction to Law course is designed to offer students a practical and real world exposure to many legal issues in our society. This is a FAST PACED and comprehensive course. Students will encounter many topics and materials that law school students learn about in their first year of law school. Students will read about famous Supreme Court Cases and analyze contemporary trials to understand the nature of how the United States justice system works. The course provides practical information and problem-solving opportunities regarding the law. Students will develop knowledge of the law and skills necessary for survival in our law based society. There will be opportunities to explore the definition of law, citizen rights and responsibilities under the law, learn methods of dispute resolution as well as identify and analyze public issues.

Schools offering course: 11

1 – Brentsville
2 – Gar-Field
3 – Osbourn Park
4 – Potomac
5 – Stonewall
6 – Woodbridge
7 – Hylton
8 – Forest Park
9 – Battlefield
10 – Freedom
11 – Patriot
12 – Colgan
99 – Virtual
SPECIAL EDUCATION

SPECIAL EDUCATION COURSES CAN FULFILL THE FOLLOWING GRADUATION REQUIREMENTS:

- Employment Opportunities for Youth (EMPLOY) courses can fulfill Sequential Elective requirement and Career and Technical Education (CTE) completer sequence elective

COMPENSATORY SKILLS I

COMPENSATORY SKILLS II

COMPENSATORY SKILLS III

COMPENSATORY SKILLS IV

Grades: 9-12  Credit: 1

Prerequisite: Any student whose Individualized Education Program (IEP) indicates the appropriateness of the compensatory skills course offering. Students can take Compensatory Skills each year up to four years.

Compensatory Skills is designed to provide students with individualized remediation and compensatory skills in their specific academic area(s) of need as identified through the eligibility and IEP process.

Schools offering course: All

EMPLOY III

Grades: 10-12  Credit: 1

Prerequisite: It is recommended that a student complete EMPLOY I and/or EMPLOY II before enrolling in EMPLOY III

EMPLOY III is a two-period class with periods scheduled back-to-back. The focus for EMPLOY III is to reinforce and enrich the goals of EMPLOY I and EMPLOY II, as well as vocational exploration and the development of marketable job skills through the completion of an unpaid internship.

Schools offering course: All

EMPLOY IV

Grades: 10-12  Credit: 1

Prerequisite: It is recommended that a student complete EMPLOY I and/or EMPLOY II before enrolling in EMPLOY V

The focus of EMPLOY V is to provide students with an opportunity to apply their self-awareness, employability, self-advocacy, and life management skills in order to obtain and retain employment. During the school year, students complete a minimum of 396 hours of competitive employment.

Schools offering course: All

LIFE SKILLS

Grades: 9-12  Credit: 1

Prerequisite: Any student who is receiving special education services and whose Individualized Education Program (IEP) indicates the appropriateness of the Life Skills course offering

The focus of Life Skills is to enhance the student’s social, emotional and academic success. Students will develop and enhance communication skills, organizational/study techniques, and social intervention skills. Stress management techniques will also be taught. The students will participate in the development of a transition plan and explore skills needed for employment/post-secondary education as well as for learning and self-advocacy.

Schools offering course: All

LEARNING STRATEGIES I

Grades: 9-12  Credit: 1

Prerequisite: Any student who is receiving special education services whose Individualized Education Program (IEP) indicates the appropriateness of the Learning Strategies I course offering

Learning Strategies I is designed to provide students with direct and explicit instruction on how to acquire new information, how to study, and how to express their thoughts. Students may begin to explore the formal Strategic Instruction Model (SIM), Kansas University Strategies and/or informal strategies that will enable the student to experience success in high school.

Schools offering course: All except 7, 9
LEARNING STRATEGIES II
Grades: 9-12
Learning Strategies II provides direct instruction utilizing the Strategic Instruction Model (SIM), or Kansas University Strategies, to enable students to experience success in high school. The focus of the course is to provide direct, explicit instruction in academic and cooperative thinking strategies.

Schools offering course: All except 7, 9

PERSONAL LIVING AND FINANCE
Grades: 10-12 Credit: 1 elective credit for Standard or Advanced Studies Diplomas
Prerequisite: None
This course is available to students with disabilities eligible for special education services and whose Individualized Educational Program (IEP) indicates the appropriateness of the Social Skills I course offering.

This course will provide students with direct instruction in specific social skills using the Skillstreaming and Prepare social skills programs. The purpose of this course is to increase academic achievement through the teaching and remediation of social skills.

Schools offering course: All except 6, 7

SOCIAL SKILLS I
Grades: 9-12 Credit: 1
Prerequisite: Any student who is receiving special education services and whose Individualized Educational Program (IEP) indicates the appropriateness of the Social Skills I course offering.

This course will provide students with direct instruction in specific social skills using the Skillstreaming and Prepare social skills programs. The purpose of this course is to increase academic achievement through the teaching and remediation of social skills. When completed, students will be able to demonstrate appropriate behavior in changing environments, effective communication skills, positive relationships with others, project a positive self-image, and utilize social skills in the learning process. This course may be used to satisfy the sequential elective requirement.

Schools offering course: All except 6, 7

SOCIAL SKILLS II
Grades: 10-12 Credit: 1
Prerequisite: Any student who has completed Social Skills I and whose Individualized Educational Program (IEP) indicates the appropriateness of the Social Skills II course offering.

This course will provide students with direct instruction in a higher level of specific social skills than introduced in Social Skills I, including, anger control, and decision making from the Prepare curriculum. The purpose of this course is to increase academic achievement through the teaching and refining of social skills. Students will be able to demonstrate appropriate behavior in changing environments, effective communication skills, positive relationships with others, project a positive self-image, and utilize social skills in the learning process. This course may be used to satisfy the sequential elective requirement.

Schools offering course: All except 9

TRANSITIONAL WORK SKILLS
Grades: 9-12 Credit: 1
Prerequisite: Any student who has completed Social Skills I and whose Individualized Educational Program (IEP) indicates the appropriateness of the Social Skills II course offering.

This course is intended to address the vocational needs of middle and high school students participating in an Aligned Standards of Learning curriculum. Course proficiencies can contribute in the development of the student's transition plan. Pre-vocational and vocation tasks will be the fundamental areas of instruction. The focus of this course, Transitional Work Skills, is to provide students with opportunities to develop competencies required for increased independence and to facilitate post-secondary employment. This course will be open to any student who is receiving special education services at the middle and high school level whose Individualized Education Program (IEP) indicates the need for vocational skills, to include students with disabilities who are English learners.

Schools offering course: All

STUDENT ASSISTANTS

STUDENT ASSISTANT FOR SPECIAL EDUCATION
Grades: 9-12 Credit: 0.5 (36 weeks)
Prerequisite: Teacher recommendation

The Student Assistant for Special Education course offers the student the opportunity to learn about the field of special education while assisting a special education teacher. Students will be introduced to a professional and practical experience in working with students with disabilities who require special education. The course may be taken more than once for credit with prior approval of the special education department chairperson.

Schools offering course: 1, 2, 3, 4, 5, 7, 8, 11, 12

PHYSICAL EDUCATION ASSISTANT
Grades: 10-12 Credit: 0.5
Prerequisite: Successful completion in Health and Physical Education I and II; approval of the department chairperson and the supervising teacher

This course offers opportunities for further positive learning experiences for the student who is interested in pursuing a career in Health and Physical Education. Emphasis is placed on assisting in the instructional program. This course may be taken more than once for credit.

Schools offering course: 1, 2, 3, 4, 7, 8, 11, 12

LAB ASSISTANT – LIBRARY ASSISTANT
Grades: 10-12 Credit: 0.5 (36 weeks)
Prerequisite: None

Students are trained to assist the library staff in maintaining the library program. Students are under the supervision of the librarian(s) but must be able to work independently to perform duties and carry out responsibilities as assigned. Basic duties may include shelving books in alpha or numeric order, assisting patrons in various capacities; circulation of books; knowledge of the computer databases; ability to evaluate websites; use of A/V equipment and duties as assigned by the librarian. This course may be taken more than once for credit.

Schools offering course: 3, 4, 7, 12
LAB ASSISTANT – SCIENCE SEMINAR

SCIENCE TEACHER’S AIDE

Grades: 10-12  Credit: 0.5 for Lab Assistant/Science Seminar; none for Science Teacher’s Aide

Prerequisite: Successful completion of subject in which assisting and prior approval of supervising teacher

Lab Assistant/Science Seminar offers the student the opportunity to learn more science while assisting a science teacher. The instructional objectives vary according to the course in which the student is assisting and according to the program, interests, and ability of the student. This course may be taken more than once for credit with prior approval of the science department chairperson. To earn credit for Lab Assistant, instructional objectives and evaluative criteria must be delineated as per Regulation 681-3, Section III.C.

Schools offering Lab Assistant/Science Seminar: 1, 2, 4, 5, 6, 7, 8, 9, 12

Science Teacher’s Aide only: 3, 12

OFFICE SPECIALIST I—PREPARATION

Grades: 9-12  Credit: 1

Prerequisite: None

Students complete the Office Specialist sequence identified locally or progress in the sequence until prepared to transfer into other business courses. Students develop skills in areas including keyboarding, word processing, office procedures, and records management. If a fourth year is needed, the teacher should use simulated activities in the following areas: word processing, spreadsheets, databases, telecommunications, desktop publishing, and records management.


Schools offering course: All except 6, 8, 2

OFFICE SPECIALIST II—PREPARATION

Grades: 10-12  Credit: 1

Prerequisite: None

Students complete the Office Specialist sequence identified locally or progress in the sequence until prepared to transfer into other business courses. Students develop skills in areas including keyboarding, word processing, office procedures, and records management. If a fourth year is needed, the teacher should use simulated activities in the following areas: word processing, spreadsheets, databases, telecommunications, desktop publishing, and records management.


Schools offering course: All except 6, 8, 12

OFFICE SPECIALIST III—PREPARATION

Grades: 11-12  Credit: 1

Prerequisite: None

Students complete the Office Specialist sequence identified locally or progress in the sequence until prepared to transfer into other business courses. Students develop skills in areas including keyboarding, word processing, office procedures, and records management. If a fourth year is needed, the teacher should use simulated activities in the following areas: word processing, spreadsheets, databases, telecommunications, desktop publishing, and records management.


Schools offering course: All except 6, 8, 12
WEIGHTED COURSES

The courses listed below have been designated as weighted college level courses. In computing the grade point average of students who have successfully completed any of these courses, the following point values will be assigned to the course(s):

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
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</tr>
<tr>
<td>B</td>
<td>4</td>
</tr>
<tr>
<td>C</td>
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<tr>
<td>D</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
</tr>
</tbody>
</table>

B+ = 4.4 points  
C+ = 3.4 points  
D+ = 1.4 points

Weighted Advanced Placement Courses (1.0W)

<table>
<thead>
<tr>
<th>Course</th>
<th>Course</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP English – Literature and Composition</td>
<td>AP Economics Micro and Macro</td>
<td>AP Chemistry VV</td>
</tr>
<tr>
<td>AP English – Language and Composition VV</td>
<td>AP Economics – Micro VV</td>
<td>AP Physics 1</td>
</tr>
<tr>
<td>AP English – Literature and Composition VV</td>
<td>AP Economics – Macro VV</td>
<td>AP Physics 2</td>
</tr>
<tr>
<td>AP English – Language and Composition VV</td>
<td>AP Psychology</td>
<td>AP Physics C; Mechanics</td>
</tr>
<tr>
<td>AP Human Geography</td>
<td>AP Psychology VV</td>
<td>AP Chinese Language VV</td>
</tr>
<tr>
<td>AP Human Geography VV</td>
<td>AP Calculus AB</td>
<td>AP French Language</td>
</tr>
<tr>
<td>AP History – United States</td>
<td>AP Calculus AB VV</td>
<td>AP German Language</td>
</tr>
<tr>
<td>AP History – United States VV</td>
<td>AP Calculus AB VV</td>
<td>AP Italian</td>
</tr>
<tr>
<td>AP World History</td>
<td>AP Calculus BC VV</td>
<td>AP Latin Vergil</td>
</tr>
<tr>
<td>AP World History VV</td>
<td>AP Calculus BC VV</td>
<td>AP Latin VV</td>
</tr>
<tr>
<td>AP History – European</td>
<td>AP Research</td>
<td>AP Russian Language</td>
</tr>
<tr>
<td>AP History – European VV</td>
<td>AP Seminar</td>
<td>AP Spanish Language</td>
</tr>
<tr>
<td>AP Government and Politics: U.S.</td>
<td>AP Computer Science A</td>
<td>AP Spanish Language VV</td>
</tr>
<tr>
<td>AP Government and Politics: U.S. VV</td>
<td>AP Computer Science A VV</td>
<td>AP Spanish Literature</td>
</tr>
<tr>
<td>AP Government and Politics: Comp. VV</td>
<td>AP Computer Science Principles</td>
<td>AP Studio Art – 2-D Design</td>
</tr>
<tr>
<td>AP Government and Politics: Comp. VV</td>
<td>AP Statistics</td>
<td>AP Studio Art – 3-D Design</td>
</tr>
<tr>
<td>AP Government and Politics: Comp. VV</td>
<td>AP Statistics VV</td>
<td>AP Studio Art – Drawing</td>
</tr>
<tr>
<td>AP Government and Politics: Comp. VV</td>
<td>AP Environmental Science VV</td>
<td>AP Art History</td>
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<tr>
<td>AP Government and Politics: Comp. VV</td>
<td>AP Biology</td>
<td>AP Music Theory</td>
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<tr>
<td>AP Government and Politics: Comp. VV</td>
<td>AP Biology VV</td>
<td>VV – Virtual Virginia</td>
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<tr>
<td>AP Government and Politics: Comp. VV</td>
<td>AP Chemistry</td>
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Weighted Advanced International Certificate Of Education Courses (1.0W)

<table>
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<th>Course</th>
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<tr>
<td>AS = Advanced Subsidiary Level</td>
<td>AICE International History, 1945-1991 (AS Level)</td>
<td>AICE Environmental Management (AS Level)</td>
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<tr>
<td>A = Advanced Level</td>
<td>AICE Psychology (AS Level)</td>
<td>AICE Chemistry (AS Level)</td>
</tr>
<tr>
<td>AICE Economics</td>
<td>AICE Thinking Skills (AS Level)</td>
<td>AICE Chemistry (A Level)</td>
</tr>
<tr>
<td>AICE English Literature (AS Level)</td>
<td>AICE Thinking Skills (A Level)</td>
<td>AICE Physics (AS Level)</td>
</tr>
<tr>
<td>AICE English Literature (A Level)</td>
<td>AICE Mathematics I (AS Level)</td>
<td>AICE French IV (AS Level)</td>
</tr>
<tr>
<td>AICE English Language and Composition (AS Level)</td>
<td>AICE Mathematics II (AS Level)</td>
<td>AICE French V (A Level)</td>
</tr>
<tr>
<td>AICE Global Perspectives</td>
<td>AICE Mechanics (A Level)</td>
<td>AICE Spanish IV (AS Level)</td>
</tr>
<tr>
<td>AICE Sociology</td>
<td>AICE Computing (AS Level)</td>
<td>AICE Spanish V (A Level)</td>
</tr>
<tr>
<td>AICE U.S. History (AS Level)</td>
<td>AICE Biology (AS Level)</td>
<td>AICE Art and Design (AS Level)</td>
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<td></td>
<td>AICE Biology (A Level)</td>
<td>AICE Music (AS/A Level)</td>
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<tr>
<td></td>
<td></td>
<td>AICE World History (AS/A Level)</td>
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Weighted IB Diploma Courses (1.0W)

<table>
<thead>
<tr>
<th>Course Description</th>
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<tbody>
<tr>
<td>HL = Higher Level</td>
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<tr>
<td>SL = Standard Level</td>
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<td>IB English I (HL)</td>
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<td>IB English II (HL)</td>
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<td>IB Theatre Arts (SL)</td>
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<td>IB Theory of Knowledge</td>
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<tr>
<td>IB Geography (SL)</td>
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<tr>
<td>IB History I (HL)</td>
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<tr>
<td>IB Social and Cultural Anthropology (SL)</td>
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</tr>
<tr>
<td>IB History II (HL)</td>
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</tr>
<tr>
<td>Adv-MYP/AP Government and Politics: US</td>
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<tr>
<td>Adv-MYP/AP Government and Politics: Comparative</td>
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</tr>
<tr>
<td>IB Economics (SL)</td>
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<td>IB Global Politics (HL)</td>
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<td>IB Psychology (SL)</td>
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<tr>
<td>IB Computer Science (HL)</td>
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<tr>
<td>IB Math: Applications and Interpretations (SL)</td>
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<td>IB Math: Analysis and Approaches I (HL)</td>
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<td>IB Math: Analysis and Approaches II (HL)</td>
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<td>IB Math: Analysis and Approaches I (SL)</td>
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<td>IB Math: Analysis and Approaches II (SL)</td>
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<td>IB Biology I (HL)</td>
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<td>IB Spanish V (HL)</td>
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<td>IB Spanish A1 (SL) Language &amp; Literature</td>
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<td>IB Spanish A1 (HL) Language &amp; Literature</td>
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<tr>
<td>IB Business Management (SL)</td>
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<tr>
<td>IB Film (SL)</td>
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<tr>
<td>IB Visual Arts (SLA or SLB)</td>
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<td>IB Visual Arts I (HL)</td>
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<td>IB Music I (SL)</td>
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<td>IB Music II (HL)</td>
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<tr>
<td>IB Personal and Professional Skills</td>
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<tr>
<td>IB Information Technology in a Global Society</td>
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</tr>
<tr>
<td>IB Global Politics (HL)</td>
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</tr>
<tr>
<td>IB Chemistry I</td>
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<tr>
<td>IB Chemistry II</td>
<td></td>
</tr>
<tr>
<td>Additional Weighted Courses (1.0W)</td>
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Weighted Community College Courses (1.0W)

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<tr>
<th>Course Description</th>
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<tbody>
<tr>
<td>Computer Networking Hardware Operations I – DE</td>
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<tr>
<td>Computer Networking Hardware Operations II – DE</td>
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<tr>
<td>Computer Networking Hardware Operations III – DE</td>
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<tr>
<td>Design, Multimedia, and Web Technologies - DE</td>
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<tr>
<td>IT Web Technologies - DE</td>
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<tr>
<td>IT Adv. Web Technologies - DE</td>
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<tr>
<td>Cybersecurity Network Systems - DE</td>
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<td>IT Fundamentals – DE</td>
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<td>Photography I - DE</td>
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<tr>
<td>Computer Networking Hardware Operations IV – DE</td>
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<tr>
<td>Criminal Justice II – DE</td>
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<tr>
<td>IT Database Design and Management – DE</td>
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<td>IT Advanced Database Design and Management – DE</td>
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<tr>
<td>SOL English College Composition 11 – DE</td>
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<tr>
<td>English College Composition 12 – DE</td>
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<tr>
<td>Survey of World Literature 12 – DE</td>
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<td>Cybersecurity Systems Technology I – DE</td>
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<tr>
<td>Cybersecurity Systems Technology, Advanced – DE</td>
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<tr>
<td>Early Childhood Education and Services I – DE</td>
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<tr>
<td>Early Childhood Education and Services II – DE</td>
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<td>Entrepreneurship – DE</td>
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<tr>
<td>IT Programming – DE</td>
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<tr>
<td>Biology II – DE</td>
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<tr>
<td>U.S. and Virginia Government – DE</td>
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<tr>
<td>US/VA History – DE</td>
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<tr>
<td>Speech &amp; Communications – DE</td>
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<tr>
<td>Welding I – DE</td>
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<tr>
<td>Welding II – DE</td>
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<tr>
<td>Welding III – DE</td>
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<td>Multivariable Calculus - DE</td>
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<tr>
<td>Linear Algebra - DE</td>
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<tr>
<td>Precalculus w/Trig for AB - DE</td>
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Additional Weighted Courses (1.0W)

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering and Architecture (PLTW)</td>
<td></td>
</tr>
<tr>
<td>Principles of Engineering (PLTW)</td>
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</tr>
<tr>
<td>Software Engineering (PLTW)</td>
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</tr>
<tr>
<td>Virginia Teachers for Tomorrow I - DE</td>
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<tr>
<td>Precalculus for BC</td>
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<tr>
<td>Data Structures and Algorithms</td>
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</table>
WEIGHTED COURSES (0.5W)

The courses listed below have been designated as weighted prerequisite courses. In computing the grade point average of students who have successfully completed any of these courses, the following point values will be assigned to the course(s):

<table>
<thead>
<tr>
<th>Grade</th>
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<tbody>
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<td>3.9</td>
</tr>
<tr>
<td>B</td>
<td>3.5</td>
</tr>
<tr>
<td>C+</td>
<td>2.9</td>
</tr>
<tr>
<td>C</td>
<td>2.5</td>
</tr>
<tr>
<td>D+</td>
<td>1.4</td>
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<tr>
<td>D</td>
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</tbody>
</table>

Pre-AP Algebra I  
Pre-AP Geometry  
IGCSE Geometry  
IGCSE Algebra II/Trigonometry  
Adv-MYP Algebra I  
Adv-MYP Geometry  
Adv-MYP Algebra II  
Adv-MYP Algebra II/Trigonometry  
Advanced Algebra II/Trigonometry  
Advanced Computer Mathematics  
Advanced Computer Studies  
Pre-AP English 9  
Pre-AP English 10  
IGCSE English 9  
IGCSE English 10  
Adv-MYP English 9  
Adv-MYP English 10  
Advanced Earth Science  
Pre-AP Biology  
Pre-AP Chemistry  
IGCSE Biology  
IGCSE Chemistry  
IGCSE Physics  
Adv-MYP Earth Science  
Adv-MYP Biology  
Adv-MYP Chemistry  
Pre-AP World History and Geography to 1500  
Pre-AICE World History and Geography to 1500  
IGCSE History  
Adv-MYP World History and Geography from 1500  
IGCSE Global Perspectives  
Advanced Programming  
Advanced Fashion Marketing  
Advanced Marketing  
Advanced Sports, Entertainment, and Recreational Marketing  
Game Design and Development, Advanced  
Advanced Computer Information Systems  
Advanced Accounting  
Advanced French Language III  
Advanced German Language III  
Advanced Latin Language III  
Advanced Russian Language III  
Advanced Spanish Language III  
Advanced French Language IV  
Advanced German Language IV  
Advanced Latin Language IV  
Advanced Russian Language IV  
Advanced Spanish Language IV  
IGCSE French III  
IGCSE Italian III  
IGCSE Spanish III  
Adv-MYP French III  
Adv-MYP Spanish III  
IB AB Initio French II  
IB AB Initio Spanish II  
Advanced Band  
CFPA Colgan Chamber Ensemble  
CFPA Philharmonic Orchestra  
CFPA Wind Symphony  
Vocal Ensemble  
CFPA Dance IV Artist  
Directing for the Stage and Screen  
Orchestra Ensemble  
Adv-MYP Art I  
Adv-MYP Orchestra  
Adv-MYP Choir  
Adv-MYP Band  
Theatre IV  
IGCSE Music Studies  
Advanced Music Tech  
CFPA Piano
Sample Course Schedules

Students select courses each school year with their school counselor. These very personal choices should reflect a student’s interests and post high school plans. The sample schedules below are intended to guide parents and students as they navigate high school graduation requirements. A student’s specific schedule may look different than the samples listed below.

Sample Schedule for Advanced Studies Diploma - 26 standard units of credit required

<table>
<thead>
<tr>
<th>Grade 8</th>
<th>Grade 9</th>
<th>Grade 10</th>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 9</td>
<td>English 10</td>
<td>English 11</td>
<td>English 12</td>
<td></td>
</tr>
<tr>
<td>Algebra I</td>
<td>Geometry</td>
<td>Algebra II/Trig</td>
<td>Precalculus for BC</td>
<td>Calculus AB or BC/Statistics/Computer Science</td>
</tr>
<tr>
<td>Earth Science</td>
<td>Biology</td>
<td>Chemistry</td>
<td>Physics I</td>
<td></td>
</tr>
<tr>
<td>World History from 1500</td>
<td>World History to 1500</td>
<td>U.S. and Virginia History</td>
<td>U.S. and Virginia Government</td>
<td></td>
</tr>
<tr>
<td>World Language I</td>
<td>World Language II</td>
<td>World Language III</td>
<td>World Language IV</td>
<td>World Language V</td>
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<tr>
<td>HPE I</td>
<td>HPE II</td>
<td>Economics and Personal Finance</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>Elective**</td>
<td>Elective**</td>
<td>Elective</td>
<td>Elective</td>
</tr>
</tbody>
</table>

A student’s elective choice may be a Fine Arts, CTE, or other elective course that meets a student’s individual needs. Students in need of additional academic support may take an elective course that is prescribed in their Individualized Educational Plan (IEP) or English Language Service Delivery Plan (SDP).

** Students who enter the 9th grade for the first time in the 2018-19 school year and beyond must meet the sequential elective requirement during their high school career.

Sample Schedule for Standard Diploma – 22 standard units of credit required

<table>
<thead>
<tr>
<th>Grade 9</th>
<th>Grade 10</th>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 9</td>
<td>English 10</td>
<td>English 11</td>
<td>English 12</td>
</tr>
<tr>
<td>Algebra I</td>
<td>Geometry</td>
<td>Algebra II or Algebra Functions and Data Analysis</td>
<td>Upper Level Math Course or Career Preparatory Elective</td>
</tr>
<tr>
<td>Earth Science</td>
<td>Biology</td>
<td>Chemistry</td>
<td>Upper Level Science Course or Career Preparatory Elective</td>
</tr>
<tr>
<td>World History from 1500</td>
<td>World History to 1500</td>
<td>U.S. and Virginia History</td>
<td>U.S. and Virginia Government</td>
</tr>
<tr>
<td>HPE I</td>
<td>HPE II</td>
<td>Economics and Personal Finance</td>
<td>Career Preparatory Elective</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective</td>
<td>Sequential Elective</td>
<td>Sequential Elective</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective</td>
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</tbody>
</table>

A student’s elective choice may be a Fine Arts, CTE, or other elective course that meets a student’s individual needs. Students in need of additional academic support may take an elective course that is prescribed in their Individualized Educational Plan (IEP) or English Language Service Delivery Plan (SDP).

All Prince William County high schools operate under a standard seven-period A/B schedule. Some schools modify the school schedule to imbed flexible instructional time into the day.

In 9th and 10th grade students are encouraged to select elective courses that allow them to explore interests which match their intended post-secondary plan. Electives may also include an additional course in a core subject area.

In 11th and 12th grade students are encouraged to focus on elective courses which may lead to work readiness and/or a college major choice. Students pursuing the standard diploma must take sequential electives which broaden a student’s skill set in a specific area.
Sequential Electives

Any two credits, from the subject areas listed below, taken in sequence, that allow students to build upon and increase their knowledge of the academic subject will meet the sequential elective graduation requirement.

<table>
<thead>
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<th>Performing Arts</th>
<th>Colgan High School – CFPA</th>
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<td>Theatre</td>
<td>Creative Writing Exploration</td>
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<tr>
<td>Art History</td>
<td>Theatre I: Introduction to Theatre</td>
<td>Writing Short and Long Fiction-Advanced Genre Focus</td>
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<td>Theatre II: An Exploration of</td>
<td>Writing Creative Nonfiction-Advanced Genre Focus</td>
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<td>Theatre III</td>
<td>Writing For the Screen and Stage-Advanced Genre Focus</td>
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<td>AP Studio Art Drawing</td>
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<td>Technical Theatre/Production</td>
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<td>Math</td>
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<td>Creative Writing I &amp; II</td>
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<td>** - .5 credit courses. Students must be aware that 2 total credits must be earned in a sequence.</td>
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<td>COURSES</td>
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<td>Turf Grass Establishment and Maintenance</td>
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<td>Business and Information Technology</td>
<td></td>
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</tr>
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<td>Accounting</td>
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</tr>
<tr>
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<td>70</td>
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</tr>
<tr>
<td>Business Law</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Business Management</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Computer Information Systems</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Advanced Computer Information Systems</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Design, Multimedia, and Web Technologies</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Advanced Design, Multimedia and Web Technologies</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Digital Applications</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Economics and Personal Finance</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Principles of Business and Marketing</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Programming</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Advanced Programming</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>IT Programming</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>IT Database Design and Management (Oracle)</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>IT Advanced Database Design and Management (Oracle)</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>International Business and Marketing</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>Information Technology (IT) Fundamentals</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>IT Web Technologies</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>IT Advanced Web Technologies</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>Career Connections</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>Family and Consumer Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction to Culinary Arts</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>Culinary Arts I</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>Culinary Arts II</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Early Childhood Education and Services I</td>
<td>75</td>
<td></td>
</tr>
<tr>
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<td>75</td>
<td></td>
</tr>
<tr>
<td>Family Relations</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Introduction to Fashion Careers</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Independent Living</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Individual Development</td>
<td>76</td>
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</tr>
<tr>
<td>Life Planning</td>
<td>76</td>
<td></td>
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<tr>
<td>Nutrition and Wellness</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Child Development and Parenting</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Virginia Teachers for Tomorrow I</td>
<td>77</td>
<td></td>
</tr>
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<td>77</td>
<td></td>
</tr>
<tr>
<td>Health and Medical Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biomedical Innovation (PLTW)</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Human Body Systems (PLTW)</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Medical Coding and Billing I</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>COURSES</td>
<td>PAGE</td>
<td>Grade 9</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>Medical Interventions (PLTW)</td>
<td>77</td>
<td>•</td>
</tr>
<tr>
<td>Principles of Biomedical Science (PLTW)</td>
<td>77</td>
<td>•</td>
</tr>
<tr>
<td>Practical Nursing I (18 weeks)</td>
<td>78</td>
<td>•</td>
</tr>
<tr>
<td>Practical Nursing II (18 weeks)</td>
<td>78</td>
<td>•</td>
</tr>
<tr>
<td>Practical Nursing III – Adult</td>
<td>78</td>
<td>•</td>
</tr>
<tr>
<td>Sports Medicine I</td>
<td>78</td>
<td>•</td>
</tr>
<tr>
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<td>78</td>
<td>•</td>
</tr>
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<td></td>
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</tr>
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<td>78</td>
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</tr>
<tr>
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<td>79</td>
<td>•</td>
</tr>
<tr>
<td>IB Personal and Professional Skills</td>
<td>79</td>
<td>•</td>
</tr>
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<td></td>
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<td>Naval Science I (NJROTC)</td>
<td>80</td>
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<tr>
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<td>80</td>
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<td>81</td>
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<td>82</td>
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<td>82</td>
<td>•</td>
</tr>
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<td>82</td>
<td>•</td>
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<tr>
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<td>83</td>
<td>•</td>
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<td>Fashion Marketing</td>
<td>83</td>
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<td>Advanced Fashion Marketing</td>
<td>83</td>
<td>•</td>
</tr>
<tr>
<td>Opportunities in Hospitality and Tourism</td>
<td>83</td>
<td>•</td>
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<tr>
<td>Hotel Management and Operations</td>
<td>83</td>
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<td>84</td>
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<td>84</td>
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<td>84</td>
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<tr>
<td><strong>TECHNOLOGY AND ENGINEERING EDUCATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architectural Drawing – Design – CAD</td>
<td>84</td>
<td>•</td>
</tr>
<tr>
<td>Construction Technology</td>
<td>84</td>
<td>•</td>
</tr>
<tr>
<td>Engineering Explorations I</td>
<td>85</td>
<td>•</td>
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<td>Engineering Explorations I – Robotics</td>
<td>85</td>
<td>•</td>
</tr>
<tr>
<td>Engineering Analysis and Applications II – Robotics</td>
<td>85</td>
<td>•</td>
</tr>
<tr>
<td>Engineering Analysis and Applications II</td>
<td>85</td>
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<td>85</td>
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<tr>
<td>Digital Visualization</td>
<td>85</td>
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<td>Engineering Drawing and Design – CAD</td>
<td>85</td>
<td>•</td>
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<tr>
<td>Graphic Communications Systems</td>
<td>86</td>
<td>•</td>
</tr>
<tr>
<td>COURSES</td>
<td>PAGE</td>
<td>Grade 9</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------</td>
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</tr>
<tr>
<td>Power and Transportation</td>
<td>86</td>
<td>•</td>
</tr>
<tr>
<td>Production Systems</td>
<td>86</td>
<td>•</td>
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<tr>
<td>Sustainability and Renewable Technologies</td>
<td>86</td>
<td>•</td>
</tr>
<tr>
<td>Technical Drawing</td>
<td>86</td>
<td>•</td>
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<td>Technology Foundations</td>
<td>86</td>
<td>•</td>
</tr>
<tr>
<td>Video and Media Technology</td>
<td>86</td>
<td>•</td>
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<tr>
<td><strong>PROJECT LEAD THE WAY (PLTW)</strong></td>
<td></td>
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</tr>
<tr>
<td>Civil Engineering and Architecture (PLTW)</td>
<td>87</td>
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</tr>
<tr>
<td>Digital Electronics (PLTW)</td>
<td>87</td>
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<td>88</td>
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<td><strong>TRADE AND INDUSTRIAL</strong></td>
<td></td>
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</tr>
<tr>
<td>Automotive Technology I</td>
<td>88</td>
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</tr>
<tr>
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<td>88</td>
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<td>88</td>
<td>•</td>
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<td>Building Trades I</td>
<td>88</td>
<td>•</td>
</tr>
<tr>
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<td>88</td>
<td>•</td>
</tr>
<tr>
<td>Cabinetmaking I</td>
<td>89</td>
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<td>89</td>
<td>•</td>
</tr>
<tr>
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<td>89</td>
<td>•</td>
</tr>
<tr>
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<td>89</td>
<td>•</td>
</tr>
<tr>
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<td>90</td>
<td>•</td>
</tr>
<tr>
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</tr>
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<td>90</td>
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<td>Cybersecurity Systems Technology, Advanced</td>
<td>90</td>
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</tr>
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<td>90</td>
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<td>91</td>
<td>•</td>
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<tr>
<td>Game Design and Development</td>
<td>91</td>
<td>•</td>
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<tr>
<td>Game Design and Development, Advanced</td>
<td>91</td>
<td>•</td>
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<tr>
<td>Heating, Ventilation, Air Conditioning, and Refrigeration I</td>
<td>91</td>
<td>•</td>
</tr>
<tr>
<td>Heating, Ventilation, Air Conditioning, and Refrigeration II</td>
<td>91</td>
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<tr>
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<td>159</td>
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<tr>
<td>Employ III &amp; Employ IV</td>
<td>159</td>
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</tr>
<tr>
<td>Life Skills</td>
<td>159</td>
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</tr>
<tr>
<td>Learning Strategies I</td>
<td>159</td>
<td>•</td>
</tr>
<tr>
<td>Learning Strategies II</td>
<td>160</td>
<td>•</td>
</tr>
<tr>
<td>Personal Living and Finance</td>
<td>160</td>
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</tr>
<tr>
<td>Social Skills I</td>
<td>160</td>
<td>•</td>
</tr>
<tr>
<td>Social Skills II</td>
<td>160</td>
<td>•</td>
</tr>
<tr>
<td>Transitional Work Skills</td>
<td>160</td>
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<td>160</td>
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</tr>
<tr>
<td>Lab Assistant – Science Seminar or Science Teacher’s Aide</td>
<td>161</td>
<td>•</td>
</tr>
<tr>
<td>Office Specialist I – Preparation</td>
<td>161</td>
<td>•</td>
</tr>
<tr>
<td>Office Specialist II – Preparation</td>
<td>161</td>
<td>•</td>
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<tr>
<td>Office Specialist III – Preparation</td>
<td>161</td>
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</tr>
</tbody>
</table>
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