2018-19
High School Course Catalog

Prince William County Public Schools
Prince William County Public Schools

1 – Brentsville
12109 Aden Road
Nokesville, VA 20181

2 – Gar-Field
14000 Smoketown Road
Woodbridge, VA 22192

3 – Osbourn Park
8909 Euclid Avenue
Manassas, VA 20111

4 – Potomac
3401 Panther Pride Drive
Dumfries, VA 22026

5 – Stonewall Jackson
8820 Rixlew Lane
Manassas, VA 20109

6 – Woodbridge
3001 Old Bridge Road
Woodbridge, VA 22192

7 – Hylton
14051 Spriggs Road
Dale City, VA 22193

8 – Forest Park
15721 Forest Park Drive
Woodbridge, VA 22193

9 – Battlefield
15000 Graduation Drive
Haymarket, VA 20169

10 – Freedom
15201 Neabsco Mills Road
Woodbridge, VA 22191

11 – Patriot
10504 Kettle Run Road
Nokesville, VA 20181

12 – Colgan
13833 Dumfries Road
Manassas, VA 20112

99 – Virtual High School
virtualhs.pwcs.edu
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 “2018-19 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 2018-19 academic program meets your interests and needs.

Sincerely,

Steven L. Walts
Superintendent of Schools
Acknowledgements

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Rita E. Goss – Associate Superintendent

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The full content of this guide is available online at pwcs.edu by selecting Students – High School Course Catalog.
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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 ninth 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 ninth 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 2018-19 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 ninth grade for the first time.

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

**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 school choice, 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 courses, the International Baccalaureate, or the Cambridge Program. 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:

PWCS Virtual High School
Prince William County Public Schools is a pioneer in online schooling through our Virtual High School. PWCS Virtual High School 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 PWCS Virtual High School 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. PWCS Virtual High School 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 High Schools 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 High School. 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 students may earn high school credits through the Virtual Virginia program, Virtual Virginia credits may not take students beyond the seven (7) credits per year limit for Prince William County Public Schools’ students. Exceptions may be made for students attending Governor’s School @ Innovation Park and the Pre-Governor’s School Program at Osbourn Park High School. Students working toward the IB Diploma needing specialized course work may request permission to overload their schedule by contacting their IB Diploma Coordinator.

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. 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 https://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 governors.pwcs.edu. Students must have completed Algebra II/Trigonometry and both Biology I and Chemistry I by the end of the tenth 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, extra-curricular, 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 ninth, tenth, eleventh, or twelfth grade courses prior to entering ninth grade, they will receive standard units of credit toward graduation. Such courses will be used in computing the student’s high school GPA. (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 Web site 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:

- If a student drops a year long course during the first marking period a notation will be made on the student transcript indicating either “Withdrawn, Passing” (WP) or “Withdrawn, Failing” (WF).
- If a student drops a semester course during the first four weeks of the course, no notation will be made on the transcript. If a student drops a semester course after the first four weeks a notation will be made on the student transcript indicating either “Withdrawn, Passing” (WP) or “Withdrawn, Failing” (WF).
- If a student moves from one level to another level of the same course, the grades earned in the initial course will transfer to the second course. This rule applies even in those cases where the student is moving from an advanced level course to a lower level course within the same subject (e.g., Pre-AP English 9 to English 9).

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

**Students Entering 9th Grade in 2013-2014, 2014-2015 and 2015-2016**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Advanced Studies Diploma</th>
<th>Standard units of credit</th>
<th>Verified units of credit</th>
<th>Standard units of credit</th>
<th>Verified units of credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English – 9, 10, 11, and 12</strong></td>
<td></td>
<td>4</td>
<td>2 Writing and Reading</td>
<td>4</td>
<td>2 Writing and Reading</td>
</tr>
<tr>
<td><strong>Mathematics</strong> – 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 (Standard Diploma) or at least three different course selections from among Algebra I, Geometry, Algebra II, or other mathematics courses above the level of Algebra II (Advanced Studies Diploma).</td>
<td></td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1#</td>
</tr>
<tr>
<td><strong>Laboratory Science</strong> – 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 (Standard Diploma). The Advanced Studies Diploma requires 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>
<td></td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1#</td>
</tr>
<tr>
<td><strong>History and Social Sciences</strong> – Courses shall include U.S. and Virginia History, U.S. and Virginia Government, and one (Standard Diploma) or both (Advanced Diploma) of the following: World History to 1500; World History from 1500; World Geography may be accepted as one of the required courses for the Advanced Studies diploma for transfer students.</td>
<td></td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1#</td>
</tr>
<tr>
<td><strong>Foreign Language Courses to include Spanish for Native/Heritage Speakers courses.</strong> Courses shall include three years of one language or two years each of two languages.</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Health/Physical Education I, II</strong></td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Economics and Personal Finance</strong></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fine Arts or Career and Technical Education</strong></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Foreign Language, Fine Arts, or Career and Technical Education</strong> – Credits earned shall include one credit in fine or performing arts or career and technical education.</td>
<td></td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Electives</strong> – Courses to satisfy this requirement shall include at least two sequential electives (*Standard Diploma only).</td>
<td></td>
<td>3</td>
<td></td>
<td>4*</td>
<td></td>
</tr>
<tr>
<td><strong>Student Selected Test</strong> – A student may utilize additional tests for earning verified credit in computer science, technology, career and technical education, economics, or other areas as prescribed by the Board.</td>
<td></td>
<td>1</td>
<td></td>
<td>1#</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL CREDITS REQUIRED**

| | 26 | 9 | 22 | 6 |

**ADDITIONAL REQUIREMENTS**

- Virtual Course for Credit or Non-Credit
- Virtual Course for Credit or Non-Credit

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Students who complete Advanced Placement, Cambridge, college-level, or courses required for the International Baccalaureate Diploma shall be deemed to have completed the requirements for graduation under these standards provided they have earned the standard units of credit and verified units of credit in accordance with the requirements of the Standard Diploma or Advanced Studies Diploma, or in the case of a complete International Baccalaureate Program, the number of verified credits required for an Advanced Studies Diploma.

# Students who are seeking the Standard Diploma and who complete a Career and Technical Education Program sequence and pass an examination or occupational competency assessment in a career and technical education field that confers certification or an occupational competency credential from a recognized industry or trade or professional association or acquire a professional license in a career and technical education field from the Commonwealth of Virginia may substitute the certification, competency credential, or license for (i) the student selected verified credit and (ii) either science or history and social science verified credit when the certification, license, or credential confers more than one verified credit. The examination or occupational competency assessment must be approved by the Board of Education as an educational test to verify student achievement. **Students who are seeking the Standard Diploma must take and pass a career and technical education credentialing exam that has been approved by the Board of Education. This may include an industry certification, state licensure examination, National Occupational Competency Assessment, or Virginia Workplace Readiness Skills Assessment.
# Graduation Requirements

**Students Entering 9th Grade in 2016-17 and 2017-2018**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Advanced Studies Diploma</th>
<th>Standard Diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard units of credit</td>
<td>Verified units of credit</td>
</tr>
<tr>
<td><strong>English</strong> – 9, 10, 11, and 12</td>
<td>4</td>
<td>2 Writing and Reading</td>
</tr>
<tr>
<td><strong>Mathematics</strong> – 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 (Standard Diploma) or at least three different course selections from among Algebra I, Geometry, Algebra II, or other mathematics courses above the level of Algebra II (Advanced Studies Diploma).</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>Laboratory Science</strong> – 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 (Standard Diploma). The Advanced Studies Diploma requires 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>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>History and Social Sciences</strong> – Courses shall include U.S. and Virginia History, U.S. and Virginia Government, and one (Standard Diploma) or both (Advanced Diploma) of the following: World History to 1500; World History from 1500; World Geography may be accepted as one of the required courses for the Advanced Studies diploma for transfer students.</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>World Language Courses</strong> – Courses shall include three years of one language or two years each of two languages.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Health/Physical Education I, II</strong></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Economics and Personal Finance</strong></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Fine Arts or Career and Technical Education</strong></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>World Language or Fine Arts, or Career and Technical Education</strong> – Credits earned shall include one credit in either world language or fine and performing arts or career and technical education.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Electives</strong> – Courses to satisfy this requirement shall include at least two sequential electives (&quot;Standard Diploma only).</td>
<td>3</td>
<td>4*</td>
</tr>
<tr>
<td><strong>Student Selected Test</strong> – A student may utilize additional tests for earning verified credit in computer science, technology, career and technical education, economics, or other areas as prescribed by the Board.</td>
<td>1</td>
<td>1#</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS REQUIRED</strong></td>
<td>26</td>
<td>9</td>
</tr>
</tbody>
</table>

**ADDITIONAL REQUIREMENTS**

- Virtual Course for Credit or Non-Credit and CPR/First Aid and AED Training
- Virtual Course for Credit or Non-Credit and CPR/First Aid and AED Training and Career and Technical Education credential

---

# Students who are seeking the Standard Diploma and who complete a Career and Technical Education Program sequence and pass an examination or occupational competency assessment in a career and technical education field that confers certification or an occupational competency credential from a recognized industry or trade or professional association or acquire a professional license in a career and technical education field from the Commonwealth of Virginia may substitute the certification, competency credential, or license for (i) the student selected verified credit and (ii) either science or history and social science verified credit when the certification, license, or credential confers more than one verified credit. The examination or occupational competency assessment must be approved by the Board of Education as an educational test to verify student achievement.

**Students who are seeking the Standard Diploma must take and pass a career and technical education credentialing exam that has been approved by the Board of Education. This may include an industry certification, state licensure examination, National Occupational Competency Assessment, or Virginia Workplace Readiness Skills Assessment.**

---

# Students who are seeking the Standard Diploma and who complete a Career and Technical Education Program sequence and pass an examination or occupational competency assessment in a career and technical education field that confers certification or an occupational competency credential from a recognized industry or trade or professional association or acquire a professional license in a career and technical education field from the Commonwealth of Virginia may substitute the certification, competency credential, or license for (i) the student selected verified credit and (ii) either science or history and social science verified credit when the certification, license, or credential confers more than one verified credit. The examination or occupational competency assessment must be approved by the Board of Education as an educational test to verify student achievement.

**Students who are seeking the Standard Diploma must take and pass a career and technical education credentialing exam that has been approved by the Board of Education. This may include an industry certification, state licensure examination, National Occupational Competency Assessment, or Virginia Workplace Readiness Skills Assessment.**
## Graduation Requirements

**Students Entering 9th Grade in 2018-19 and Beyond**

*(to be approved by the Virginia General Assembly January, 2018)*

### Required Courses

<table>
<thead>
<tr>
<th></th>
<th>Advanced Studies Diploma</th>
<th>Standard units of credit</th>
<th>Verified units of credit</th>
<th>Standard units of credit</th>
<th>Verified units of credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English – 9, 10, 11, and 12</strong></td>
<td></td>
<td>4</td>
<td>2</td>
<td>Writing and Reading</td>
<td></td>
</tr>
<tr>
<td><strong>Mathematics – 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 (Standard Diploma) or at least three different course selections from among Algebra I, Geometry, Algebra II, or other mathematics courses above the level of Algebra II (Advanced Studies Diploma).</strong></td>
<td></td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Laboratory Science – 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 (Standard Diploma). The Advanced Studies Diploma requires 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.</strong></td>
<td></td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>History and Social Sciences – Courses shall include U.S. and Virginia History, U.S. and Virginia Government, and one (Standard Diploma) or both (Advanced Diploma) of the following: World History to 1500; World History from 1500; World Geography may be accepted as one of the required courses for the Advanced Studies diploma for transfer students.</strong></td>
<td></td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>World Language Courses – Courses shall include three years of one language or two years each of two languages.</strong></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Health/Physical Education I, II</strong></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Economics and Personal Finance</strong></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fine Arts or Career and Technical Education</strong></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>World Language or Fine Arts, or Career and Technical Education – Credits earned shall include one credit in either world language or fine and performing arts or career and technical education.</strong></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Electives – Courses to satisfy this requirement shall include at least two sequential electives (<em>Standard Diploma only).</em></strong></td>
<td></td>
<td>3</td>
<td>4*</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL CREDITS REQUIRED</strong></td>
<td></td>
<td>26</td>
<td>5</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td><strong>ADDITIONAL REQUIREMENTS</strong></td>
<td></td>
<td></td>
<td>Virtual Course for Credit or Non-Credit Career and Technical Education Credential OR One Advanced Course CPR/First Aid and AED Training</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Students who complete Advanced Placement, Cambridge, college-level, or courses required for the International Baccalaureate Diploma shall be deemed to have completed the requirements for graduation under these standards provided they have earned the standard units of credit and verified units of credit in accordance with the requirements of the Standard Diploma or Advanced Studies Diploma, or in the case of a complete International Baccalaureate Program, the number of verified credits required for an Advanced Studies Diploma.

**Students must take and pass a career and technical education credentialing exam that has been approved by the Board of Education OR take one advanced course during their high school career. An advanced course can be defined as any weighted course or any course taken in preparation for weighted courses (eg. Pre-AP, Pre-IB, Pre-IGSCE). This may include an industry certification, state licensure examination, National Occupational Competency Assessment, or Virginia Workplace Readiness Skills Assessment.**
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 ninth grade for the first time in 2013-14 and beyond are eligible to pursue an Advanced Studies Diploma, Standard Diploma, or Special 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.

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 IEP’s 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))

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

Students who transfer to a Prince William County 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 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 Requirements for students entering the 9th grade for the first time prior to the 2018-2019 school year

**Transfer Students from Non-Virginia Public School**

<table>
<thead>
<tr>
<th>Standard Diploma</th>
<th>Advanced Studies Diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student enters during 9th grade or at the beginning of 10th grade:</strong></td>
<td><strong>Student enters during 9th grade or at the beginning of 10th grade:</strong></td>
</tr>
<tr>
<td>Student must obtain all six (6) required verified units of credit</td>
<td>Student must obtain all nine (9) required verified units of credit</td>
</tr>
<tr>
<td><strong>Student enters during 10th grade or at the beginning of 11th grade:</strong></td>
<td><strong>Student enters during 10th grade or at the beginning of 11th grade:</strong></td>
</tr>
<tr>
<td>Student must obtain four (4) verified units</td>
<td>Student must obtain six (6) verified units</td>
</tr>
<tr>
<td>One (1) in English</td>
<td>Two (2) in English</td>
</tr>
<tr>
<td>One (1) in Math</td>
<td>One (1) in Math</td>
</tr>
<tr>
<td>One (1) in History/Social Science</td>
<td>One (1) in History/Social Science</td>
</tr>
<tr>
<td>One (1) in Science</td>
<td>One (1) in Science</td>
</tr>
<tr>
<td><strong>Student enters during 11th grade or at the beginning of 12th grade:</strong></td>
<td><strong>Student enters during 11th grade or at the beginning of 12th grade:</strong></td>
</tr>
<tr>
<td>Student must obtain two (2) verified units</td>
<td>Student must obtain four (4) verified units</td>
</tr>
<tr>
<td>One (1) in English</td>
<td>One (1) in English</td>
</tr>
<tr>
<td>One (1) student selected</td>
<td>Three (3) student selected</td>
</tr>
<tr>
<td><strong>Student enters during 12th grade:</strong></td>
<td><strong>Student enters during 12th grade:</strong></td>
</tr>
<tr>
<td>Student may apply for a waiver of verified units with the State Board of Education</td>
<td>Student may apply for a waiver of verified units with the State Board of Education</td>
</tr>
</tbody>
</table>

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 who’s 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 2019-2020 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 Seals

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), International Baccalaureate (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 Seal of Advanced Mathematics and Technology is awarded 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.
- The Board of Education’s Seal for Excellence in Civics Education will be 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 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.
**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 ninth grade year.

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade 9</th>
<th>Grade 10</th>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
</table>
| **English**             | English 9  
☑ Completed                      | English 10  
☑ Completed                      | English 11  
☑ Completed                      | English 12  
☑ Completed                      |
| **Math**                | Algebra I or Higher  
☑ Completed                      | Geometry or Higher  
☑ Completed                      | Algebra Functions and Data Analysis, Algebra II, or higher  
☑ Completed                      | Algebra II or higher  
☑ Completed                      |
| **Science**             | Earth Science I or Biology I  
☑ Completed                      | Biology I or Chemistry I  
☑ Completed                      | Chemistry I or Physics I  
☑ Completed                      | Higher Level Science (AP, IB etc.)  
☑ Completed                      |
| **Social Studies**      | World History I  
☑ Completed                      | World History II  
☑ Completed                      | U.S. and Virginia History  
☑ Completed                      | U.S. and Virginia Government  
☑ Completed                      |
| **Foreign Language**    | Level 1 or higher  
☑ Completed                      | Level 2 or higher  
☑ Completed                      | Level 3 or higher  
☑ Completed                      | Higher Level Language (AP, IB etc.)  
☑ Completed                      |
| **Health and Physical Education** | Health and Physical Education I  
☑ Completed                      | Health and Physical Education II  
☑ Completed                      |                                                |                                                |
| **Electives**           | Fine Arts or Career and Technical Education (1 Credit)  
☑ Completed (list below)          |                                                |                                                |                                                |
|                        | Sequential Elective (2 Credits – Standard Diploma Only)  
☑ Completed (list below)          |                                                |                                                |                                                |
|                        | Other Electives (2 or more credits depending on diploma type)  
☑ Completed (list below)          |                                                |                                                |                                                |

**Additional Graduation Requirements**

- Economics and Personal Finance*  
☑ Completed
- CTE Credentialing Exam or One Advanced Course#  
☑ Completed
- Virtual Course^  
☑ Completed
- CPR/First/AED+ Training  
☑ Completed

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

* Required for those students entering the 9th grade for the first time during the 2011-12 school year or later.

^ Required for those students entering the 9th grade for the first time during the 2013-14, 2014-2015, 2015-2016, 2016-2-17 and 2017-2018 school years who are pursuing the Standard Diploma. Students who take Economics and Personal Finance through PWCS may meet both the Virtual Course requirement and CTE Exam requirement if the student passes an industry certification assessment.

# All students entering the 9th grade for the first time during the 2018-2019 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 2013-2014, 2014-2015, 2015-2016 or 2017-2018 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 2017 from Prince William County Public Schools

<table>
<thead>
<tr>
<th>Type</th>
<th>Examples</th>
<th>Average GPA</th>
<th>Average SAT (combined Verbal and Math)</th>
<th>Average ACT (composite score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elite – National</td>
<td>University of Notre Dame, Princeton, Yale</td>
<td>4.8</td>
<td>1455</td>
<td>33</td>
</tr>
<tr>
<td>Exclusive – State</td>
<td>University of Virginia, College of William &amp; Mary, University of Richmond</td>
<td>4.3</td>
<td>1250</td>
<td>29</td>
</tr>
<tr>
<td>Highly Selective – State</td>
<td>George Mason, Virginia Tech, James Madison University</td>
<td>3.9</td>
<td>1160</td>
<td>26</td>
</tr>
<tr>
<td>Moderately Selective – State</td>
<td>Virginia Commonwealth University, University of Mary Washington, Christopher Newport University</td>
<td>3.7</td>
<td>1100</td>
<td>23</td>
</tr>
<tr>
<td>Selective – State</td>
<td>Old Dominion University, Longwood University, Shenandoah University, Radford University</td>
<td>3.29</td>
<td>1020</td>
<td>21</td>
</tr>
</tbody>
</table>

## What are the Odds?

See below for information from the Class of 2017 and their acceptance rate at colleges to which over 100 students applied.

<table>
<thead>
<tr>
<th>College</th>
<th>Acceptance Rate</th>
<th>University/State</th>
<th>GPA</th>
<th>SAT</th>
<th>ACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridgewater College</td>
<td>75%</td>
<td>University of Mary Washington</td>
<td>59%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longwood University</td>
<td>66%</td>
<td>Virginia Commonwealth</td>
<td>58%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radford University</td>
<td>65%</td>
<td>University</td>
<td>58%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lynchburg College</td>
<td>62%</td>
<td>Hampton University</td>
<td>56%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christopher Newport University</td>
<td>61%</td>
<td>George Mason University</td>
<td>56%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old Dominion University</td>
<td>60%</td>
<td>Virginia State University</td>
<td>55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Virginia University</td>
<td>59%</td>
<td>James Madison University</td>
<td>55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Virginia's College at Wise</td>
<td>53%</td>
<td>Norfolk State University</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marymount University</td>
<td>52%</td>
<td>Virginia Tech</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Howard University</td>
<td>40%</td>
<td>College of William and Mary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Virginia</td>
<td>36%</td>
<td>University of Virginia</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Virginia Public Four Year Colleges and Universities

<table>
<thead>
<tr>
<th>College</th>
<th>University/State</th>
<th>GPA</th>
<th>SAT</th>
<th>ACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christopher Newport University</td>
<td>Norfolk State University</td>
<td>53%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College of William and Mary</td>
<td>Old Dominion University</td>
<td>52%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>George Mason University</td>
<td>Radford University</td>
<td>49%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>James Madison University</td>
<td>University of Mary Washington</td>
<td>40%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longwood University</td>
<td>University of Virginia</td>
<td>36%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Virginia Public Community Colleges

<table>
<thead>
<tr>
<th>College</th>
<th>University/State</th>
<th>GPA</th>
<th>SAT</th>
<th>ACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia Public Community Colleges</td>
<td>John Tyler Community College</td>
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<tr>
<td>Blue Ridge Community College</td>
<td>Lord Fairfax Community College</td>
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<tr>
<td>Central Virginia Community College</td>
<td>Mountain Empire Community College</td>
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<tr>
<td>Dabney S. Lancaster Comm. College</td>
<td>New River Community College</td>
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<tr>
<td>Danville Community College</td>
<td>Northern Virginia Community College</td>
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<tr>
<td>Eastern Shore Community College</td>
<td>Patrick Henry Community College</td>
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<td>Germanna Community College</td>
<td>Paul D Camp Community College</td>
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<tr>
<td>J Sergeant Reynolds Comm. College</td>
<td>Piedmont Virginia Community College</td>
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<tr>
<td>Rappahannock Community College</td>
<td>Southside Virginia Community College</td>
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<tr>
<td>Southwest Virginia Comm. College</td>
<td>Thomas Nelson Community College</td>
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<tr>
<td>Tidewater Community College</td>
<td>Virginia Highlands Community College</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Virginia Western Community College</td>
<td>Virginia Highlands Community College</td>
<td></td>
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</tr>
</tbody>
</table>
Historically Black Colleges & Universities

Alabama
- Alabama A&M University
- Alabama State University
- S.D. Biustoe State Community College
- Concordia College
- Miles College
- Oakwood College
- Stillman College
- Talladega College
- Tuskegee University

Arkansas
- Arkansas Baptist College
- Philander Smith College
- University of Arkansas, Pine Bluff

Delaware
- Delaware State University

District of Columbia
- Howard University
- University of the District of Columbia

Florida
- Bethune-Cookman University
- Edward Waters College
- Florida A&M University
- Florida Memorial University

Georgia
- Albany State University
- Clark-Atlanta University
- Fort Valley State University
- Morehouse College
- Morris Brown College
- Paine College
- Savannah State University
- Spelman College

Kentucky
- Kentucky State University

Louisiana
- Dillard University
- Grambling State University
- Southern University and A&M College
- Xavier University of Louisiana

Maryland
- Bowie State University
- Coppin State University
- Morgan State University
- University of Maryland, Eastern Shore

Mississippi
- Alcorn State University
- Coahoma Community College
- Jackson State University
- Mississippi Valley State University
- Rust College
- Tougaloo College

Missouri
- Harris-Stowe State University
- Lincoln University of Missouri

North Carolina
- Barber-Scots College
- Bennett College
- Elizabeth City State University
- Fayetteville State University
- Johnson C. Smith University
- Livingstone College
- North Carolina A&T State University
- North Carolina Central University
- St. Augustine’s College
- Shaw University
- Winston-Salem State University

Ohio
- Central State University
- Wilberforce University

Oklahoma
- Langston University

Pennsylvania
- Cheyney University of Pennsylvania
- Lincoln University

South Carolina
- Allen University
- Benedict College
- Claflin University
- Clinton Junior College
- Denmark Technical College
- Morris College
- South Carolina State College
- Voorhees College

Tennessee
- Fisk University
- Knoxville College
- Lane College

Texas
- Houston-Tillotson University
- Jarvis Christian College
- Paul Quinn College
- Prairie View A&M University
- Texas College
- Texas Southern University
- Wiley College

Virginia
- Hampton University
- Norfolk State University
- St. Paul’s College
- Virginia State University
- Virginia Union University

West Virginia
- Bluefield State College
- West Virginia State University

Colleges with large Hispanic enrollments (50% or more)

California
- Bakersfield College
- California State University, Los Angeles
- Cerritos College
- Chaffey College
- College of the Sequoias
- East Los Angeles College
- Hartnell College
- Imperial Valley College
- Los Angeles Trade-Technical College
- Reedley College
- Rio Hondo College
- San Bernedino Valley College
- Southwestern College

Florida
- Florida International University
- Miami-Dade College

Illinois
- City Colleges of Chicago – Wilbur Wright College

New Mexico
- New Mexico State University – Dona Ana

New York
- CUNY – Bronx Community College

Texas
- El Paso Community College
- Laredo Community College
- Palo Alto College
- San Antonio College
- Southwest Texas College
- Texas A&M University
- University of Texas at Brownsville
- University of Texas at El Paso
- University of Texas at San Antonio
- University of Texas-Pan-American

Virginia Private Four Year Colleges & Universities

Appalachian School of Law
- Averett University – Danville
- Bluefield College
- Bridgewater College
- Centura College – Alexandria
- Centura College – Chesapeake
- Centura College – Newport News
- Centura College – Norfolk
- Centura College – Richmond
- Centura College – Richmond West
- Centura College – Virginia Beach
- Christendom College
- Eastern Mennonite University
- ECPI University
- Emory and Henry College
- Ferrum College
- George Washington University
- Hampden-Sydney College
- Hampton University
- Hampton University – Virginia Beach
- Hampton University – Roanoke Higher Education Center
- Hollins University

Institute for the Psychological Sciences
- Jefferson College of Health Sciences
- Liberty University
- Lynchburg College
- Mary Baldwin College – Staunton
- Marymount University
- National College – Bluefield
- Randolph-Macon College
- Randolph College
- Regent University
- Roanoke College
- Shenandoah University – Winchester
- Skyline College
- Stratford University
- Sweet Briar College
- Union Theological Seminary & Presbyterian School of Christian Education
- University of Management and Technology
- University of Richmond
- Virginia Intermont College
- Virginia Union University
- Virginia Wesleyan College
- Washington and Lee University
### 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 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;
- Most competitive college requirements include:
  - English (4 units)
  - Social Studies (4 units)
  - Science (3-4 units)
  - Foreign Language (3-4 units)
  - Mathematics (3-4 units, at least up to Algebra II)
- 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 Program; and
- Update and modify your personal goals as needed.

**Action**
- Continue to 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.

### 11th Grade

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

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

**Action**
- Continue to take challenging courses 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](http://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; and
- Meet with your school counselor to update your Academic and Career Plan and begin to finalize your post-secondary plan.
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 Program; and
• Finalize your personal goals.

Action
- **June-August:**
  - Prepare for the SAT/ACT. Remember, preparation is free at [www.khanacademy.org](http://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!
How Can My High School Counselor Help Me?

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, foreign 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.

Locally Awarded Verified Unit of Credit
A locally awarded verified unit of credit is awarded by a local school board in the science or history/social science areas of study. Locally awarded verified units of credit are available to students who are pursuing the Standard Diploma. Specific criteria have been developed for the awarding of these credits. Students may not earn more than four locally awarded verified units of credit. With the exception of those students with an IEP or 504 Plan who are eligible for credit accommodations. For students who enter the 9th grade in 2018-2019 and beyond, pursuing the Standard Diploma, only one locally awarded verified unit of credit may be earned toward the five verified credits required to graduate. Those students with an IEP or 504 plan who are eligible for credit accommodations may earn all verified units of credit through the local award process.

Weighted Credit
Weighted credit refers to grade point values assigned to Advanced Placement, International Baccalaureate, 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 plan to graduate with a Standard Diploma or Modified Standard 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. One credit used to satisfy the fine arts or career and technical education requirement for the Standard or Modified Standard Diploma may be used to partially satisfy this 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 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 ninth grade during the 2013-2014, 2014-2015, 2015-2016, 2016-2017 or 2017-2018 school year will be required to pass a state approved Career and Technical Education Credentialing exam. All students who enter the ninth grade in 2018-2019 and beyond 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, International Baccalaureate Diploma, and Cambridge AICE Courses**

Certain courses have been designated as Advanced Placement (AP), International Baccalaureate (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 ninth 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.

**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 1-11 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 Name</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Brentsville</td>
<td>4 – Potomac</td>
<td>7 – Hylton</td>
</tr>
<tr>
<td>2 – Gar-Field</td>
<td>5 – Stonewall</td>
<td>8 – Forest Park</td>
</tr>
<tr>
<td>3 – Osbourn Park</td>
<td>6 – Woodbridge</td>
<td>9 – Battlefield</td>
</tr>
<tr>
<td></td>
<td>10 – Freedom</td>
<td>99 – Virtual @ PWCS</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 tenth 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?
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
- PSAT – 390 or higher on both the Reading and Writing section, 500 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, 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 dual enrollment courses on any of the Northern Virginia Community College campuses or in certain Prince William County High Schools. The options for dual enrollment for PWCS students for the 2016-17 school year based on established agreements between the community college and PWCS, are outlined below:

<table>
<thead>
<tr>
<th>Automotive I, II, and III</th>
<th>Entrepreneurship</th>
<th>IT Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology II: Survey of Advanced Topics in Biology</td>
<td>IT Database</td>
<td>IT Web Technologies</td>
</tr>
<tr>
<td>Computer Networking I, II, III, and IV Hardware Operations (CISCO)</td>
<td>Design and Management (Oracle)</td>
<td>IT Web Technologies Advanced</td>
</tr>
<tr>
<td>Computer Systems Technology I</td>
<td>HVAC I and II</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>Criminal Justice</td>
<td>IB Business and Management (SL)</td>
<td>Multivariable Calculus</td>
</tr>
<tr>
<td>English 12</td>
<td>IB Biology (HL)</td>
<td>US/VA Government</td>
</tr>
<tr>
<td>Early Childhood Education Services I and II</td>
<td>Intro to Speech Communications</td>
<td>US/VA History</td>
</tr>
<tr>
<td></td>
<td>IT Database Design and Management Advanced (Oracle)</td>
<td>Welding I, II, and III</td>
</tr>
</tbody>
</table>

For Northern Virginia Community College courses taken in a Prince William County 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.
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 ninth 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. 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.

- 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 in NCAA 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, have a minimum sum ACT or SAT score that matches the 16 core course GPA, and successfully complete the 16 core course curriculum (see list below). Middle school credit bearing courses can be used to satisfy core-course requirements.

- **Division I Core Academic Requirements – for students enrolling in a college or university on or after August 1, 2016**
  - 4 years English;
  - 3 years mathematics (at least Algebra I level or higher);
  - 2 years social science;
  - 2 years natural or physical science (one lab if offered at any high school attended);
  - 1 year additional English, mathematics, or natural/physical science;
  - 4 years additional from areas above or foreign 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) Nonqualifer = no athletics aid, practice or competition; and
  - 10 core courses required before beginning of the 7th semester.

- **Division II Core Academic Requirements – for students enrolling in a college or university on or after August 1, 2018**
  - Complete 16 core courses;
  - 3 years English;
  - 2 years mathematics (Algebra I or higher);
  - 2 years social science;
  - 2 years natural or physical science (including one lab course);
  - 3 years additional courses in English, mathematics, or natural or physical science;
  - Grade point average of 2.200 in core courses; and
  - 4 additional years of English, Math, Natural or Physical Science, Foreign Language compare to religion or philosophy.

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. More detailed information is available on the NCAA Web site at [www.ncaa.org/](http://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 ninth grade, and Functions/Trigonometry (or a higher Mathematics course) by the end of tenth grade.
- Students will study two Science courses in tenth grade to allow for the completion of SOL Physics prior to eleventh 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 Prince William County School’s Virtual High School 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 ninth and tenth 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 nine and ten (HPE I and HPE II through PWCS Virtual High School during the spring semester). Students will be encouraged to fulfill the Economics and Personal Finance (or AP Economics) graduation requirement in tenth 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 eleventh and twelfth 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.
### Course Work

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

<table>
<thead>
<tr>
<th>COURSES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-AP English 9</td>
<td>Physics I</td>
</tr>
<tr>
<td>Pre-AP English 10</td>
<td>Geometry</td>
</tr>
<tr>
<td>Pre-AP World History I</td>
<td>Algebra II</td>
</tr>
<tr>
<td>World History II</td>
<td>Functions/Trigonometry</td>
</tr>
<tr>
<td>Pre-AP Biology</td>
<td>Functions/Analytic Geometry</td>
</tr>
<tr>
<td>Pre-AP Chemistry</td>
<td></td>
</tr>
</tbody>
</table>

The following courses are designed as weighted PGS@OP courses:

<table>
<thead>
<tr>
<th>COURSES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AP World History</td>
<td></td>
</tr>
<tr>
<td>AP Economics</td>
<td></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>Science</th>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology I</td>
<td>Biology II</td>
<td></td>
</tr>
<tr>
<td>Chemistry I</td>
<td>Chemistry II</td>
<td></td>
</tr>
<tr>
<td>Or Physics I</td>
<td>Or Physics II</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research</th>
<th>Hands-on research in science area of interest</th>
</tr>
</thead>
</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>Science Strand</strong></td>
<td></td>
</tr>
<tr>
<td>Chem 211 (4 Credits)</td>
<td>Chem 104 (4 Credits)</td>
</tr>
<tr>
<td>Biol 103 (4 Credits)</td>
<td>Biol 124 (4 Credits)</td>
</tr>
<tr>
<td>Phys 243 (4 Credits)</td>
<td>Phys 160/161 (4 Credits)</td>
</tr>
<tr>
<td>Chem 212 (4 Credits)</td>
<td>Chem 155 (4 Credits)</td>
</tr>
<tr>
<td>Biol 104 (4 Credits)</td>
<td>Biol 246 (3 Credits)</td>
</tr>
<tr>
<td>Phys 245 (4 Credits)</td>
<td>Phys 260/261 (4 Credits)</td>
</tr>
</tbody>
</table>

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><strong>Math Strand</strong></td>
<td>Math 215 (3 Credits)</td>
</tr>
<tr>
<td>Math 115 (4 Credits)</td>
<td></td>
</tr>
<tr>
<td><strong>Science Strand</strong></td>
<td></td>
</tr>
<tr>
<td>Chem 211 (4 Credits)</td>
<td>Chem 104 (4 Credits)</td>
</tr>
<tr>
<td>Biol 103 (4 Credits)</td>
<td>Biol 124 (4 Credits)</td>
</tr>
<tr>
<td>Phys 243 (4 Credits)</td>
<td>Phys 160 (4 Credits)</td>
</tr>
<tr>
<td><strong>Spring Semester</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Math Strand</strong></td>
<td>Math 203 (3 Credits)</td>
</tr>
<tr>
<td>Math 116 (4 Credits)</td>
<td></td>
</tr>
<tr>
<td><strong>Science Strand</strong></td>
<td></td>
</tr>
<tr>
<td>Chem 212 (4 Credits)</td>
<td>Chem 155 (4 Credits)</td>
</tr>
<tr>
<td>Biol 104 (4 Credits)</td>
<td>Biol 246 (4 Credits)</td>
</tr>
<tr>
<td>Phys 245 (4 Credits)</td>
<td>Phys 260 (4 Credits)</td>
</tr>
</tbody>
</table>
The Advanced Placement Scholars program at Patriot and Woodbridge High Schools will assist and support those students seeking a rigorous advanced studies curriculum throughout their high school career. Services provided are as follows (may vary by school):
- Challenging course of study to include Pre-AP and Advanced Placement courses (AP)
- A supportive framework open to all students willing to tackle advanced courses
- College exploration sessions at each grade level
- School sponsored college tours in grades 11 and 12
- Instructional support through school counseling department
- Peer mentoring and peer tutoring
- Faculty led and peer led study sessions throughout the school year
- Practice AP exams
- SAT and ACT test preparation opportunities
- Administrative monitoring and support
- Multiple levels of recognition upon exiting the program

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 8 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 I or Advanced Earth Science
- Algebra I or Pre-AP Geometry
- Level I, II, or III of Foreign 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 Foreign 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*
- Functions Analytic Geometry or Functions/Trigonometry
- Level IV Pre-AP 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 Pre-AP 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
**Course Work** (Please note that course offerings may vary between schools and are based upon enrollment minimums.)

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>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-AP English 9</td>
</tr>
<tr>
<td>Pre-AP English 10</td>
</tr>
<tr>
<td>AP Language and Composition</td>
</tr>
<tr>
<td>AP Literature and Composition</td>
</tr>
<tr>
<td>Pre-AP World History I</td>
</tr>
<tr>
<td>AP World History</td>
</tr>
<tr>
<td>AP US History</td>
</tr>
<tr>
<td>AP US Government</td>
</tr>
<tr>
<td>AP European History</td>
</tr>
<tr>
<td>AP Human Geography</td>
</tr>
<tr>
<td>AP Psychology</td>
</tr>
<tr>
<td>AP Economics</td>
</tr>
<tr>
<td>Pre-AP Spanish III</td>
</tr>
<tr>
<td>Pre-AP French III</td>
</tr>
<tr>
<td>Pre-AP Spanish IV</td>
</tr>
<tr>
<td>Pre-AP French IV</td>
</tr>
<tr>
<td>AP Spanish Language</td>
</tr>
<tr>
<td>AP French Language</td>
</tr>
<tr>
<td>AP Spanish Literature</td>
</tr>
<tr>
<td>Pre-AP Geometry</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Center for Biotechnology and Engineering

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, and 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

<table>
<thead>
<tr>
<th>9th Grade</th>
<th>9th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Pre-AP Biology</td>
<td>(1) Pre-AP Biology</td>
</tr>
<tr>
<td>(1) Pre-AP English 9</td>
<td>(1) Pre-AP Chemistry</td>
</tr>
<tr>
<td>(1) Pre-AP World History I</td>
<td>(1) Pre-AP English 9</td>
</tr>
<tr>
<td>(1) Health and PE 9</td>
<td>(1) Pre-AP World History I</td>
</tr>
<tr>
<td>(1) Mathematics</td>
<td>(1) Health and PE 9</td>
</tr>
<tr>
<td>(1) World Language</td>
<td>(1) Mathematics</td>
</tr>
<tr>
<td>(1) Scientific Illustration</td>
<td>(1) World Language</td>
</tr>
</tbody>
</table>

### 10th Grade

<table>
<thead>
<tr>
<th>10th Grade</th>
<th>10th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Pre-AP Chemistry</td>
<td>(1) Pre-AP Chemistry</td>
</tr>
<tr>
<td>(1) Pre-AP English 10</td>
<td>(1) Pre-AP English 10</td>
</tr>
<tr>
<td>(1) AP World History</td>
<td>(1) AP European History</td>
</tr>
<tr>
<td>(1) Health and PE 10</td>
<td>(1) Health &amp; PE II</td>
</tr>
<tr>
<td>(1) Mathematics</td>
<td>(1) Mathematics</td>
</tr>
<tr>
<td>(1) World Language</td>
<td>(1) World Language</td>
</tr>
<tr>
<td>(1) Student Elective</td>
<td>(1) Student Elective</td>
</tr>
</tbody>
</table>

### 11th Grade

<table>
<thead>
<tr>
<th>11th Grade</th>
<th>11th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biotechnology Strand</strong></td>
<td><strong>Engineering Strand</strong></td>
</tr>
<tr>
<td>(1) AP Biology or AP Environmental Science</td>
<td>(1) AP Physics</td>
</tr>
<tr>
<td>(1) AP Language and Composition or English 11</td>
<td>(1) AP Biology or AP Chemistry</td>
</tr>
<tr>
<td>(1) Mathematics</td>
<td>(1) PLTW Principles of Engineering or PLTW Engineering Design</td>
</tr>
<tr>
<td>(1) AP US/VA History or US/VA History</td>
<td>(1) AP US/VA History of US/VA History</td>
</tr>
<tr>
<td>(1) Physics I</td>
<td>(1) AP Language and Composition or English 11</td>
</tr>
<tr>
<td>(1) PLTW Engineering or PLTW Biomedical Science Course</td>
<td>(1) Functions Trigonometry or Functions Analytic Geometry</td>
</tr>
<tr>
<td>(1) Student Elective</td>
<td>(1) Student Elective</td>
</tr>
</tbody>
</table>

### 12th Grade

<table>
<thead>
<tr>
<th>12th Grade</th>
<th>12th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biotechnology Strand</strong></td>
<td><strong>Engineering Strand</strong></td>
</tr>
<tr>
<td>(1) AP Physics or AP Chemistry</td>
<td>(1) AP Computer Science or AP Statistics</td>
</tr>
<tr>
<td>(1) AP Literature or English 12</td>
<td>(1) AP Calculus AB or AP Calculus BC</td>
</tr>
<tr>
<td>(1) AP US/VA Government or US/VA Government</td>
<td>(1) PLTW Principles of Engineering or PLTW Digital Electronics</td>
</tr>
<tr>
<td>(1) Mathematics</td>
<td>(1) AP US/VA Government or US/VA Government or English 12</td>
</tr>
<tr>
<td>(1) PLTW Engineering or PLTW Biomedical Course</td>
<td>(1) Student Elective</td>
</tr>
<tr>
<td>(1) Student Elective</td>
<td>(1) Student Elective</td>
</tr>
<tr>
<td>(1) Student Elective</td>
<td>(1) Student Elective</td>
</tr>
</tbody>
</table>
The following courses are designated as Center for Biotechnology and Engineering courses:

<table>
<thead>
<tr>
<th>Center for Biotechnology and Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-AP Biology</td>
</tr>
<tr>
<td>Pre-AP Chemistry</td>
</tr>
<tr>
<td>Physics I</td>
</tr>
<tr>
<td>Earth Science</td>
</tr>
<tr>
<td>Earth Science II: Physical Geology</td>
</tr>
<tr>
<td>Earth Science II: Oceanography</td>
</tr>
<tr>
<td>Biology II: Survey (Forensics and Microbiology)</td>
</tr>
<tr>
<td>Biology II: Introduction to DNA Science and Biotechnology</td>
</tr>
<tr>
<td>Scientific Illustration</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

The following courses are designated as weighted Biotechnology & Engineering Center courses:

- Advanced Placement Physics 1 & 2
- Advanced Placement Physics C: Mechanics
- Advanced Placement Environmental Science
- Advanced Placement Biology
- Advanced Placement Chemistry
- Advanced Placement Human Geography
- Advanced Placement Seminar
- Advanced Placement Research
- Advanced Placement Psychology
- Advanced Placement Computer Science
- Advanced Placement Statistics
- Advanced Placement Calculus AB or BC
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 6 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 1 AP Calculus Course (AB or BC)
- At least 1 Physics Course (either AP or Regular)
- At least one additional advanced science course – AP Biology, AP Chemistry, or AP Environmental Science.

**Students will study at least 3 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 Capstone (EDD)
- PLTW Introduction to Engineering Design
- PLTW Civil Engineering and Architecture
- Technical Drawing
- Engineering Exploration – Robotics 1 or 2
- AP Computer Science
- AP Statistics
- AP Capstone Seminar/Research

**Students will also:**
- Complete 50 engineering hours (11 and 12 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>Functions/Trigonometry</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>Foreign Language</td>
<td>AP Seminar</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective</td>
</tr>
</tbody>
</table>
The Center for Environmental and Natural Sciences (CENS) specialty at Freedom High School offers a rigorous four-year program of studies designed to include strong laboratory and field investigation components. The curriculum is integrated with other educational disciplines so that students gain a greater understanding of the relationships between environmental and natural sciences and these disciplines, as well as appreciate its connection with everyday life.

The program emphasizes interactive science research and projects that make use of the on-site CENS lab, greenhouse, aquarium, diverse habitats, and wet pond. Students participate in co-curricular and extracurricular activities, including community service, and will become involved with business and community partnerships that enhance their understanding of environmental and natural sciences. The program of studies includes a sequence of required CENS science courses, Pre-AP/AP English and social studies classes, and a strong mathematics sequence.

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

### 10th Grade

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

### 11th Grade

| (1) Physics I                      | (1) AP Biology or AP Chemistry      |
| (1) AP English Language and Composition or English 11 | (1) AP English Language and Composition |
| (1) AP US History                   | (1) AP US History                   |
| (1) Mathematics (Alg. II or Functions Trig) | (1) Mathematics (Alg. II or Functions Trig) |
| (1) World Language                  | (1) World Language                  |
| (1) Student Elective                | (1) CENS Science Elective           |
| (1) Student Elective                | (1) Student Elective                |

### 12th Grade

| (1) AP Environmental Science       | (1) AP Environmental Science       |
| (1) AP English Literature and Composition or DE English | (1) AP English Literature and Composition |
| (1) AP Government and US Virginia Government | (1) AP Government and US Virginia Government |
| (1) Mathematics (AP Calculus)      | (1) Mathematics (AP Calculus)      |
| (1) Student Elective               | (1) Student Elective               |
| (1) Student Elective               | (1) Student Elective               |
| (1) Student Elective               | (1) Student Elective               |

9th Grade

10th Grade

11th Grade

12th Grade
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>Functions Trigonometry or Functions Analytic Geometry</td>
</tr>
</tbody>
</table>

The following courses are designated as weighted CENS Science courses:

<table>
<thead>
<tr>
<th>Weighted CENS Science courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Placement Environmental Science</td>
</tr>
<tr>
<td>Advanced Placement Chemistry</td>
</tr>
<tr>
<td>Advanced Placement Biology</td>
</tr>
<tr>
<td>Advanced Placement Physics 1 and 2</td>
</tr>
<tr>
<td>Advanced Placement Human Geography</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 eight concentrations including: Creative Writing, Dance, Band, Orchestra, 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 10 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

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

Program Requirements

- Participate in an entrance audition.
- Complete a minimum of five credit hours in the arts (four for those entering as sophomores). The credits should be in the student’s concentration area.
- 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 at the end of grades 9, 10 and 11. Requirements vary based on concentration. More information is available in the handbook.
- Successfully participate in the Senior Showcase and/or present a final portfolio depending on their chosen concentration. More information is available in the handbook.
- Achieve and maintain a B average in the concentration area and a C average overall.
CFPA SEQUENCE OF STUDIES

Required electives

<table>
<thead>
<tr>
<th></th>
<th>Grade 9</th>
<th>Grade 10</th>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creative Writing</td>
<td>Creative Writing Exploration</td>
<td>Genre Focus: - Scriptwriting and Creative Nonfiction</td>
<td>Genre Focus: - Scriptwriting and Creative Nonfiction</td>
<td>Genre Focus: - Scriptwriting and Creative Nonfiction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Poetry and Fiction</td>
<td>- Poetry and Fiction</td>
<td>- Poetry and Fiction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Writing for Publications</td>
<td>- Writing for Publications</td>
<td>- Writing for Publications</td>
</tr>
<tr>
<td>Dance</td>
<td>Dance I Company</td>
<td>Dance II Corp</td>
<td>Dance III Ensemble</td>
<td>Dance IV Artist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dance Composition and Repertory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrumental Music</td>
<td>**Ensemble</td>
<td>**Ensemble</td>
<td>**Ensemble; <em>Piano; Music Technology</em> or Vocal Class</td>
<td>*<em>Ensemble; Piano</em></td>
</tr>
<tr>
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</tr>
<tr>
<td>Vocal Music</td>
<td>**Ensemble</td>
<td>**Ensemble</td>
<td><em><em>Ensemble Piano</em> or Music Technology (&quot;Piano is an exit requirement) Music Theory</em> or Vocal Class</td>
<td>*<em>Ensemble; Piano</em></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theater</td>
<td>Theater I: Intro To Theater</td>
<td>CFPA Advanced Performance Theatre OR Theatre Productions</td>
<td>CFPA Theatre III OR Musical Theatre OR Theatre Productions OR Women’s Chorale OR Men’s Choir</td>
<td>Directing for Stage and Screen, Musical Theatre, OR Theatre Productions (Choose 2)</td>
</tr>
<tr>
<td>Visual Arts</td>
<td>CFPA Art I</td>
<td>CFPA Art II</td>
<td>Art Portfolio Prep</td>
<td>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>Music Technology</td>
<td>**Ensemble</td>
<td>Music Technology</td>
<td>Advanced Music Technology</td>
<td>Piano or Guitar plus one other music elective approved by the advisor</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.

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**GLOBAL AWARENESS**

**INFORMATION AND COMMUNICATION**

- Language Arts
- Mathematics
- Journalism
- Library

**CULTURES AND LANGUAGES**

- World Languages
- Social Studies
- Art and Music
- Architecture

**SOCIAL AND POLITICAL SCIENCES**

- Social Studies
- Business
- Science

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**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 twelve-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.

* 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 Core Courses for Full CISL Certificate Candidates

- World Languages—four years of the same world language: choice of Arabic, French, German, Italian, Korean, Latin, Russian, or Spanish. Students are encouraged to pursue the 4/5 year option culminating with the AP course in the chosen language. Exception: Students may take a combination of two languages if Arabic, Korean, or Russian is studied.
- Pre-AP English 9
- Pre-AP English 10
- AP English Language or English 11
- AP English Literature or English 12
- Pre-AP World History to 1500 & AP World History
- AP Human Geography
- AP Government and Politics: Comparative (capstone course, grade 11 or 12)
- AP United States History or U.S. and Virginia History
- Pre-AP Biology and/or Advanced Earth Science

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

CISL Qualifying Electives

- Advanced Earth Science
- Adv. Design MultiM/Web
- AFJROTC
- AP Biology
- AP Chemistry*
- AP Computer Science
- AP Economics
- AP European History
- AP Government & Politics
- AP Psychology
- AP Physics 1
- AP Physics C: Mechanics
- Architecture

- Art (AP Studio Art, Art Portfolio, Computer Art)
- Astronomy
- Geology
- Creative Writing
- International Business
- GEMS w/ Research
- Journalism
- Music Theory: Band, Choir, Orchestra, Theory
- Oceanography
- Photography
- Sociology
- Twentieth Century History
- Video and Media Technology

* Not available every year.

Any core course may also be taken as an elective, e.g. an additional world language.
A 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>World History</td>
<td>AP United States History or US &amp; VA History</td>
<td>AP Government &amp; Politics: Comparative</td>
</tr>
<tr>
<td>World Language (primary)</td>
<td>Math Sequence</td>
<td>World Language (primary)</td>
<td>World Language (primary)</td>
</tr>
<tr>
<td>Math Sequence</td>
<td>Science Sequence</td>
<td>Math Sequence</td>
<td>Math Sequence</td>
</tr>
<tr>
<td>Pre-AP Biology I</td>
<td>Health and P.E. II</td>
<td>Science Sequence</td>
<td>Science Sequence</td>
</tr>
<tr>
<td>Health and P.E. I</td>
<td>AP Human Geography</td>
<td>CISL Elective</td>
<td>CISL Elective</td>
</tr>
<tr>
<td>Fine or Practical Arts Unit</td>
<td></td>
<td>AP Macroeconomics</td>
<td>Elective</td>
</tr>
</tbody>
</table>

CISL PROGRAM COURSES:

- International Business & Marketing
- Civil Engineering and Architecture (PLTW)
- Pre-AP English 9
- Pre-AP English 10
- Creative Writing I & II
- Journalism I – IV
- Level I: Arabic, French, German, Italian, Korean, Latin, Russian, Spanish
- Level II: Arabic, French, German, Italian, Korean, Latin, Russian, Spanish
- Level III: Arabic, French, German, Italian, Korean, Latin, Russian, Spanish
- Level IV: Arabic, French, German, Italian*, Korean, Latin, Russian, Spanish
- Level V: French, German, Italian, Spanish
- Spanish for Native Speakers I – III
- Choir/Band/Orchestra/Music Theory
- Advanced Earth Science
- Earth Science II: Oceanography
- Pre-AP Biology
- Earth Science II: Astronomy
- Geology
- Sociology
- Pre-AP World History & Geography to 1500
- Twentieth Century History
- Video & Media Technology
- GEMS
- Art I – III
- Art Portfolio
- Adv. Des. MultiM/Web
- Photography
- AFJROTC
- Computer Art I
- 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 Computer Science A*
- AP Macroeconomics
- AP Psychology

* Not offered every year.
The Information Technology (iT) Program is a rigorous and challenging course of study for academically and technology motivated students. The Information Technology Program will provide interested students the opportunity to become engaged in an intensive technological program of studies developed through a collaborative relationship with the business and academic community.

Battlefield High School and Forest Park High School offer unique specialty programs within the information technology field. The following is a number of suggested sequences that will prepare students for certification of advanced areas of study. Individual schedules should be developed with the help of teachers, school counselors, and the iT Coordinator.

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.

Those students who successfully complete their program of study will be eligible to receive either a gold or silver medal (depending on level of achievement) that they can wear at graduation.

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) (Forest Park) or Bobcats Evaluating and Servicing Technology (BEST) (Battlefield).
- Some courses are offered for Dual Enrollment through a partnership with Northern Virginia Community College:
  - IT Programming
  - IT WebTec
- 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 are:
  - Cisco Certified Network Associate (CCNA)
  - Cisco Certified Entry-Level Network Technician (CCENT)
  - Oracle Certified Professional
  - Adobe Certified Associate (ACA)
  - CompTia A+
## IT Sequences

### IT Classes and Suggested Sequences

Student must be enrolled in IT program to take any IT class.

#### 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>
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<tr>
<td></td>
<td>IT Multimedia Software Design and Development II</td>
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</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>Computer System Technology I</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>IT Programming</td>
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</tbody>
</table>

#### Computer Science

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th or 10th grade</td>
<td>Computer Math</td>
</tr>
<tr>
<td></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 (CIW)</td>
</tr>
<tr>
<td>11th or 12th grade</td>
<td>Computer Science: Data Structures and Algorithms</td>
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<tr>
<td></td>
<td>Database Design and Management (Oracle)</td>
</tr>
<tr>
<td></td>
<td>IT Advanced Web Technologies (CIW)</td>
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<tr>
<td></td>
<td>AP Calculus AB</td>
</tr>
<tr>
<td>12th Grade</td>
<td>Advanced Computer Studies</td>
</tr>
<tr>
<td></td>
<td>IT Programming</td>
</tr>
<tr>
<td></td>
<td>AP Calculus BC</td>
</tr>
</tbody>
</table>
The following courses are designated as Information Technology Program courses:

<table>
<thead>
<tr>
<th>Information Technology Program courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADV Computer Mathematics</td>
</tr>
<tr>
<td>ADV 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>Computer Science: Data Structures and Algorithms</td>
</tr>
<tr>
<td>IT ADV Database Design &amp; Management</td>
</tr>
<tr>
<td>IT Advanced Web Technologies</td>
</tr>
<tr>
<td>IT Computer Graphics I &amp; II</td>
</tr>
<tr>
<td>IT Database Design &amp; Management</td>
</tr>
<tr>
<td>Information Technology Fundamentals</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 Programming</td>
</tr>
<tr>
<td>IT Web Technologies</td>
</tr>
</tbody>
</table>

The following courses are designated as weighted Instructional Technology Program courses:

<table>
<thead>
<tr>
<th>Weighted Instructional Technology Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSE</td>
</tr>
<tr>
<td>Advanced Computer Mathematics</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 (DE)</td>
</tr>
<tr>
<td>Computer Science: Data Structures and Algorithms</td>
</tr>
<tr>
<td>IT ADV Database Design &amp; Management (DE)</td>
</tr>
<tr>
<td>IT Advanced Web Technologies (DE)</td>
</tr>
<tr>
<td>IT Database Design and Management (DE)</td>
</tr>
<tr>
<td>IT Programming (DE)</td>
</tr>
<tr>
<td>IT Web Technologies (DE)</td>
</tr>
</tbody>
</table>

DE = (Dual Enrollment)
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 ninth and tenth 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 eleventh and twelfth 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 (7) 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

¹ Students 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.

<table>
<thead>
<tr>
<th><strong>Group 1:</strong> Mathematics and Sciences</th>
<th><strong>Group 2:</strong> Languages</th>
<th><strong>Group 3:</strong> Arts and Humanities</th>
<th><strong>Group 4:</strong> Interdisciplinary &amp; Skill-Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>AICE Biology</td>
<td>AICE English Language</td>
<td>AICE Art &amp; Design</td>
<td>AICE General Paper</td>
</tr>
<tr>
<td>AICE Chemistry</td>
<td>AICE English Literature</td>
<td>AICE World History</td>
<td>AICE Thinking Skills</td>
</tr>
<tr>
<td>AICE Mathematics I</td>
<td>AICE Spanish Language</td>
<td>AICE US History</td>
<td>AICE Global Perspective</td>
</tr>
<tr>
<td>AICE Mathematics II</td>
<td>AICE French Language IV</td>
<td>AICE Psychology</td>
<td></td>
</tr>
<tr>
<td>AICE Mechanics (Level A)</td>
<td>AICE French Language V</td>
<td>AICE Music</td>
<td></td>
</tr>
<tr>
<td>AICE Physics</td>
<td>AICE German IV</td>
<td>AICE International History</td>
<td></td>
</tr>
<tr>
<td>AICE Marine Science</td>
<td>AICE German V</td>
<td>AICE Physical Education</td>
<td></td>
</tr>
<tr>
<td>AICE Environmental Management</td>
<td>AICE Spanish IV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AICE Spanish V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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>Course</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGCSE English 10</td>
<td>IGCSE Music Studies</td>
</tr>
<tr>
<td>IGCSE French III</td>
<td>IGCSE Biology</td>
</tr>
<tr>
<td>IGCSE German III</td>
<td>IGCSE Chemistry</td>
</tr>
<tr>
<td>IGCSE Spanish III</td>
<td>IGCSE Physics</td>
</tr>
<tr>
<td>IGCSE Latin 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>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>AICE Biology</td>
<td>AICE Mathematics I</td>
</tr>
<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 German IV</td>
</tr>
<tr>
<td>AICE Spanish IV</td>
<td>AICE German V</td>
</tr>
<tr>
<td>AICE Spanish V</td>
<td>AICE English Language &amp; Composition</td>
</tr>
<tr>
<td>AICE International History, 1945-91</td>
<td>AICE Thinking Skills I</td>
</tr>
<tr>
<td>AICE Psychology</td>
<td>AICE Thinking Skills II</td>
</tr>
<tr>
<td>AICE Latin V</td>
<td>AICE Music</td>
</tr>
<tr>
<td>AICE Classical Studies I</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>
The IB continuum of international education is unique because of its academic and personal rigor. We challenge students to excel in their studies and in their personal growth. We aim to inspire a quest for learning throughout life that is marked by enthusiasm and empathy.

The IB aspires to help schools develop well-rounded students with character: students who can respond to challenges with optimism and an open-mind; students confident in their own identities; students who make ethical decisions; students who join with others in celebrating our common humanity; students who are prepared to apply what they learn in real world, complex and unpredictable situations.

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

- **centers on learners** – the IB’s student-centered programmes promote healthy relationships, ethical responsibility and personal challenge
- **develops efective 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 signifcant ideas and issues
- **explores signifcant 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 reflactive. These attributes of internationally minded people represent a broad range of human capacities and responsibilities that go beyond intellectual development and academic success.

**International Baccalaureate Programme**
**Gar-Field Senior High School & Stonewall Jackson Senior High School**

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

The IB MYP is a programme of study that provides a framework of academic challenge, which encourages 9th and 10th grade students to embrace and understand the connections between traditional subjects and the real world, and to become critical thinkers. The IB high schools ofer students a fve year IB MYP programme that began in middle school or a two year program 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.

Pre-IB Diploma Programme (Pre-IBDP) courses are ofered within the Middle Years Programme as part of the advanced course sequence to prepare students with an adequate 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 Pre-DP classes in their areas and strength and interest to prepare them for specifc IBDP courses in grades 11 and 12.
The Diploma Programme
(11th and 12th grade)

The International Baccalaureate® 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 International Baccalaureate® (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
• 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
• 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 Pre-Diploma and IB Diploma Program 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. Pre-Diploma (Pre-IBDP) 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, guidance counselors, and the IB Coordinators. Students must take one credit of fine arts or practical arts as one of the free electives.

**Grade 9**
- Pre-IBDP English 9
- Pre-IBDP Foreign Language Level II
- Pre-IBDP World History II
- Pre-IBDP Biology
- Pre-IBDP Algebra I
- Health & P.E. I
- Free Elective

**Grade 10**
- Pre-IBDP English 10
- Pre-IBDP Foreign Language Level III
- Pre-IBDP World History II
- Pre-IBDP Algebra II/Trigonometry or Pre-IBDP Alg II
- Health & P.E. II
- Free Elective

**Grade 9**
- Pre-IBDP English 9
- Pre-IBDP Foreign Language Level III
- Pre-IBDP World History II
- Pre-IBDP Biology
- Pre-IBDP Geometry
- Pre-IBDP Health & P.E. I
- Art Elective (Music, Fine or Performing Arts)

**IB Programme**

These IB Programme sequences are suggestions. Several modifications of sequences are available. Individual student schedules should be developed with the help of teachers, guidance 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 Foreign Language Level IV (SL)*
- IB History I (HL)
- IB Biology I (HL) or IB Chemistry I (SL)
- Pre-DP Algebra II/Trigonometry or IB Math Studies (SL)
- IB Fine Arts I (HL) or IB Elective**

**Grade 12**
- IB English II (HL)
- IB Foreign Language Level V (SL)*
- IB History II (HL)
- IB Biology II (HL) or IB Environmental Systems (SL) or IB Chemistry II (SL)
- IB Math Studies (SL)
- IB Fine Arts II (HL) or IB Elective**
- IB Theory of Knowledge

**Grade 11**
- IB English I (HL)
- IB Foreign Language Level IV (SL)*
- IB History I (HL)
- IB Biology I (HL) or IB Chemistry II (SL)
- IB Math I (SL) or IB Math I (HL)
- IB Fine Arts I (HL) or IB Elective**
- Free Elective

**Grade 12**
- IB English II (SL)
- IB Foreign Language Level V (SL)*
- IB History II (HL)
- IB Biology II (HL) or IB Environmental Systems (SL)
- IB Math II (SL) or IB Math II (HL)
- IB Fine Arts (SL) or IB Elective**
- IB Theory of Knowledge

*Foreign language courses may include French, Spanish, Italian, and Latin

+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.
The following courses are designated as Pre-DP

<table>
<thead>
<tr>
<th>Pre-DP Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-IBDP English 9</td>
</tr>
<tr>
<td>Pre-IBDP English 10</td>
</tr>
<tr>
<td>Pre-IBDP French II</td>
</tr>
<tr>
<td>Pre-IBDP Italian II</td>
</tr>
<tr>
<td>Pre-IBDP Spanish II</td>
</tr>
<tr>
<td>Pre-IBDP French III</td>
</tr>
<tr>
<td>Pre-IBDP Spanish III</td>
</tr>
</tbody>
</table>

The following courses are designated as weighted International Baccalaureate courses:

<table>
<thead>
<tr>
<th>Weighted International Baccalaureate courses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>IB Visual Arts I (HL)</td>
</tr>
<tr>
<td>IB Visual Arts II (SL &amp; HL)</td>
</tr>
<tr>
<td>IB English I</td>
</tr>
<tr>
<td>IB English II (HL)</td>
</tr>
<tr>
<td>IB English II (SL)</td>
</tr>
<tr>
<td>IB Theatre Arts (SL)</td>
</tr>
<tr>
<td>IB Theory of Knowledge</td>
</tr>
<tr>
<td>IB French IV (SL)</td>
</tr>
<tr>
<td>IB French IV (HL)</td>
</tr>
<tr>
<td>IB French V (SL or HL)</td>
</tr>
<tr>
<td>IB Spanish IV (SL)</td>
</tr>
<tr>
<td>IB Spanish IV (HL)</td>
</tr>
<tr>
<td>IB Spanish V (SL or HL)</td>
</tr>
<tr>
<td>IB Italian IV (SL)</td>
</tr>
<tr>
<td>IB Italian V (SL)</td>
</tr>
<tr>
<td>IB Spanish A2 (SL)</td>
</tr>
<tr>
<td>IB Spanish A2 (HL)</td>
</tr>
<tr>
<td>IB AB Initio French I</td>
</tr>
<tr>
<td>IB AB Initio French II</td>
</tr>
<tr>
<td>IB AB Initio Spanish I</td>
</tr>
<tr>
<td>IB AB Initio Spanish II</td>
</tr>
<tr>
<td>IB Global Politics</td>
</tr>
<tr>
<td>IB Mathematics I (SL)</td>
</tr>
<tr>
<td>IB Mathematics II (SL)</td>
</tr>
</tbody>
</table>

Policies regarding credit for high school courses are developed by individual colleges and universities, not by the International Baccalaureate 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.
The Virtual High School

“The Virtual High School @ PWCS provides a unique opportunity for students to earn high school credit in an online classroom. Students and teachers communicate within the learning management system utilizing tools such as secure email, audio, video, Web conferencing, and instant messaging. Students are provided with quality, standards based courses taught by highly-qualified PWCS teachers. All courses are aligned with PWCS and Virginia SOL objectives. Virtual HS instructors provide direct instruction to students online and communicate directly with parents to help ensure student success. VHS courses are NCAA approved as non-traditional courses.

The Virtual High School

“Achieving student success in a flexible online learning environment”

The goals of the Virtual High School 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
- Computer with proper configuration
The following online courses will be offered this school year:

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

Additional courses are being developed, please contact the VHS Coordinator 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 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.

The Path to Industry Certification: Industry Credentialing Requirement for the Standard Diploma

Students seeking a standard diploma shall earn a career and technical education credential approved by the Board of Education, except when a CTE credential in a particular subject area is not readily available or appropriate or does not adequately measure student competency, in which case the student shall receive satisfactory competency-based instruction in the subject area to satisfy the standard diploma requirements.

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 evaluates and approves credentials annually.

Additional information on industry credentials is available at the PWCS CTE webpage.

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.
CTE Transfer Programs
Student participation in a CTE transfer program requires a full-time transfer to the CTE program school. Students living within the boundaries of the CTE program school may ride their regular bus to school. Limited transportation is available for students who reside outside the boundaries of the CTE program school through the established network of express bus stops. Parents/guardians have the responsibility to provide transportation to and from express bus stops.

NOTE: ALL students interested in a Transfer Program (even those who attend the school that provides the CTE Transfer Program) MUST complete the PWCS on-line application.

Horticulture – Brentsville
The Horticulture program employs a hands-on curriculum encouraging student development in the necessary 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.

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.

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.

Cyber Security – 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 4-year program of study with an IT elective such as IT Fundamentals in 9th grade; Programming in 10th grade; Computer Systems Technology I/Cyber Security in 11th grade; and Computer Systems Technology II/Cyber Security and Forensics in 12th grade.

Heating, Ventilation, and Air Conditioning (HVAC) – Freedom/Northern Virginia Community College Dual Enrollment
Northern Virginia Community College and PWCS have partnered to create a dual enrollment program in Heating, Ventilation, and Air Conditioning. The four-year program allows students to graduate with 16 college credits (8 credits in the first year; 8 credits in the second year) toward a Career Studies Certificate in HVAC. Students take college course work at NVCC’s Woodbridge campus each day, M-F. All other high school course requirements are completed at neighboring Freedom high school. Students will earn 2 high school credits each year for the HVAC courses.

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.
**Welding – Potomac Transfer program**
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.

**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 begins in 9th grade with Video and Media Technology. 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.

**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 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 eleventh grade. Courses are scheduled in a three-period/triple block each year.

**Culinary Arts – Potomac, Patriot**
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 eleventh grade.

**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 eighteen-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*  
*Weighted: No*  
*Dual Enrolled: No*  
*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 laboratory. Instruction is provided in safety and leadership development.

**CTE Sequences:** The course above and any one of the following courses – Landscaping; Turf Grass Establishment and Maintenance

School offering course: 1

**LANDSCAPING I**

*Grades: 10-12*  
*Credit: 1*  
*Weighted: No*  
*Dual Enrolled: No*  
*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

School offering course: 1

**LANDSCAPING II**

*Grades: 11-12*  
*Credit: 1*  
*Weighted: No*  
*Dual Enrolled: No*  
*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

School offering course: 1

**TURF GRASS ESTABLISHMENT AND MAINTENANCE**

*Grade: 10-12*  
*Credit: 1*  
*Weighted: No*  
*Dual Enrolled: No*  
*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

School 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*  
*Weighted: No*  
*Dual Enrolled: No*  
*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 Sequences:** 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

Schools offering course: All except 99 & 9

**ADVANCED ACCOUNTING**

*Grades: 11-12*  
*Credit: 1*  
*Weighted: No*  
*Dual Enrolled: No*  
*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 Sequences:** 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 9, 99

**BUSINESS LAW**

Grades: 10-12  
Credit: 1  
Weighted: No  
Dual Enrolled: No  
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 Sequences:** 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

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

**BUSINESS MANAGEMENT**

Grades: 10-12  
Credit: 1  
Weighted: No  
Dual Enrolled: No  
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 Sequences:** 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

Schools offering course: 2, 3, 9, 12

The Computer Applications course is no longer offered at the high school level. Students should enroll in Computer Information Systems for basic computer application instruction. Please see the Computer Information Systems course description below.

**COMPUTER INFORMATION SYSTEMS**

Grades: 9-12  
Credit: 1  
Weighted: No  
Dual Enrolled: No  
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.

Schools offering course: All except 9, 99

**ADVANCED COMPUTER INFORMATION SYSTEMS**

Grades: 10-12  
Credit: 1  
Weighted: No  
Dual Enrolled: No  
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 Sequences:** The course above and any one of the following courses – Accounting; Accounting Advanced; Business Law; Business Management; Computer Information Systems Advanced; Design, Multimedia and Web Technologies; Design, Multimedia and Web Technologies Advanced; Entrepreneurship; IT Fundamentals; IB Business and Management; Principles of Business and Marketing; Programming; Programming Advanced

Schools offering course: All except 99

**DESIGN, MULTIMEDIA AND WEB TECHNOLOGIES**

Grades: 9-12  
Credit: 1  
Weighted: No  
Dual Enrolled: No  
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 Sequences:** 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

Schools offering course: All except 9, 99
ADVANCED DESIGN, MULTIMEDIA AND WEB TECHNOLOGIES
Grades: 10-12 Credit: 1
Weighted: No Dual Enrolled: No
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 Sequences: 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

Schools offering course: All except 9, 99

ECONOMICS AND PERSONAL FINANCE
Grades: 10-12 Credit: 1
Weighted: No Dual Enrolled: No
Prerequisite: None

This course meets the graduation requirement for Economics and Personal Finance. The following courses may be substituted to meet this requirement: AP Economics, IB Economics, Personal Living and Finances, AP Macroeconomics, AICE Economics - AS, AICE Economics - A.

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.

CTE Sequences: None

Schools offering course: All including 99

ENTREPRENEURSHIP
Grades: 10-12 Credit: 1
Weighted: Yes (0.5W) Dual Enrolled: Yes
Prerequisite: None
Associated Institution: NVCC

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 Sequences: 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 expect 5, 8 & 99
School offering Dual Enrolled: 2

PRINCIPLES OF BUSINESS AND MARKETING
Grades: 9-10 Credit: 1
Weighted: No Dual Enrolled: No
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 Sequences: 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

Schools offering course: All except 99

PROGRAMMING
Grades: 10-12 Credit: 1
Weighted: No Dual Enrolled: No
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 Sequences: 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

Schools offering course: All except 7 & 99
ADVANCED PROGRAMMING
Grades: 11-12 Credit: 1
Weighted: No Dual Enrolled: No
Prerequisite: Programming
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 Sequences: 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, 5, 6, 8, 9, 10, 12

IT PROGRAMMING
Grades: 10-12 Credit: 1
Weighted: Yes (0.5W) Dual Enrolled: Yes
Prerequisite: Enrolled in IT Program
Associated Institution: NVCC
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 Sequences: 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 Web Technologies; Programming Advanced

Schools offering course: 8
School offering Dual Enrolled: 8, 9

IT DATABASE DESIGN AND MANAGEMENT (Oracle)
Grades: 11-12 Credit: 1
Weighted: Yes (1.0 W) Dual Enrolled: Yes
Prerequisite: Enrolled in IT Program
Associated Institution: NVCC
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. Students will prepare for the first of two certification exams.

CTE Sequences: 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

Schools offering course: 8, 9

IT ADVANCED DATABASE DESIGN AND MANAGEMENT (Oracle)
Grade: 12 Credit: 1
Weighted: Yes (1.0 W) Dual Enrolled: Yes
Prerequisite: Database Design and Management
Associated Institution: NVCC
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 Sequences: 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: 8, 9

INTERNATIONAL BUSINESS AND MARKETING
Grades: 10-12 Credit: 1
Weighted: No Dual Enrolled: No
Prerequisite: Enrollment in a foreign language course either concurrently or prior to enrolling in this course
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 Sequences: 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

School offering course: 7

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 Credit: 1
Weighted: No Dual Enrolled: No
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 Sequences: 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

Schools offering course: 8, 9

IT WEB TECHNOLOGIES
Grades 10-12 Credit: 1
Weighted: Yes (0.5W) Dual Enrolled: Yes
Prerequisite: Enrolled in IT Program
Associated Institution: NVCC

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 Sequences: 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

Schools offering course: 6, 7, 8, 11, 12

CAREER CONNECTIONS

CAREER INTERPRETATIONS II
Grades: 10-12 Credit: 1
Weighted: No Dual Enrolled: No
Prerequisite: None

CAREER INTERPRETATIONS II
Grades: 10-12 Credit: 1
Weighted: No Dual Enrolled: No
Prerequisite: None

Industry Certification: None

Career Investigations consists of an in-depth study of career clusters through a variety of investigative activities. Students observe, analyze, and report on the demand for workers, worker qualifications, organizational structures, quality control measures, selected policies and regulations, ethical issues, and rewards of work. Students analyze career assessment results, compare various educational options, and develop or revise a plan related to their academic and career-related goals.

Course Sequences: None

School offering course: New Directions Only

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
INTRODUCTION TO CULINARY ARTS

Grades: 10-12
Weighted: No
Dual Enrolled: No
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 Sequences:** 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, 6, 8, 9, 99

CULINARY ARTS I

Grades: 11-12
Weighted: No
Dual Enrolled: No
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 Sequences:** 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: 4, 11

CULINARY ARTS II

Grades: 12
Weighted: No
Dual Enrolled: No
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 Sequences:** 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

School offering: 4, 11

EARLY CHILDHOOD EDUCATION AND SERVICES I

Grades: 11-12
Weighted: Yes (0.5W)
Dual Enrolled: Yes
Prerequisite: ADMISSION TO ALL STUDENTS BY APPLICATION

Associated Institution: NVCC

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 Sequences:** 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
Schools offering Dual Enrolled: 2, 11

EARLY CHILDHOOD EDUCATION AND SERVICES II

Grade: 12
Weighted: Yes (0.5W)
Dual Enrolled: Yes
Prerequisite: Early Childhood Education and Services I

Associated Institution: NVCC

Students focus on occupational skills needed by personnel employed in early childhood-related fields, such as education, medical/health care, social services, counseling, psychology, and entrepreneurship. Work-based experiences under the supervision of the instructor are required. Critical thinking, practical problem solving, and entrepreneurship opportunities within the field of early childhood education are emphasized.

**CTE Sequences:** 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
School offering Dual Enrolled: 2, 11
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 Sequences:** 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: All except 99

### INTRODUCTION TO FASHION CAREERS
(formerly Introduction to Fashion Design and Marketing)

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<tr>
<th>Grades:</th>
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<th>Credit: 1</th>
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<tbody>
<tr>
<td>Weighted:</td>
<td>No</td>
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<tr>
<td>Prerequisite:</td>
<td>Enrolled in Fine and Performing Arts Specialty Program</td>
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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 Sequences:** 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, 11

### INDEPENDENT LIVING

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<tr>
<th>Grades:</th>
<th>9-12</th>
<th>Credit: 1</th>
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<tbody>
<tr>
<td>Weighted:</td>
<td>No</td>
<td>Dual Enrolled: No</td>
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<tr>
<td>Prerequisite:</td>
<td>None</td>
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</tbody>
</table>

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 Sequences:** 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; Life Planning; Nutrition and Wellness; Virginia Teachers for Tomorrow I; Virginia Teachers for Tomorrow II

Schools offering course: All except 7, 8 & 11

### LIFE PLANNING

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<tr>
<th>Grades:</th>
<th>11-12</th>
<th>Credit: 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted:</td>
<td>No</td>
<td>Dual Enrolled: No</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

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 Sequences:** 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; Independent Living; Individual Development; 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
NUTRITION AND WELLNESS

Grades: 9-12  Credit: 1
Weighted: No  Dual Enrolled: No
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 technology when appropriate.

CTE Sequences: 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
Weighted: No  Dual Enrolled: No
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 Sequences: 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; Life Planning; Nutrition and Wellness; Virginia Teachers for Tomorrow I; Virginia Teachers for Tomorrow II

Schools offering course: All

VIRGINIA TEACHERS FOR TOMORROW I

Grade: 12 with application  Credit: 1
Weighted: Yes (1.0 W)  Dual Enrolled: Yes

Grade: 11 on limited basis with application
Prerequisite: 3.0 GPA and Application
Associated Institution: Shenandoah University

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 Sequences: 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: 2, 3, 5, 6, 7, 8, 11, 12
Schools offering Dual Enrolled: 2, 8, 11, 12

VIRGINIA TEACHERS FOR TOMORROW II

Grade: 12  Credit: 1
Weighted: No  Dual Enrolled: No
Prerequisite: Virginia Teachers for Tomorrow I

Students continue to explore careers in the Education and Training Cluster and pathways. This course provides the opportunity for students to prepare for careers in education as they research post-secondary options, learn about the process of teacher certification in Virginia, and participate in a practicum experience.

CTE Sequences: 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 I

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

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.

PROJECT LEAD THE WAY (PLTW) – BIOMEDICAL SCIENCES COURSES

BIOMEDICAL INNOVATION (PLTW)

Grades: 11-12  Credit: 1
Weighted: No  Dual Enrolled: No
Prerequisite: None

In this specialization course for Project Lead the Way, 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.

Schools offering course: 3

HUMAN BODY SYSTEMS (PLTW)

Grades: 10-12  Credit: 1
Weighted: No  Dual Enrolled: No
Prerequisite: Principles of Biomedical Science (PLTW)

In this Project Lead the Way (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 Principles of the Biomedical Sciences (PLTW)

**Course Sequence:** The course above and any one of the following: Biomedical Innovation (PLTW), Human Body Systems (PLTW), Medical Interventions (PLTW)

School offering course: 3

**MEDICAL INTERVENTIONS (PLTW)**

Grades: 11-12  Credit: 1  Weighted: No  Dual Enrolled: No

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 Sequences:** Principles of Biomedical Science, Biomedical Innovation

School offering course: 3

**PRINCIPLES OF BIOMEDICAL SCIENCE (PLTW)**

Grades: 9-12  Credit: 1  Weighted: No  Dual Enrolled: No

Prerequisite: None

Students explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person’s life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.

School offering course: 3

**PRACTICAL NURSING I (18 weeks)**

Grade: 12-Adult  Credits: 1.5  Weighted: No  Dual Enrolled: No

Prerequisite: ADMISSION TO ALL STUDENTS BY APPLICATION; Introduction to Health and Medical Sciences; Practical Nursing I (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 Sequences:** The course above and any one of the following courses – Introduction to Health and Medical Sciences; 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  Credits: 1.5  Weighted: No  Dual Enrolled: No

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 Sequences:** The course above and any one of the following courses – Introduction to Health and Medical Sciences; Practical Nursing I

Schools offering course: Available to ALL high school students through an application process. Check with school counselor. Adult application accepted with tuition. Call 703.365.6692.

**PRACTICAL NURSING III**

Grade: Adult  Credit: 0  Weighted: No  Dual Enrolled: No

Prerequisite: Practical Nursing I and II

This high school extended course provides classroom instruction and clinical training in approved hospitals, licensed nursing homes, or home-care settings under the direction of a nurse educator. Instruction emphasizes administration of medicines, advanced and complex patient care, and practice with patients of all ages. Students learn advanced anatomy, physiology, and human behavior as related to health and disease, including mental illness. Upon successful completion of the total program, students qualify for the practical nurse licensing examination.

**Course Sequences:** Practical Nursing I; Practical Nursing II

Schools offering course: 3; Post-high school offering

**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

These courses, taught by the school’s certified athletic trainer, place emphasis on recognition, prevention, and treatment of common sports injuries. In addition, students learn anatomy and physiology of the human body, first aid, nutrition, and career opportunities. Students will be required to participate in 9 hours per 9-week grading period of after school practicum for successful completion. Completion of both Athletic Training courses may be taken as part of the sequencing requirement for graduation.

Schools offering course: All
SPORTS MEDICINE II
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Sports Medicine I with at least a “B”, and teacher recommendation

These courses, taught by the school’s certified athletic trainer, continue to place emphasis on recognition, prevention, and treatment of common sports injuries. In addition to classroom instruction, students in this course will be required to complete 75 hours of practical ATC work with one team during the school year. Completion of both Athletic Training courses will fulfill the course sequencing requirement for graduation.

Schools offering course: All

IB INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY
Grades: 11-12 Credit: 1
Weighted: Yes (1.0W) Dual Enrolled: No
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.

School offering course: 2

IB BUSINESS MANAGEMENT
Grades: 11-12 Credit: 1
Weighted: Yes (1.0W) Dual Enrolled: Yes
Prerequisite: Enrollment in IB Program

IB Business and Management is a recognized International Baccalaureate 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.

CTE Sequences: 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

School offering Dual Enrolled: 2

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.

School offering course: 2
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.

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.

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

**NAVAL SCIENCE – CHALLENGE COURSE (NJROTC)**
Grades: 11-12  
Credit: 1  
Prerequisite: Successful completion of Naval Science III or Naval Science IV with a grade of “B” or better and instructor recommendation

This fifth-level course includes units of study in leadership and skill application. All students desiring to take this course must demonstrate their swimming ability by swimming 50 yards and treading water for five minutes. Students must also pass the NJROTC physical readiness test and participate in physical training each day. Students planning to enroll in JROTC programs must meet program entry requirements.

School offering course: 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.

Schools offering course: 6, 8

MILITARY SCIENCE II (AJROTC)
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.

Schools offering course: 6, 8

MILITARY SCIENCE III (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 IV (AJROTC)
Grade: 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.

School offering course: 2

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

75
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 Team, orientation trips, community service projects, and social events. Students planning to enroll in JROTC programs must meet program entry requirements.

School 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.

School offering course: 2

LEADERSHIP EDUCATION IV (MCJROTC)
Grades: 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.

School offering course: 2

AIR FORCE JROTC COURSE SEQUENCE

* 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 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, cadet 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.

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.

Schools offering course: 5, 7, 9, 10

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

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
Weighted: No  Dual Enrolled: No
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.

CTE Sequences: 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

ADVANCED FASHION MARKETING

Grades: 11-12  Credit: 1
Weighted: No  Dual Enrolled: No
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 Sequences: The course above and any one of the following courses – Entrepreneurship; Fashion Marketing; Introduction to Fashion Design and Marketing; Marketing; Marketing Advanced; Principles of Business and Marketing

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

OPPORTUNITIES IN HOSPITALITY AND TOURISM

Grades: 11-12  Credit: 1 credit
Weighted: No  Dual Enrolled: No
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

1 – Brentsville  4 – Potomac  7 – Hylton  10 – Freedom
2 – Gar-Field  5 – Stonewall  8 – Forest Park  11 – Patriot
3 – Osbourn Park  6 – Woodbridge  9 – Battlefield  12 – Colgan
99 – Virtual School Number Code:
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 Sequences:** The course above and any one of the following courses – Entrepreneurship; Hotel Management and Operations; Marketing; Marketing Advanced; Principles of Business and Marketing

School offering course: 5, 10

**HOTEL MANAGEMENT AND OPERATIONS**

**Grade:** 11-12  
**Credit:** 1  
**Weighted:** No  
**Dual Enrolled:** No  
**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 Sequences:** 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

School offering course: 10

**MARKETING**

**Grade:** 10-12  
**Credit:** 1  
**Weighted:** No  
**Dual Enrolled:** No  
**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 Sequences:** The course above and any one of the following courses – Business Management; Entrepreneurship; Fashion Marketing; Advanced Fashion Marketing; Hotel Marketing; Hotel Marketing Advanced; 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  
**Credit:** 1  
**Weighted:** No  
**Dual Enrolled:** No  
**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 Sequences:** The course above and any one of the following courses – Entrepreneurship; Fashion Marketing; Fashion Marketing Advanced; Hotel Marketing; Hotel Marketing Advanced; 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  
**Credit:** 1  
**Weighted:** No  
**Dual Enrolled:** No  
**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 Sequences:** 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  
**Credit:** 1  
**Weighted:** No  
**Dual Enrolled:** No  
**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 Sequences:** 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

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

School Number Code:
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
- **Credit:** 1
- **Weighted:** No
- **Dual Enrolled:** No
- **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 Sequences:** 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, 9 & 99

**CONSTRUCTION TECHNOLOGY**

- **Grades:** 9-12
- **Credit:** 1
- **Weighted:** No
- **Dual Enrolled:** No
- **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 Sequences:** 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
- **Weighted:** No
- **Dual Enrolled:** No
- **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 Sequences:** 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 ANALYSIS AND APPLICATIONS II – ROBOTICS**

- **Grades:** 11-12
- **Credit:** 1
- **Weighted:** No
- **Dual Enrolled:** No
- **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 Sequences:** The course above and any one of the following courses – Engineering Explorations I; Engineering Explorations I-Robotics; formerly Challenges of Engineering I; Challenges of Engineering I/Robotics

Schools offering course: 1, 5, 9

**ENGINEERING ANALYSIS AND APPLICATIONS II**

- **Grades:** 11-12
- **Credit:** 1
- **Weighted:** No
- **Dual Enrolled:** No
- **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 Sequences:** The course above and any one of the following courses – Engineering Explorations I; Engineering Explorations I-Robotics; formerly Challenges of Engineering I; Challenges of Engineering I/Robotics

Schools offering course: 4
COMMUNICATION SYSTEMS
Grades: 9-12 Credit: 1
Weighted: No Dual Enrolled: No
Prerequisite: None
Communication Systems provides experiences in the fields of imaging technology, graphic productions, video and media, technical design, and various modes of communicating information through the use of data. Students develop critical-thinking and problem-solving skills using the universal systems model. Students also learn about the impact of communication on society and potential career fields relating to communications.

CTE Sequences: The course above and any one of the following courses – Digital Visualization; Geospatial Technology I; Graphics Communications Systems; Video and Media Technology
Schools offering course: 2, 5, 7, 12

DIGITAL VISUALIZATION
Grades: 9-11 Credit: 1
Weighted: No Dual Enrolled: No
Prerequisite: None
Students gain experiences related to computer animation by using graphics and design concepts. Students solve problems involving 3-D object manipulation, storyboarding, texturing/mapping, lighting concepts, and environmental geometry. Students create a variety of animations that reflect real-world applications and are introduced to interactive and 3-D animation software. Production of a portfolio showcasing examples of original student work is included.

CTE Sequences: The course above and any one of the following courses – Architectural Drawing and Design; Communication Systems; Engineering and Drawing Design; Technical Drawing and Design; Video and Media Technology
Schools offering course: 2, 5, 10

ENGINEERING DRAWING AND DESIGN – CAD
Grades: 10-12 Credit: 1
Weighted: No Dual Enrolled: No
Prerequisite: Technical Drawing
Students explore the engineering design process and use a graphic language for product design, technical illustration, assembly, patent, and structural drawings. They increase their understanding of drawing and the design process and techniques learned in the prerequisite course. Students use computers, calculators, and descriptive geometry and adhere to established standards to solve design problems.

CTE Sequences: The course above and any one of the following courses – Architectural Drawing/Design/CAD; Digital Visualization; Technical Drawing
Schools offering course: 1, 3, 4, 7, 11, 12

GRAPHIC COMMUNICATIONS SYSTEMS
Grades: 10-12 Credit: 1
Weighted: No Dual Enrolled: No
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 Sequences: The course above and the following course – Communications Systems
Schools offering course: 2, 3, 4, 12

POWER AND TRANSPORTATION
Grades: 10-12 Credit: 1
Weighted: No Dual Enrolled: No
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 Sequences: The course above and the following course – Sustainability and Renewable Technologies
School offering course: 7

PRODUCTION SYSTEMS
Grades: 9-11 Credit: 1
Weighted: No Dual Enrolled: No
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 Sequences: The course above and the following course – Construction Technology
Schools offering course: 1, 4, 6, 7, 10, 11, 12

SUSTAINABILITY AND RENEWABLE TECHNOLOGIES
Grades: 9-12 Credit: 1
Weighted: No Dual Enrolled: No
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 Sequences: The course above and any one of the following courses – Business Management; Entrepreneurship; Marketing; Power and Transportation
Schools offering course: 9 & 12

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
TECHNICAL DRAWING
Grades: 9-12  Credit: 1
Weighted: No  Dual Enrolled: No
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 Sequences: 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 & 99

TECHNOLOGY FOUNDATIONS
Grades: 9-12  Credit: 1
Weighted: No  Dual Enrolled: No
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 Sequences: The course above and the following course – Technical Drawing and Design

Schools offering course: 6 & 12

VIDEO AND MEDIA TECHNOLOGY
Grades: 11-12 (Hylton HS only – grades 9-10)  Credit: 1
Weighted: No  Dual Enrolled: No
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 Sequences: The course above and any one of the following courses – Communication Systems; Digital Visualization

Schools offering course: 4, 7, 8, 10, 11 by application only

PROJECT LEAD THE WAY

PROJECT LEAD THE WAY (PLTW) – ENGINEERING COURSES

CIVIL ENGINEERING AND ARCHITECTURE
(PLTW)
Grades: 10-12  Credit: 1
Weighted: Yes (1.0W)  Dual Enrolled: No
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 Sequences: 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: 2, 3, 5, 6, 8, 9, 11, 12

DIGITAL ELECTRONICS (PLTW)
Grades: 10-12  Credit: 1
Weighted: No  Dual Enrolled: No
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.

CTE Sequences: 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: 1, 3, 5, 6, 8, 9, 11, 12

ENGINEERING DESIGN AND DEVELOPMENT
(PLTW)
Grades: 12  Credit: 1
Weighted: No  Dual Enrolled: No
Prerequisite: Must have completed at least 3 PLTW courses or have teacher approval

In this capstone course in Project Lead the Way (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.

CTE Sequences: 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, 6, 8, 11, 12

INTRODUCTION TO ENGINEERING DESIGN (PLTW)
Grades: 9-12  Credit: 1  Weighted: No  Dual Enrolled: No
Prerequisite: Must be completing college level sequence of math and science
In this foundation course in Project Lead the Way (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.

CTE Sequences: 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)
Grade: 10-12  Credit: 1  Weighted: Yes (1.0W)  Dual Enrolled: No
Prerequisite: Must be completing college level sequence of math and science
In this foundation course in Project Lead the Way (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.

CTE Sequences: 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

SOFTWARE ENGINEERING (PLTW)
Grades: 11-12  Credit: 1  Weighted: Yes (1.0W)  Dual Enrolled: No
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 aligns with the AP Computer Science Principles course.

CTE Sequences: The course above and Introduction to Engineering Design (PLTW)
Schools offering course: 2, 3, 4, 6, 9, 10, 11, 12

AUTOMOTIVE TECHNOLOGY I
Grade: 10-11  Credit: 1  Weighted: Yes (0.5W)  Dual Enrolled: Yes
Prerequisite: Automotive Technology I
• Students prepare for ASE Certification Exams
Students learn all aspects of repair, safety, and customer service by concentrating on two of the primary ASE/NATEF areas of certification (i.e., IV. Suspension and Steering; and VIII. Engine Performance).

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

AUTOMOTIVE TECHNOLOGY II
Grade: 10-11  Credit: 2  Weighted: Yes (0.5W)  Dual Enrolled: Yes
Prerequisite: Automotive Technology I
• Students prepare for ASE Certification Exams
Students learn all aspects of repair, safety, and customer service by concentrating on two of the primary ASE/NATEF areas of certification (i.e., IV. Suspension and Steering; and VIII. Engine Performance).

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

AUTOMOTIVE TECHNOLOGY III
Grade: 11-12  Credit: 2  Weighted: Yes (0.5W)  Dual Enrolled: Yes
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 by concentrating on the remaining tasks from the four primary ASE/NATEF areas of certification (i.e., IV. Suspension and Steering; V. Brakes; VI. Electrical/Electronics). The four remaining ASE/NATEF areas for certification (i.e., I. Engine Repair; II. Automatic Transmission and Transaxle; III. Manual Drive Train and Axles; and VII. Heating and Air Conditioning) have been added to the course task list as optional tasks and should only be addressed with local administrative approval.

CTE Sequences: 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

All Trade and Industrial courses will count toward meeting the one-credit “Fine Arts or Career and Technical Education” requirement for graduation.
**CABINETMAKING II**
- Grades: 11-12
- Credit: 2
- Weighted: No
- Dual Enrolled: No
- 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

School offering course: 7

**COMPUTER SYSTEMS TECHNOLOGY I**
- Grades: 10-12
- Credit: 1
- Weighted: Yes (0.5 W)
- Dual Enrolled: Yes
- Prerequisite: None

- Students prepare for A+ Certification Exams

Students enter the world of computer technology and gain practical experience in assembling a computer system, installing an operating system, troubleshooting computers and peripherals, and using 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. Emphasis is placed on customer service skills and career exploration. Upon successful completion of the course students may qualify to take the A+ certification exam.

**CTE Sequence**: The course above – Computer Systems Technology II

School offering course: 8

**COMPUTER SYSTEMS TECHNOLOGY II**
- Grade: 11-12
- Credits: 1
- Weighted: No
- Dual Enrolled: No
- Prerequisite: Computer Systems Technology I

Building on the foundation of Computer Systems Technology I, this advanced course provides students with training in procedures for optimizing and troubleshooting concepts for computer systems and subsystems. Students explore wireless technologies (e.g., Bluetooth, Wi-Fi) and create and configure a network. Emphasis is placed on technical proficiency, skill-building, and workplace readiness. The course prepares students for postsecondary education and training and a successful career in information technology.

School offering course: 4

**COMPUTER SYSTEMS TECHNOLOGY I – CYBER-SECURITY**
- Grades: 10-12
- Credit: 1
- Weighted: Yes (0.5 W)
- Dual Enrolled: Yes
- Prerequisite: None

- Students prepare for A+ Certification Exams

Students enter the world of computer technology and gain practical experience in assembling a computer system, installing an operating system, troubleshooting computers and peripherals, and using 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. Emphasis is placed on customer service skills and career exploration. Upon successful completion of the course students may qualify to take the A+ certification exam.

**CTE Sequence**: The course above – Computer Systems Technology II – Cyber-Security/Forensics

School offering course: 4
Computers Networking Hardware Operations II – Cyber-Security/Forensics

Grade: 11-12  Credit: 1
Weighted: No  Dual Enrolled: No
Prerequisite: Computer Systems Technology I

Building on the foundation of Computer Systems Technology I, this advanced course provides students with training in procedures for optimizing and troubleshooting concepts for computer systems and subsystems. Students explore wireless technologies (e.g., Bluetooth, Wi-Fi) and create and configure a network. Emphasis is placed on technical proficiency, skill building, and workplace readiness. The course prepares students for postsecondary education and training and a successful career in information technology.

CTE Sequences: The course above and – Computer Systems Technology I – Cyber-Security

School offering course: 4

Computers Networking Hardware Operations I

Grade: 11; Semester I  Credit: 0.5
Weighted: Yes (1.0W)  Dual Enrolled: Yes
Prerequisite: Algebra I and Computer Systems Technology I (formerly IT Essentials I) with a grade of “A” or “B” and teacher recommendation

Associated Institution: NVCC

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

Schools offering course: 8, 9

Computers Networking Hardware Operations II

Grade: 11; Semester II  Credit: 0.5
Weighted: Yes (1.0W)  Dual Enrolled: Yes
Prerequisite: Computer Networking Hardware Operations I

Associated Institution: NVCC

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

Schools offering course: 8, 9

Computers Networking Hardware Operations III

Grade: 12; Semester I  Credit: 0.5
Weighted: Yes (1.0W)  Dual Enrolled: Yes
Prerequisite: Computer Networking Hardware Operations II

Associated Institution: NVCC

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 the Enhanced Interior Gateway Routing Protocol (EIGRP) and Open Shortest Path First (OSPF) Protocol. Hands-on exercises, including configuration, installation, and troubleshooting reinforce student learning.

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

Schools offering course: 8, 9

Computers Networking Hardware Operations IV

Grade: 12; Semester II  Credit: 0.5
Weighted: Yes (1.0W)  Dual Enrolled: Yes
Prerequisite: Computer Networking Hardware Operations III

Associated Institution: NVCC

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 Sequences: 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
Weighted: No  Dual Enrolled: No
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 Sequences:** The course above and the following course – Cosmetology II
Schools offering course: 5, 6

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**COSMETOLOGY II**

**Grade:** 12  
**Credit:** 3  
**Weighted:** No  
**Dual Enrolled:** No  
**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 Sequences:** The course above and the following course – Cosmetology I
Schools offering course: 5, 6

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**CRIMINAL JUSTICE I**

**Grades:** 11-12  
**Credit:** 1  
**Weighted:** Yes (1.0W)  
**Dual Enrolled:** Yes  
**Prerequisite:** None

Students will learn principles, techniques, and practices for pursuing careers within security and the criminal justice services system.

**CTE Sequences:** The course above and the following course – Criminal Justice II
Schools offering course: 4, 9, 10, 12

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**CRIMINAL JUSTICE II**

**Grades:** 12  
**Credit:** 1  
**Weighted:** No  
**Dual Enrolled:** Yes  
**Prerequisite:** Criminal Justice I

Students will learn principles, techniques, and practices for pursuing careers within security and the criminal justice services system.

**CTE Sequences:** The course above and the following course – Criminal Justice I
Schools offering course: 4, 9, 12

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**HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION I**

**Grades:** 11-12  
**Credit:** 2  
**Weighted:** Yes (0.5W)  
**Dual Enrolled:** Yes  
**Prerequisite:** None

Students learn to professionally install, repair, and maintain the operating conditions of heating, air-conditioning, and refrigeration systems. Students work with piping and tubing, study the principles of heat and electricity, install duct systems, and comply with EPA regulation.

**CTE Sequences:** The course above and the following course – Heating, Ventilation, Air Conditioning, and Refrigeration II
Schools offering course: 10

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**HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION II**

**Grades:** 11-12  
**Credit:** 2  
**Weighted:** Yes (0.5W)  
**Dual Enrolled:** Yes  
**Prerequisite:** None

This instructional program teaches students to professionally install, repair, and maintain the operating conditions of heating and cooling systems. Students also explore emerging technologies, EPA regulations and conservation techniques, and R-410A systems.

**CTE Sequence:** The course above and the following course: Heating, Ventilation, Air Conditioning, and Refrigeration I
School offering course: 10

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**PLUMBING I**

**Grades:** 10-12  
**Credit:** 1  
**Weighted:** No  
**Dual Enrolled:** No  
**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 Sequences:** The course above and the following course: Plumbing II, Energy and Power
School offering course: 2

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**PLUMBING II**

**Grades:** 11-12  
**Credit:** 2  
**Weighted:** No  
**Dual Enrolled:** No  
**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 Sequences:** The course above and the following course: Plumbing I, Energy and Power
School offering course: 2
TELEVISION PRODUCTION I
Grades: 10-11 Credit: 1
Weighted: No Dual Enrolled: No
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 Sequences:** The course above and any one of the following courses – Television Production II; Television Production III
School offering course: 7, 11

TELEVISION PRODUCTION II
Grades: 11-12 Credit: 2
Weighted: No Dual Enrolled: No
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 Sequences:** The course above and any one of the following courses – Television Production I; Television Production III
School offering course: 7

TELEVISION PRODUCTION III – PRACTICUM
Grade: 12 Credit: 1
Weighted: No Dual Enrolled: No
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 Sequences:** The course above and any one of the following courses – Television Production I; Television Production II
School offering course: 7

WELDING I
Grades: 10-12 Credit: 2
Weighted: Yes (0.5W) Dual Enrolled: Yes
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, including the OSHA 10 card.
**CTE Sequences:** The course above and any one of the following courses – Welding II; Welding III
School offering course: 4

WELDING II
Grades: 11-12 Credit: 2
Weighted: Yes (0.5W) Dual Enrolled: Yes
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 Sequences:** The course above and any one of the following courses – Welding I; Welding III
School offering course: 4

WELDING III
Grades: 12 Credit: 2
Weighted: Yes (0.5W) Dual Enrolled: Yes
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 Sequences:** The course above and any one of the following courses – Welding I; Welding II
School offering course: 4

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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
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<th>PWCS CTE Course</th>
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<td>Intro to Automotive Shop Practices, AND</td>
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<td>Automotive Braking Systems, AND</td>
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<td>Personal Computer Hardware &amp; Troubleshooting</td>
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<td>Survey of Criminal Justice AND</td>
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Graduation requirements are located in the “General Information” section.

<table>
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<tr>
<th>Required Courses</th>
<th>Approved Substitutes(s)</th>
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| English 9                 | • Pre-Advanced Placement English 9  
• IGCSE English 9          |
|                           | • Pre-IB Diploma Programme English 9                                                   |
| English 10                | • Pre-Advanced Placement English 10  
• IGCSE English 10          |
|                           | • Pre-IB Diploma Programme English 10                                                  |
| English 11 (can provide 2 verified credits, one for reading and one for writing) | • Advanced Placement English Language and Composition – V, W  
• AICE English Language and Composition – V, W  
• IB English I – V, W |
| English 12                | • Advanced Placement Literature and Composition – W  
• AICE English Literature – W  
• IB English II – W  
• Dual Enrollment English 12 (NVCC Eng 111-112) |

Courses indicating a “V” have an end-of-course state SOL test and offer the possibility of a verified unit of credit. Courses indicating a “W” offer the possibility of weighted credit if the student successfully completes the course with a grade of “C” or higher and fulfills all required external assessments.
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 American literature, history, and culture. 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. Narrative, analytical, expository, technical, and persuasive compositions reinforce grammar and literature skills. Students develop an independent reading program. Students refine research skills by completing a documented paper addressing a question, problem or issue.

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

PRE-AP ENGLISH 9
Grade: 9
Credit: 1
Prerequisite: Successful completion of Grade 8 and interest in advanced study
Students meet all objectives of English 9 in this accelerated program by developing critical thinking skills through extensive reading and writing in a variety of genres and forms. Emphasis is placed on developing an awareness of the connection between life and literature. Grammar is studied in conjunction with both reading and writing; vocabulary skills are developed through an intense study of Greek and Latin roots; oral skills are practiced through speeches, oral presentations, and group work skills are expanded. 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.

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 or a grade of B or better in English 9, student interest in advanced study, and teacher recommendation
Students participate in an accelerated program while meeting all the objectives of grade 10. They critically analyze a wide variety of genres and forms through extensive readings and writings which are focused on developing interpretive skills while increasing complexity and sophistication. Grammar and vocabulary studies support the reading and writing levels. Oral and research skills are expanded to develop articulation and effectiveness. 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.

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 needs and 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 writings concerning fiction and poetry are 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

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

ADVANCED PLACEMENT LITERATURE AND COMPOSITION
Grade: 12 Credit: 1
Prerequisite: Successful completion of AP English 11 or English 11 with a 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 needs and 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

AICE ENGLISH LANGUAGE AND COMPOSITION (AS)
Grade: 12 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

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 LITERATURE (AS)
Grade: 11 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 for 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

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

Cambridge Program Course Sequence
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

IB ENGLISH I LITERATURE (HL)

Grade: 11  Credit: 1
Prerequisite: Successful completion of Pre-IBDP 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 International Baccalaureate 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 International Baccalaureate Diploma or Certificate.

Schools offering course: 2, 5

PRE-IB DIPLOMA PROGRAMME ENGLISH 9

Grade: 9  Credit: 1
Prerequisite: Successful completion of Grade 8 and interest in advanced study

Pre-IBDP English 9 prepares students planning to enroll in the International Baccalaureate 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

PRE-IB DIPLOMA PROGRAMME ENGLISH 10

Grade: 10  Credit: 1
Prerequisite: Successful completion of Pre-IBDP English 9 or a grade of B or better in English 9, student interest in advanced study, and teacher recommendation

Pre-IBDP English 10 prepares students planning to enroll in International Baccalaureate 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

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 International Baccalaureate Diploma or Certificate and may qualify for advanced standing in college and/or college credit.

Schools offering course: 2, 5

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 International Baccalaureate Diploma or Certificate and may qualify for advanced standing in college and/or college credit.

Schools offering course: 2, 5
The Pre-IBDP 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, 5, 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.

DUAL ENROLLMENT ENGLISH 12

Both ENG 111 and ENG 112 must 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.

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.
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

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 except 6, 9, 8

ENRICHMENT IN SPEECH COMMUNICATION

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 6, 9, 8

GLOBAL CONNECTIONS IN MULTICULTURAL LITERATURE

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, 10

PSAT – SAT VERBAL-MATH PREPARATION CLASS

Students study and practice the skills necessary for improving scores on the PSAT/SAT tests.

Schools offering course: 4

READING IMPROVEMENT

Students develop and reinforce basic reading below grade level. They learn techniques applicable to content reading and they develop word analysis and comprehension skills.

Schools offering course: 9

ENGLISH 9 SEMINAR

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, 6, 7, 10

Creative Writing program begins 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 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, scriptwriting, 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
Grade: 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.
School offering course: 12

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.
School 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.
School 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.
School offering course: 12

ADVANCED CREATIVE WRITING WORKSHOP AND SEMINAR
Grades: 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.
School offering course: 12
ENGLISH LEARNER (EL) PROGRAMS

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

ENGLISH FOR ACADEMIC PURPOSES

Grades: 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

Grade 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 school 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.

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.

**ELD or SI Courses Offer 1 Credit**

**ELD OR SI ENGLISH 9**  
Schools offering course: 2, 3, 4, 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, 6, 7, 9, 10, 11, 12

**ELD OR SI BIOLOGY**  
Schools offering course: 2, 3, 4, 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 GEOLGY**  
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, 6, 9, 10, 12

**ELD OR SI GEOMETRY**  
Schools offering course: 2, 3, 4, 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)**
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 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

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

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

DANCE IV ARTIST
Grades: 9-12  Credit: 1 per year
Prerequisite: Recommendation from the Program Coordinator

The content of “Artist” is designed 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

DANCE COMPOSITION AND REPETORY
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
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

ORCHESTRA
INTERMEDIATE ORCHESTRA
ADVANCED ORCHESTRA
ORCHESTRA ENSEMBLE
CHAMBER ENSEMBLE
PRE-IB DIPLOMA 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 Pre-IBDP 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)

**MUSIC THEORY**

**MUSIC THEORY I**

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 THEORY II**

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

**CHOIR**

**VARSITY CHOIR**

**ADVANCED VARSITY CHOIR**

**CONCERT CHOIR**

**MEN’S CHOIR**

**TREBLE CHOIR**

**VOCAL ENSEMBLE**

**CFPA MEN’S VARSITY CHOIR**

**CFPA CONCERT CHOIR**

**CFPA WOMEN’S CAMERATA**

**CFPA COLGAN CHAMBER ENSEMBLE**

**PRE-IB DIPLOMA PROGRAMME CHOIR**

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 Pre-IBDP 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 WSHS, 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 classes target audience is incoming ninth 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 girls 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.

School offering course: 12
## Band

**Ninth Grade Band**
- Band/Brass
- Band/Percussion
- Band/Woodwind

**Intermediate Band**
- Percussion Ensemble

**Jazz Band** (36 weeks – 1 credit) (18 weeks – 0.5 Credit)

**CFPA Symphonic Band**
- CFPA Concert Band
- CFPA Percussion Ensemble
- CFPA Wind Symphony

### Pre-IB Diploma Programme Band

**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 Pre-IBDP band will incorporate global contexts, strategies, and assessment criteria.

Schools offering course: 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
(IBM 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

### 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: 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: 1, 12

### 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

### 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 International Baccalaureate 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 International Baccalaureate 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.
School offering course: 2

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.
School 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 responsively 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.
School offering course: 4

THEATRE ELECTIVE COURSE SEQUENCE

THEATRE I: INTRODUCTION TO THEATRE
Grade: 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
Grades: 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, 11
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.

School 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.

School offering course: 12

ART IV
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.

Prerequisite: A grade of “C” or better in Art III

Schools offering course: All except 7, 8, 9 & 12

ART V
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.

Grades: 10-12 Credit: 1 (Year Course – 36 weeks: 1 credit)
Prerequisite: Successful completion of the previous course with a “C” or better and a teacher recommendation

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: All except at schools 7, 8, 11
School 9: Art V must be taken concurrently with AP Studio Art

**PRE-AP ART PORTFOLIO PREPARATION**

**Grades:** 10-12  
**Credit:** 1  
**Prerequisite:** Successful completion of Art I and II or 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 with “B” or better and teacher recommendation. 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.

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: 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

**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: 5, 8, 9

**SCIENTIFIC ILLUSTRATION**

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

Scientific Illustration is an alternative class to the Art I Elective, and will meet the SOL’s for Art I while using scientific material as a subject and source of inspiration. The basic elements of art and the principles of design will be studied. This course will specifically meet the needs of specialty program students and other students who indicate an interest in studying art through the lens of science. The course focuses on the development of artistic skills, understanding of creative techniques, aesthetics awareness, and historical and cultural knowledge. A cumulative portfolio of selected works of art from each level will demonstrate the students’ individual growth and reflect a broad range of techniques, media, and styles all reflecting ethical practices.

Schools offering course: 3, 10
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, 6, 7, 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, 6, 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: Each school’s offerings are determined by enrollment
Schools offering course: 6, 11

IGCSE ART AND DESIGN
Grades: 10-12 Credit: 1
Prerequisite: A grade of “B” or better in Art I and teacher recommendation

IGCSE Art & Design stimulates and develops a student’s observational skills, imagination, conceptual thinking, and analytical ability. It increases the student’s awareness of artistic contributions of a variety of cultures and his/her understanding of the role of visual arts in history. The course enriches the student’s own appreciation of the many visual forms of personal expression and encourages his/her efforts to visually represent the world that he/she observes. Course content includes drawing, painting, graphics, photography, textiles, and 3-D studies. Successful completion of the end of course exam will result in an IGCSE or an ICE certificate.

Schools offering course: 1, 4

AICE ART AND DESIGN
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Art II or IGCSE Art with a “B” or better and teacher recommendation

AICE Art & Design encompasses a broad range of activities to allow students to pursue personal interests and challenges in the field of visual communication. The course is designed to develop a student’s ability to record from direct observation and personal experience, to communicate his/her observations and experiences through disciplined approaches, and to use experimentation and imagination in creative ways. The student will demonstrate an ability to identify, research, evaluate and solve problems of design and visual communication. The student will learn to use relevant vocabulary to make critical judgments of the subject matter and to demonstrate an appreciation for various cultural
influences in the field of Art & Design. Successful completion of this course will result in an AS or A-Level certificate and can contribute toward an AICE Diploma.

Schools offering course: 1, 4

**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 VISUAL ARTS (SLA OR SLB)**

**Grade: 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 International Baccalaureate 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 International Baccalaureate 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 International Baccalaureate 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 GRAPHIC DESIGN
Grades: 9-12
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
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 COMPUTER GRAPHICS II
Grades: 11-12
Prerequisite: Successful completion of IT Computer Graphics I with a “B” or better, and teacher recommendation
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

IT MULTIMEDIA SOFTWARE DESIGN AND DEVELOPMENT I
ACADEMY OF MULTIMEDIA I
Grades: 11-12
Prerequisite: Computer Graphics I, with a “B” average, and teacher recommendation
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
Prerequisite: Academy of Multimedia I, with a “B” average, and teacher recommendation
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
Prerequisite: Completion of IT Computer Graphics I with a “B” or better and teacher recommendation. 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, 9
FOREIGN (WORLD) LANGUAGE

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

MODERN ROMAN ALPHABET

FOREIGN/WORLD LANGUAGES

FRENCH I
GERMAN I
ITALIAN I
SPANISH I
Grades: 9-12
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
Italian I: 2, 4, 6, 7, 10
Spanish I: All

FRENCH II
GERMAN II
ITALIAN II
SPANISH II
Grades: 9-12
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
Italian II: 2, 4, 6, 7
Spanish II: All

ADVANCED FRENCH II
ADVANCED SPANISH II
Grades: 9
Prerequisite: Level I equivalent, and teacher recommendation

Advanced French or Spanish II is an accelerated program of study for grade 9 students. 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 this course.

School offering course: 9

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: 4, 6, 7, 8, 12
Italian III: 2, 6, 7
Spanish III: All

FRENCH IV
GERMAN IV
ITALIAN IV
SPANISH IV
Grades: 9-12
Credit: 1
Prerequisite: Level III, Pre-AP III, or Spanish for Native/Heritage 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 foreign culture through the study of current and historical events and literature.

Schools offering courses:
French IV: 1, 3, 4, 6, 7, 8, 9, 10, 12
German IV: 6, 7, 8, 12
Italian IV: 6, 7
Spanish IV: 1, 3, 4, 6, 7, 8, 9, 10, 12
**FRENCH V**  
**GERMAN V**  
**SPANISH V**  
*Grades: 10-12  Credit: 1*  
**Prerequisite:** Level IV, Pre-AP IV or Spanish for native/heritage  
**Speakers III 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, 7, 9, 10  
German V: 7  
Spanish V: 1, 4, 7, 9, 10

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**MODERN NON-ROMAN ALPHABET FOREIGN/WORLD LANGUAGES**

**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: 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.

School offering course: 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: 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: 2, 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.

School 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 Hangeul 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, interpersonally 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

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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  
99 – Virtual
KOREAN III
Grades 9-12
Credit: 1
Prerequisite: 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.
School offering course: 8

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, 10, 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 videotaping 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, 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 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 videotaping 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, 11, 12

AMERICAN SIGN LANGUAGE IV
Grades: 9-12
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
**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, 5, 7, 9, 10

**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, 5, 7, 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: 1, 3, 4, 5, 7, 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 peculiar to authors read and to the varying connotations of familiar words.

Schools offering course: 1, 3, 7, 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, Caeser, 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: 1, 3, 9

**SPANISH NATIVE/HERITAGE SPEAKERS PROGRAM**

Spanish for Native/Heritage Speakers (SNS) 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 native speakers sequence having started the traditional Spanish courses for non-native 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 Natives 1.

Students may earn a foreign 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 speakers of the language.

**SPANISH FOR NATIVE/HERITAGE 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 fill the gap 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, 11, 12

SPANISH FOR NATIVE/HERITAGE SPEAKERS II – INTERMEDIATE LEVEL

Grades: 9-12
Prerequisite: Successful completion of Spanish for Native/Heritage Speakers I 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. 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 fill the gap 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: 2, 3, 4, 5, 6, 7, 8, 9, 10, 12

SPANISH FOR NATIVE/HERITAGE SPEAKERS III – ADVANCED LEVEL

Grades: 11-12
Prerequisite: Successful completion of Spanish for Native/Heritage 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 fill the gap 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: 2, 4, 5, 6, 7, 8, 9, 10, 12
ADVANCED PLACEMENT LATIN VERGIL
Grades: 10-12 Credit: 1
Prerequisite: Successful completion of Pre-AP Latin Language III or IV, Level IV, Level V, or Latin V and teacher recommendation

The Advanced Placement 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 sight translation passages on the Advanced Placement Examination. Students are required to take the AP Language Examination which is administered in May.

School offering course: 3

ADVANCED PLACEMENT SPANISH LITERATURE
Grades: 10-12 Credit: 1
Prerequisite: Successful completion of Pre-AP IV, Level IV, Level V or Advanced Placement Language and teacher recommendation

The Advanced Placement 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 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: 3, 6, 7, 12

IGCSE SPANISH 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: 1, 4

IGCSE ITALIAN III
Grades: 10-12 Credit: 1
Prerequisite: Latin I and Latin II (or equivalency test), and teacher recommendation

Students will further synthesize the skills already mastered, will complete the corpus of grammar, and will study specialized syntactic constructions. This course will provide for translation practice, reading comprehension, an introduction to rhetorical devices, and both Latin and English vocabulary expansion through study of un-adapted Latin selections. The student develops an
understanding of the relationship between the works and their social, economic, political, and historical contexts. Assessment will include an external student examination and course work evaluations by the instructor.

School offering course: 1

**AICE CLASSICAL STUDIES I**

Grades: 11-12  
Credit: 1  
Prerequisite: None

This course develops the idea that a multi-disciplinary approach of study combining classical literature, art history, history, science, archeology, and others, leads to an understanding of the relationship between intellectual disciplines. Students are exposed to the course material, including original sources, in a variety of ways, and they gain practical experience in analyzing, interpreting, organizing, and presenting the connections they make in a broader context of the contemporary world.

School offering course: 1

**AICE LATIN V**

Grade: 12  
Credit: 1  
Prerequisite: Successful completion of Level IV and teacher recommendation

The objectives of this course are based on an accelerated, international curriculum. Students will demonstrate a capacity to draw on the target language source materials in order to produce a piece of composition in Latin 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 and Advanced Placement credit in language.

School offering course: 1

**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 and Advanced Placement credit in Language.

Schools offering courses:  
French: 1, 4  
Spanish: 1, 4

**AICE FRENCH V (A) LITERATURE**  
**AICE GERMAN 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

**INTERNATIONAL BACCALAUREATE PROGRAM**

**PRE-IB DIPLOMA PROGRAMME FRENCH II**  
**PRE-IB DIPLOMA PROGRAMME ITALIAN II**  
**PRE-IB DIPLOMA PROGRAMME SPANISH II**

Grades: 9-10  
Credit: 1  
Prerequisite: French I, Italian 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, Italian, 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 Foreign Language strand of courses. The integration of the Pre-IBDP 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 Pre-IBDP French, Pre-IBDP Italian III, or Spanish III course.

Schools offering course:  
French: Pre-IBDP French III, and Spanish: 2, 5  
Italian: 2

**PRE-IB DIPLOMA PROGRAMME FRENCH III**  
**PRE-IB DIPLOMA PROGRAMME ITALIAN III**  
**PRE-IB DIPLOMA PROGRAMME SPANISH III**

Grades: 9-10  
Credit: 1  
Prerequisite: French II, Italian 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, Italian, 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 Foreign 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, Italian or Spanish IV course.

Schools offering course:
French and Spanish: 2, 5
Italian: 2

**IB AB INITIO FRENCH I**
**IB AB INITIO ITALIAN I**
**IB AB INITIO SPANISH I**

*Grade: 11  Credit: 1*

**Prerequisite:** Student must have a fourth or fifth year of another foreign language 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 International Baccalaureate 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:
French and Spanish: 2, 5
Italian: 2

**IB AB INITIO FRENCH II**
**IB AB INITIO ITALIAN II**
**IB AB INITIO SPANISH II**

*Grade: 11-12  Credit: 1*

**Prerequisite:** Successful completion of IB AB Initio French I, Italian 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 International Baccalaureate AB Initio Exam.

Schools offering course:
French and Spanish: 2, 5
Italian: 2

**IB FRENCH IV SL**
**IB ITALIAN IV SL**
**IB SPANISH IV SL**

*Grades: 11-12  Credit: 1*

**Prerequisite:** Successful completion of Pre-IBDP Level III; can take in grade 10 if started sequence in middle school

IB Foreign 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 International Baccalaureate Language B Exam. An introduction to the International Baccalaureate Language B Program will be an integral part of this class.

Schools offering course:
French and Spanish: 2, 5
Italian: 2

**IB FRENCH V SL**
**IB ITALIAN V SL**
**IB SPANISH V SL**

*Grade: 12  Credit: 1*

**Prerequisite:** Successful completion of IB Level IV

This is an advanced level course designed to strengthen fluency and proficiency in both oral and written foreign languages and to prepare students for the International Baccalaureate 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:
French and Spanish: 2, 5
Italian: 2

**IB FRENCH IV HL**
**IB ITALIAN IV HL**
**IB SPANISH IV HL**

*Grades: 11  Credit: 1*

**Prerequisite:** Three years of French/Italian/Spanish or equivalency or test and permission of instructor. IB French/Italian/Spanish III is preferred immediately prior to this course

IB Spanish, Italian, or French IV HL is the first segment of a two-year series that prepares students to take the IB French, Italian, 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:
French and Spanish: 2, 5
Italian: 2

**IB FRENCH V HL**
**IB SPANISH V HL**

*Grades: 12  Credit: 1*

**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**

*Grades: 11-12*  
*Prerequisite: IB Native/Heritage 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 fill the gap 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 A1 HL LANGUAGE AND LITERATURE**

*Grades: 11-12*  
*Credit: 1*  
*Prerequisite: IB Spanish A1 SL*

The IB Spanish for Fluent Speakers HL course is a two-year course of study which meets the requirements of the IB program. Students focus on the study of language and literature according to the prescribed IB guidelines. At the same time students further develop their creative and critical thinking abilities, increasing skills and knowledge necessary for them to be contributing world citizens and life-long learners. This course prepares students for the required Higher Level IB examination to be taken at the end of the senior year. Successful completion of this course and an additional Language A course qualifies the student for the Bilingual IB Diploma.

School offering course: 2
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

AICE THINKING SKILLS (AL LEVEL)

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.

Schools offering course: 1, 4

LEADERSHIP SEMINAR
Grades: 10-12  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, 5, 6, 7, 8, 10, 11, 12

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.

School offering course: 3, 6, 7, 8, 9, 11, 12

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.

School offering course: 3, 6, 7, 8, 9, 11

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
Grade: 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

Graduation requirements are located in the “General Information” section.
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 tenth grade gifted education seminar program and concurrent enrollment in an Advanced Placement 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.

School offering course: 3

GIFTED EDUCATION MULTI-DISCIPLINARY SEMINAR (GEMS)

Grade: 11 Credit: 1
Prerequisite: Successful completion of the tenth grade gifted education seminar program and concurrent enrollment in an Advanced Placement 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.

School 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 Advanced Placement 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.

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 Advanced Placement Scholar

The multi-disciplinary seminar course may replace the seminar program for identified gifted students in grade twelve. It may also serve as a capstone course for Advanced Placement Scholars. 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 International Baccalaureate 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 Advance Placement 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.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Approved Substitutes(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and Physical Education I</td>
<td>None</td>
</tr>
<tr>
<td>Health and Physical Education II</td>
<td>None</td>
</tr>
</tbody>
</table>

REQUIRED COURSE SEQUENCE FOR PHYSICAL EDUCATION

HEALTH AND PHYSICAL EDUCATION I
PRE-IB DIPLOMA PROGRAMME PE I
Grades: 9-12 Credit: 1
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. The curriculum for Pre-IBDP physical education will incorporate global contexts, strategies and criteria.
Schools offering course: All (IB is at schools 2, 5 only)

HEALTH, PHYSICAL EDUCATION, AND CLASSROOM DRIVER EDUCATION II
PRE-IB DIPLOMA PROGRAMME HPE II
Grades: 9-12 Credit: 1
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. The curriculum for Pre-IBDP physical education will incorporate global contexts, strategies and criteria.
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 (IB is at schools 2, 5 only)

ELECTIVE COURSE SEQUENCE FOR PHYSICAL EDUCATION

DRIVER EDUCATION (IN-CAR)
Grades: 10-12 Credit: 0
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 tenth grade Driver Education Program.
Schools offering course: All

PHYSICAL EDUCATION ASSISTANT
Grades: 11-12 Credit: 0.5
Prerequisite: Successful completion of Health and Physical Education I and II with a “B” average or better and approval of the department chairperson and the teacher being assisted
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, 6, 7, 8, 11, 12

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.

School offering course: 4

ADVANCED PHYSICAL EDUCATION – PERSONAL FITNESS
Grades: 11-12
Credit: 1
Prerequisite: Successful completion of Health and Physical Education I and II with a “C” or better and/or recommendation from the Department Chair. Students who choose to enroll in a second year of an Advanced Physical Education Course must have completed the first year of Advanced Physical Education with a “B” or better

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 physical 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 (ADV) 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 with a “C” or better and/or recommendation from the Department Chair. Students who choose to enroll in a second year of an Advanced Physical Education Course must have completed the first year of Advanced Physical Education with a “B” or better

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

ADVANCED PREVENTION AND CARE OF ATHLETIC INJURIES
Grades 11-12
Credit: 0.5
Prerequisite: Successful completion of Sports Medicine I and II

This course is offered as an extension of Athletic Training I and II. This partial credit course requires all of its instructional time after normal school hours in an athletic training practicum. A minimum of 100 hours must be completed throughout the year at a minimum of 4 hours each week and 25 per quarter. The student will be required to work one semester with players and coaches, putting to practical use the skills of prevention, evaluation and management of athletic injuries. Interns will improve athletic training skill level as well as the communication and personal skills necessary to be an athletic trainer.

Schools offering course: 1, 2, 3, 5, 7, 8, 11
### MATHEMATICS

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

<table>
<thead>
<tr>
<th>Courses</th>
<th>Approved Substitutes(s)</th>
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</table>
| Algebra I (V)                                | • Algebra I, Part 1 and Part 2 (V)  
• Pre-AP Algebra I (V)  
• Pre-IBDP Algebra (V) |
| Geometry (V)                                 | • Geometry, Part 1 and Part 2 (V)  
• Pre-AP Geometry (V)  
• Pre-IBDP Geometry (V)  
• IGCSE Geometry (V) |
| Algebra, Functions, and Data Analysis        |                                                                                       |
| Algebra II (V)                               | • Pre-IBDP Algebra II (V)  
• Pre-AP Algebra II/Trigonometry (V, 0.5W)  
• Pre-IBDP Algebra II/Trigonometry (V, 0.5W)  
• IGCSE Algebra II/Trigonometry (V, 0.5W) |
| Advanced Mathematics                         |                                                                                       |
| Functions/Trigonometry (W) or               | • IB Mathematical Studies SL (W)  
• IB Mathematics I SL (W), IB Mathematics I HL (W)  
• AICE Mathematics I (W)  
• GS Pre-Calculus Fall and GS Pre-Calculus Spring (W) |
| Functions/Analytic Geometry (W)              |                                                                                       |
| AP Calculus AB (W) or AP Calculus BC (W)     | • IB Mathematics II SL (W), IB Mathematics II HL (W)  
• AICE Mathematics II (W)  
• AICE Mechanics (Level A)  
• GS Calculus I, Parts A and B (W)  
• GS Calculus Fall and GS Calculus Spring (W) |
| Multivariable Calculus                       | • Dual Enrollment Multivariable Calculus (NVCC MTH 265)                                |
| Linear Algebra                               | • Dual Enrollment Linear Algebra (NVCC MTH 266)                                       |
| Trigonometry (0.5 credit)                    |                                                                                       |
| Discrete Mathematics (0.5 credit)            |                                                                                       |
| Probability / Statistics (0.5 credit)        |                                                                                       |
| Computer Mathematics                         | • Advanced Computer Mathematics (0.5W)  
• Computer Science |
| AP Statistics (W)                            |                                                                                       |
| AP Computer Science A (W) or Computer Science: Data Structures and Algorithms (W) | • IB Computer Science SL (W), IB Computer Science HL (W)  
• AICE Computing (W) |
| Advanced Computer Studies                    |                                                                                       |
| AP Computer Science Principles               |                                                                                       |

Courses indicating a “V” have an end-of-course SOL test and offer the possibility of a verified unit of credit. Courses indicating a “W” offer the possibility of a weighted credit if the student earns a “C” or better in the course. Those indicating “0.5W” offer the possibility of a 0.5 weighted credit if the student earns a “C” or better in course.
<table>
<thead>
<tr>
<th>Grade</th>
<th>4 High School (HS) Math Credits</th>
<th>Functions/Analytic Geometry(\dagger) or AP Statistics*</th>
<th>5 HS Math Credits</th>
<th>AP Calculus BC* or AP Calculus AB* or AP Statistics*</th>
<th>AP Computer Science* or AP Calculus BC* or AP Calculus AB* or AP Statistics*</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>4 High School (HS) Math Credits</td>
<td>Functions/Trig(\dagger) or AP Statistics*</td>
<td>5 HS Math Credits</td>
<td>AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
<td>AP Computer Science* or AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
</tr>
<tr>
<td>11</td>
<td>11 Algebra II, Algebra II SOL Test</td>
<td>Pre-AP Algebra II/Trig or Algebra II, Algebra II SOL Test</td>
<td>Functions/Analytic Geometry(\dagger) or AP Statistics*</td>
<td>AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
<td>AP Computer Science* or AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
</tr>
<tr>
<td>10</td>
<td>10 Geometry, Pre-AP Geometry, or Geometry SOL Test</td>
<td>Pre-AP Geometry or Geometry SOL Test</td>
<td>Functions/Analytic Geometry(\dagger) or AP Statistics*</td>
<td>AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
<td>AP Computer Science* or AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
</tr>
<tr>
<td>9</td>
<td>9 Algebra I, Algebra I SOL Test</td>
<td>Pre-AP Algebra I or Algebra I, Algebra I SOL Test</td>
<td>Functions/Analytic Geometry(\dagger) or AP Statistics*</td>
<td>AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
<td>AP Computer Science* or AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
</tr>
<tr>
<td>8</td>
<td>8 Math 8 Pre-Algebra, Math 8 SOL Test</td>
<td>Pre-AP Algebra I or Algebra I, Algebra I SOL Test</td>
<td>Functions/Analytic Geometry(\dagger) or AP Statistics*</td>
<td>AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
<td>AP Computer Science* or AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
</tr>
<tr>
<td>7</td>
<td>7 Math 7, Math 7 SOL Test</td>
<td>Pre-AP Algebra I or Algebra I, Algebra I SOL Test</td>
<td>Pre-AP Geometry, Geometry SOL Test</td>
<td>AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
<td>AP Computer Science* or AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
</tr>
<tr>
<td>6</td>
<td>6 Math 6, Math 6 SOL Test</td>
<td>Pre-AP Algebra I or Algebra I, Algebra I SOL Test</td>
<td>Math 7 Extended, half of Grade 7 and all of Grade 8, Math 8 SOL Test</td>
<td>Pre-AP Algebra I, Algebra I SOL Test</td>
<td>AP Calculus BC* or AP Calculus AB* or AP Statistics*</td>
</tr>
</tbody>
</table>

**Many other sequences are possible with additional math electives, such as Trigonometry; Discrete Math; and Probability/Statistics (all semester courses); Computer Mathematics; and AP Computer Science. Students in Cambridge or International Baccalaureate Specialty Programs take comparable courses. These courses offer possible college credits w/a qualifying score on external exams and college acceptance. These courses are Pre-Calculus Courses.**

Note: Multiple courses at a grade level are listed from lower level to higher level course w/higher level on top.
### PWCS Secondary Mathematics Course Sequence Examples Leading to a STANDARD Diploma

<table>
<thead>
<tr>
<th>Grade</th>
<th>3 High School (HS) Math Credits</th>
<th>Grade</th>
<th>4 HS Math Credits**</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Algebra, Functions, and Data Analysis</td>
<td>12</td>
<td>Functions/Trig or AP Statistics* or Advanced Math</td>
</tr>
<tr>
<td>11</td>
<td>Geometry</td>
<td>11</td>
<td>Geometry</td>
</tr>
<tr>
<td>10</td>
<td>Algebra I or Algebra I, Part II Algebra I SOL Test</td>
<td>10</td>
<td>Geometry</td>
</tr>
<tr>
<td>9</td>
<td>Algebra I, Part I a math elective (not math credit) that covers half of Algebra I curriculum.</td>
<td>9</td>
<td>Algebra I</td>
</tr>
<tr>
<td>8</td>
<td>Math 8 Pre-Algebra covers 8th grade standards Math 8 SOL Test</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Math 7 covers 7th grade standards Math 7 SOL Test</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Math 6 covers 6th grade standards Math 6 SOL Test</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

*The Standard Diploma requires three math credits as specified in the Graduation Requirements. Students earning a Standard Diploma are encouraged to take mathematics all four years of high school. Many other sequences are possible with additional math electives, such as Trigonometry; Discrete Math; and Probability/Statistics (all semester courses); Advanced Computer Math; and AP Computer Science.

**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 course with the higher level on top. 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.
### 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*</td>
<td>AICE Math II*</td>
<td>AICE Mechanics*</td>
</tr>
<tr>
<td></td>
<td>or Functions/Trig†</td>
<td>AICE Mechanics*</td>
<td>(Level A)</td>
</tr>
<tr>
<td></td>
<td>or Advanced Math</td>
<td>or Functions/Trig†</td>
<td>or AP Calculus AB*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>or Functions/Trig†</td>
<td>or AP Statistics*</td>
</tr>
<tr>
<td>11</td>
<td>Algebra II SOL Test</td>
<td>IGSCE Algebra II/Trig</td>
<td>AICE Math I*</td>
</tr>
<tr>
<td></td>
<td>or Algebra II</td>
<td>or Algebra II SOL Test</td>
<td>or Algebra II</td>
</tr>
<tr>
<td></td>
<td>IGCSE Functions, and Data Analysis</td>
<td>IGCSE Geometry</td>
<td>Geometry SOL Test</td>
</tr>
<tr>
<td>10</td>
<td>Geometry SOL Test</td>
<td>IGCSE Algebra II/Trig</td>
<td>IGCSE Algebra II/Trig</td>
</tr>
<tr>
<td></td>
<td>Geometry SOL Test</td>
<td>or Geometry SOL Test</td>
<td>or Algebra II SOL Test</td>
</tr>
<tr>
<td>9</td>
<td>Algebra I SOL Test</td>
<td>Pre-AP Algebra I</td>
<td>Pre-AP Geometry</td>
</tr>
<tr>
<td></td>
<td>Algebra I with Alg II extensions</td>
<td>or Algebra I SOL Test</td>
<td>includes extensions</td>
</tr>
<tr>
<td>8</td>
<td>Math 8 Pre-Algebra</td>
<td>Pre-AP Algebra I with Alg II extensions</td>
<td>Geometry SOL Test</td>
</tr>
<tr>
<td></td>
<td>covers 8th grade standards</td>
<td>or Algebra I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Math 8 SOL Test</td>
<td>Algebra I SOL Test</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Math 7</td>
<td>Math 7 Extended</td>
<td>Pre-AP Algebra I</td>
</tr>
<tr>
<td></td>
<td>covers 7th grade standards</td>
<td>half of Grade 7 and all of</td>
<td>with Alg II extensions</td>
</tr>
<tr>
<td></td>
<td>Math 7 SOL Test</td>
<td>Grade 8 Math 8 SOL Test</td>
<td>Algebra I SOL Test</td>
</tr>
<tr>
<td>6</td>
<td>Math 6</td>
<td>Math 6 Extended</td>
<td>Math 7 Extended</td>
</tr>
<tr>
<td></td>
<td>covers 6th grade standards</td>
<td>all Grade 6 and half of Grade 7</td>
<td>half of Grade 7 and all of</td>
</tr>
<tr>
<td></td>
<td>Math 6 SOL Test</td>
<td>Math 6 SOL Test</td>
<td>Grade 8 Math 8 SOL Test</td>
</tr>
</tbody>
</table>

*These courses offer possible college credits w/ a qualifying score on external exams and college acceptance.

**Many other sequences are possible with additional math electives, such as Trigonometry; Discrete Math; and Probability/Statistics (all semester courses); Computer Math; and AP Computer Science. Students in Advanced Placement or International Baccalaureate Programs take comparable courses.

† These courses are Pre-Calculus courses.

Note: Multiple courses at a grade level are listed from lower level to higher level course w/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 SL I or AP Statistics*</td>
<td>IB Math HL II* or IB Math SL II* or AP Statistics*</td>
<td>IB Math HL II* or IB Math SL II*</td>
</tr>
<tr>
<td>11</td>
<td>Algebra II SOL Test</td>
<td>IB Math HL I or Advanced Math</td>
<td>IB Math HL I or IB Math SL I</td>
</tr>
<tr>
<td>10</td>
<td>Geometry SOL Test</td>
<td>Pre-IBDP Algebra II/Sol Test or Pre-IBDP Algebra II</td>
<td>AP Statistics*</td>
</tr>
<tr>
<td>9</td>
<td>Algebra I SOL Test</td>
<td>Pre-IBDP Algebra I or Algebra I</td>
<td>Pre-IBDP Algebra II /Trig</td>
</tr>
<tr>
<td>8</td>
<td>Math 8 Pre-Algebra</td>
<td>Pre-AP Algebra I or Pre-IBDP Algebra I or Algebra I</td>
<td>Pre-AP Geometry or Pre-IBDP Geometry includes extensions</td>
</tr>
<tr>
<td>7</td>
<td>Math 7 covers 7th grade standards</td>
<td>Math 7 Extended half of 7 and all of 8 Math 8 SOL Test</td>
<td>Pre-AP Algebra I or Pre-IBDP Algebra I</td>
</tr>
<tr>
<td>6</td>
<td>Math 6 covers 6th grade standards</td>
<td>Math 6 Extended all of 6 and half of 7 Math 6 SOL Test</td>
<td>Math 7 Extended half of 7 and all of 8 Math 8 SOL Test</td>
</tr>
</tbody>
</table>

* These courses offer possible college credits w/a qualifying score on external exams and college acceptance.

** Many other sequences are possible with additional math electives, such as Trigonometry; Discrete Math; and Probability/Statistics (all semester courses); Computer Math; and AP Computer Science. Students in Cambridge or Specialty Programs with Advanced Placement courses take comparable courses.

Note: Multiple courses at a grade level are listed from lower level to higher level course w/higher level on top.
PWCS Secondary Mathematics Course Sequence Examples
Leading to an ADVANCED Studies Diploma
The Governor’s School @ Innovation Park (Grades 11 and 12)

Grade 12
5 High School (HS) Math Credits and 6-10 George Mason Credits
GS Calculus Spring (GMU Math 116)
and GS Calculus I Part B* (GMU Math 124)

Grade 12
6 HS Math Credits and 6-13 George Mason Credits
GS Multivar. Calculus* (GMU Math 215)
and GS Calculus Spring (GMU Math 116)

Grade 12
6 HS Math Credits and 6-14 George Mason Credits
GS Linear Alg. Spring* (GMU Math 203)
and GS Multivar. Calculus* (GMU Math 215)

Grade 11
GS Calculus I, Part A* (GMU Math 123)
and GS PreCalculus Fall (GMU Math 105)

Grade 11
GS Calculus I Part B* (GMU Math 124)
and GS Calculus I, Part A* (GMU Math 123)

Grade 11
GS Calculus Spring (GMU Math 116)
and GS Calculus Fall* (GMU Math 115)

Grade 10
Pre-AP Algebra II/Trig
Functions/Analytic Geometry †
Algebra II SOL Test
Functions/Trig

Grade 10
Pre-AP Geometry
includes extensions
Geometry SOL Test

Grade 9
Pre-AP Algebra I
with Alg II extensions
Algebra I SOL Test

Grade 9
Pre-AP Algebra II/Trig
Geometry SOL Test

Grade 9
Pre-AP Geometry
includes extensions
Geometry SOL Test

Grade 8
Pre-AP Algebra I
include Alg II extensions
Algebra I SOL Test

Grade 8
Pre-AP Algebra II/Trig

Grade 8
Pre-AP Geometry
includes extensions
Geometry SOL Test

Grade 7
Math 7 Extended
half of Grade 7 and all of Grade 8
Math 8 SOL Test

Grade 7
Math 7 Extended
half of Grade 7 and all of Grade 8
Math 8 SOL Test

Grade 6
Math 6 Extended
all Grade 6 and half of Grade 7
Math 6 SOL Test

The Governor’s School (GS) Math Placement test will determine junior year math placement.

* Courses are also offered as dual enrollment. The school system will pay GMU tuition for one course during the junior year and two courses in the senior year. Two of the three courses paid for must be math.

† These courses are Pre-Calculus courses with Functions /Analytic Geometry being the most advanced. The Pre-Governor School provides the option to concurrently enroll in Pre-AP Geometry and Algebra II.

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)

Grade 12
- 5 High School (HS) Math Credits
  - AP Calculus BC (year)
  - or
  - AP Calculus AB (year)

Grade 11
- TJ Math 5: Precalculus (Spring) and
  - TJ Math 4: Trigonometry (Fall)
- AP Calculus BC (year) or
  - AP Calculus AB (year)

Grade 10
- TJ Math 3: Alg II SOL Test (Spring) and
  - TJ Math 2: Coordinate Geom Geometry SOL Test (Fall)
- TJ Math 5: Precalculus (Spring) and
  - TJ Math 4: Trigonometry (Fall)

Grade 9
- TJ Math 1 (Spring): Euclidean Geometry and
  - TJ Research Statistics 1 (Fall)

Grade 8
- Pre-AP Algebra I with Alg II extensions and Algebra I SOL Test
- Pre-AP Geometry with extensions Geometry SOL Test

Grade 7
- Math 7 Extended: half of Grade 7 and all Grade 8 Math 8 SOL Test
- Pre-AP Algebra I with Alg II extensions and Algebra I SOL Test

Grade 6
- Math 6 Extended: all Grade 6 and half of Grade 7 Math 6 SOL Test
- Math 7 Extended: half of Grade 7 and all Grade 8 Math 8 SOL Test

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.
**Algebra I, Parts 1 and 2**

Grades: 9-10  
Credits: 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.

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. Students must take the Virginia SOL test for Geometry during the Geometry, Part 2 course.

School offering course: All

**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.

Students must take the Virginia SOL test for Geometry.  
Schools offering course: All

**Algebra, Functions, and Data Analysis**

Grades: 11-12  
Credit: 1  
Prerequisite: Algebra I and Geometry

This course is designed for students who have completed Algebra I and Geometry but need time to further develop algebraic and geometric concepts 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.

Students must take the Virginia SOL test for Algebra II. Algebra II is required for Advanced Studies Diploma.

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
**ADVANCED MATHEMATICS**

Grades: 11-12  
Prerequisite: Algebra II  
Credit: 1

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

**FUNCTIONS – TRIGONOMETRY**

Grades: 10-12  
Prerequisite: Algebra II and teacher recommendation  
Credit: 1

Functions/Trigonometry is a one-year preparatory course for Advanced Placement 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

**FUNCTIONS – ANALYTIC GEOMETRY**

Grades: 10-12  
Prerequisite: Algebra II / Trigonometry and teacher recommendation  
Credit: 1

Functions/Analytic Geometry is a one-year preparatory course for Advanced Placement 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

**ADVANCED PLACEMENT STATISTICS**

Grades: 11-12  
Prerequisite: Algebra II  
Credit: 1

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 Advanced Placement Statistics Examination may receive credit for a one-semester introductory college statistics course.

Schools offering course: All

**ADVANCED PLACEMENT CALCULUS AB**

Grades: 11-12  
Prerequisite: Functions/Trigonometry or Functions/Analytic Geometry and teacher recommendation  
Credit: 1

Advanced Placement 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 students receiving a qualifying score on the Advanced Placement Examination.

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

ADVANCED PLACEMENT CALCULUS BC

Grades: 11-12  Credit: 1
Prerequisite: Functions/Analytic Geometry and teacher recommendation

Advanced Placement Calculus BC is intended for students who have a thorough knowledge of analytic geometry and elementary functions. Although all of the elements of the Advanced Placement 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 Advanced Placement 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 Advanced Placement Examination.

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

IGCSE GEOMETRY

Grades: 9-10  Credit: 1
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. Students must take the Virginia SOL test for Geometry.

Schools offering course: 1, 4

IGCSE ALGEBRA II – TRIGONOMETRY

Grades: 10-11  Credit: 1
Prerequisite: 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. Students must take the Virginia SOL test for Algebra II. 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 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 an in-depth study of vectors and an introduction to differentiation and integration. Students will acquire the mathematical background necessary for further study at the AICE Mathematics II level.

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.

Schools offering course: 1, 4

AICE MECHANICS (A LEVEL)

Grades: 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.

School offering course: 4

**INTERNATIONAL BACCALAUREATE COURSES**

**PRE-IB DIPLOMA PROGRAMME ALGEBRA I**

Grade: 9  
Credit: 1  
Prerequisite: 8th grade Pre-Algebra

Pre-IBDP 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. Students must take the Virginia SOL test for Algebra I.

Schools offering course: 2, 5

**PRE-IB DIPLOMA PROGRAMME GEOMETRY**

Grades: 9-10  
Credit: 1  
Prerequisite: Pre-IBDP Algebra I or Pre-AP Algebra I

Pre-IBDP 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. Students must take the Virginia SOL test for Geometry.

Schools offering course: 2, 5

**PRE-IB DIPLOMA PROGRAMME ALGEBRA II**

Grades: 9-11  
Credit: 1  
Prerequisite: Pre-IBDP Geometry

Pre-IBDP Algebra II is the pre-requisite for IB Math Studies and IB Mathematics SL I. The course incorporates and expands the knowledge from both Pre-IBDP Algebra and 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. Students must take the Virginia SOL test for Algebra II. Algebra II is required for Advanced Studies Diploma.

School offering course: 2

**PRE-IB DIPLOMA PROGRAMME ALGEBRA II – TRIGONOMETRY**

Grades: 10-11  
Credit: 1  
Prerequisite: PRE-IBDP Geometry and teacher recommendation

Pre-IBDP 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 Pre-IBDP Algebra I and Geometry. This course is the prerequisite for IB Mathematics HL I. Students must take the Virginia SOL test for Algebra II. Algebra II is required for Advanced Studies Diploma.

Schools offering course: 2, 5

**IB MATHEMATICS I (SL)**

Grades: 10-11  
Credit: 1  
Prerequisite: Pre-IBDP Algebra II / Trigonometry or Pre-IBDP Algebra II with a teacher recommendation

IB Mathematics 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 strong math students who are preparing for studies in subjects such as chemistry, economics, psychology and business administration. The goal of this course is to provide students with a solid foundation of vectors, statistics, probability and pre-calculus topics. 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 MATHEMATICS II (SL)**

Grades: 11-12  
Credit: 1  
Prerequisite: IB Mathematics I SL and teacher recommendation

IB Mathematics II SL 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 SL may enroll in this course. This course builds on and extends the knowledge base of IB Mathematics I SL. IB Mathematics II SL is the study of concepts, techniques, and applications of calculus. Students in this course will complete one portfolio project and take the IB Mathematics SL examination.

Schools offering course: 2, 5

**IB MATHEMATICAL STUDIES (SL)**

Grade: 12  
Credit: 1  
Prerequisite: Pre-IBDP Algebra II and teacher recommendation

IB Mathematical Studies (SL) is intended to provide a realistic mathematical course for students with varied backgrounds and abilities. The skills needed to cope with the mathematical demands of a technological society are developed but no great technical expertise is required. Students likely to need to use mathematics in the pursuit of a science or mathematics career are advised to consider IB Mathematics SL. A substantial piece of work in the form of a project is required for IB Mathematical Studies. Topics include sets, logic, probability and statistics, functions, simple sequences, introductory differential calculus, finance, geometry, and trigonometry.

Schools offering course: 2, 5

**IB MATHEMATICS I (HL)**

Grade: 11  
Credit: 1  
Prerequisite: Pre-IBDP Algebra II/ Trigonometry and teacher recommendation

IB Mathematics I HL 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 the strong math student whose next formal
experience with mathematics will be college level courses in calculus, differential equations, linear algebra, finite mathematical structures or probability and statistics. The goal of this course is to provide students with a strong foundation in the concepts, techniques, and applications of pre-calculus topics, including functions, analytic geometry, further trigonometry, vectors, the complex plane, probability, statistics, and mathematical induction. Students will use technology as a tool for learning and develop an awareness of global contributions to the field of mathematics sciences.

Schools offering course: 2, 5

**IB MATHEMATICS II (HL)**

**Grade: 12**  
**Credit: 1**  
**Prerequisite:** IB Mathematics I HL and teacher recommendation

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.

Schools offering course: 2, 5

**DUAL ENROLLMENT COURSES**

**MULTIVARIABLE CALCULUS**

**Grade: 12**  
**Credit: 0.5**  
**Prerequisite:** AP Calculus BC with a score of 3 or above  
**Associated Institute:** NVCC  
**Dual Enrolled:** Yes

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.

School Offering Course: 6

**LINEAR ALGEBRA**

**Grade: 12**  
**Credit: 0.5**  
**Prerequisite:** AP Calculus BC with a score of 3 or above  
**Associated Institute:** NVCC  
**Dual Enrolled:** Yes

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: 6

**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, 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, 4, 5, 7, 11, 12, 13

**PROBABILITY AND STATISTICS**

**Grades: 11-12**  
**Credit: 0.5**  
**Prerequisite:** Algebra II

The Probability and Statistics course includes theory of probability, description of statistical measurements, probability distributions and statistical inference. The course is designed for the student who plans to enter such fields as business, economics, education, psychology, sociology, medicine, etc., which require statistics for their effective pursuit. Successful completion of this course will be adequate preparation for the usual college courses in these fields. In addition, any student who is preparing for study in mathematics, physical sciences or engineering will eventually find a need for one or more courses in statistics. This course will provide the student the necessary fundamental background in probability and statistics.

Schools offering course: 2, 4, 6, 7, 8, 9, 11, 12

**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 – VirtualSchool**
### 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, 8, 9, 10, 11, 12

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**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

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**ADVANCED PLACEMENT COMPUTER SCIENCE A**

*Grades: 10-12  Credit: 1*

- **Prerequisite:** Geometry and teacher recommendation

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

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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.

**Schools Offering Course:** Check with your school counselor for this new course's availability

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**COMPUTER SCIENCE: DATA STRUCTURES AND ALGORITHMS**

*Grades: 11-12  Credit: 1*

- **Prerequisite:** Algebra II and Advanced Placement 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

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**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 Advanced Placement Computer Science A qualification.

**School offering course:** 4

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**IB COMPUTER SCIENCE STANDARD LEVEL (SL)**

*Grades: 11-12  Credit: 1*

- **Prerequisite:** Advanced Computer Math or teacher recommendation

IB Computer Science Standard Level (SL) continues with the topics developed in Advanced Computer Math and Pre-IBDP Computer Science 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.

School offering course: 2

**IB COMPUTER SCIENCE HIGH LEVEL (HL)**

Grade: 12  Credit: 1
Prerequisite: IB Computer Science SL or teacher recommendation

IB Computer Science High Level (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 CS 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. The students will develop a major software project by developing the requirements specification, design documentation, pseudo code, testing documentation and the user documentation.

School 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

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**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 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

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**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 SPRING

GS CALCULUS SPRING – DUAL ENROLLMENT
(GMU MATH 116 – 4 credits)
Grades: 11-12 Credit: 0.5 High School credit
Prerequisite: GS Pre-Calculus

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 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

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

<table>
<thead>
<tr>
<th>Courses</th>
<th>Approved Substitutes(s)</th>
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</thead>
</table>
| Earth Science | • Earth Science I, Advanced Earth Science I, Pre-IB Diploma Programme  
                  Earth Science – V  
                  Earth Science II: Oceanography  
                  Earth Science II: Astronomy  
                  Earth Science II: Physical Geology  
                  AP Environmental Science V, W  
                  IB Environmental Systems – W, V  
                  AICE Environmental Management – W, V |
| Biology    | • Biology I, Pre-AP Biology, IGCSE Biology, Pre-IB Diploma Programme Biology – V  
                  Biology II: Ecology  
                  Biology II: Survey  
                  Biology II: DNA Science/Biotechnology  
                  AP Biology – W  
                  IB Biology I, II – W  
                  AICE Biology – W |
| Chemistry  | • Chemistry I, Pre-AP Chemistry, IGCSE Chemistry – V  
                  Chemistry II: Forensic Sciences and Chemical Analysis  
                  AP Chemistry - W  
                  AICE Chemistry – W  
                  IB Chemistry I, II – W |
| Physics    | • Physics I, IGCSE Physics  
                  AP Physics 1 – W  
                  AP Physics 2 – W  
                  AP Physics C: Mechanics – W  
                  AICE Physics – W  
                  IB Physics – W |

Courses indicating a “V” have an end-of-year test and offer the possibility of a verified unit of credit. Courses indicating a “W” offer the possibility of weighted credit if the student passes the course with a “C” or better and completes the required external assessment of the course.
SCIENCE COURSES

EARTH SCIENCE I
Grades: 9-12  Credit: 1
Prerequisite: Successful completion of Grade 8 Science

Earth Science I is a laboratory-based course that provides students with an opportunity to explore the various physical phenomena that affect the earth. This course, which encompasses research design concepts, helps students become more aware of their surroundings through the study of astronomy, space science, meteorology, oceanography, physical geology, and environmental resources. Students are required to take the Earth Science I Standards of Learning assessment at the end of this course.

Schools offering course: All

ADVANCED EARTH SCIENCE I
Grades: 9-12  Credit: 1
Prerequisite: Successful completion of Grade 8 Science; teacher recommendation

Advanced Earth Science I is a lab-based course designed to give students a foundation in earth science concepts and as well as the opportunity to apply principles of experimental design in laboratory settings and on a required student project. Advanced Earth Science I includes the study of geology, oceanography, meteorology, astronomy, and space science but with extensions to each curriculum objective. This course is open to interested students and may be required of students in specialty programs throughout the county. Students are required to take the Earth Science Standards of Learning assessment at the end of this course.

Schools offering course: 1, 3, 4, 6, 7, 9, 10, 11, 12

BIOLOGY I
Grades: 9-12  Credit: 1
Prerequisite: Successful completion of Grade 8 Science

Biology I is a laboratory-based course that includes the study of ecology, taxonomy, cellular chemistry, genetics, microbiology, and physiology. These areas are developed within a framework of principle biological theories with an emphasis on critical thinking and science process skills.

Students are required to take the Biology I Standards of Learning assessment at the end of this course.

Schools offering course: All

CHEMISTRY I
Grades: 10-12  Credit: 1
Prerequisite: Successful completion of one year of laboratory science; Algebra I and teacher recommendation
Co-requisite: Enrollment in Geometry

Chemistry I emphasizes the qualitative and quantitative study of substances and the changes that occur in them. Students will investigate using various lab techniques and apply mathematical and problem solving skills. A survey of concepts includes atomic structure, chemical bonding, formulas and equations, stoichiometry and other calculations based on molar relationships, phases of matter and the kinetic molecular theory, the acid-base theory, and simple organic chemistry. This course is intended for college preparatory and general education purposes. Students are required to take the Chemistry I Standards of Learning assessment at the end of this course.

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

PHYSICS I
Grades: 10-12  Credit: 1
Prerequisite: Successful completion of Algebra I; Geometry
Co-requisite: Enrollment in Algebra II or higher

Physics I is a standard first year course that covers all topics required by the Virginia Standards of Learning (SOL) for physics. This course is fast paced and students are expected to have strong study and mathematical skills. Students will utilize mathematical calculations while applying scientific methodology to investigate Newtonian mechanics; fluids (hydrostatics and hydrodynamics); wave phenomena; electricity and magnetism; thermodynamics; and selected topics in modern physics. Students will be instructed on how to design, conduct, analyze, and interpret data and present results collected from investigations. Written, detailed laboratory reports are required. Students who desire to continue their study of physics upon completion of this course could enroll in AP Physics 1, AP Physics 2 or AP Physics C.

Schools offering course: All

PRE-AP BIOLOGY
Grades: 9-12  Credit: 1
Prerequisite: Completion of grade 8 science; teacher recommendation

Pre-AP Biology is a lab-based course 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.

Students are required to take the Biology Standards of Learning assessment at the end of this course.

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

Advanced Placement 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 on memorizing terms and technical details. At least 25% of instructional time is dedicated to hands-on laboratory investigations. Students are expected to take the Advanced Placement 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, 99

ADVANCED PLACEMENT ENVIRONMENTAL SCIENCE

Grades: 11-12

Credit: 1

Prerequisite: Successful completion of Biology I; Chemistry I; Algebra II

Advanced Placement Environmental Science 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 on memorizing terms and technical details. At least 25% of instructional time is dedicated to hands-on laboratory investigations. Students are expected to take the Advanced Placement 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

ADVANCED PLACEMENT 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

ADVANCED PLACEMENT PHYSICS 2

Grades: 12

Credit: 1

Prerequisite: Successful completion of Physics 1 with teacher recommendation, 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. Students 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 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, 8
ADVANCED PLACEMENT 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

CAMBRIDGE SCIENCE COURSES

IGCSE BIOLOGY
Grades: 9-10 Credit: 1
Prerequisite: Successful completion of Grade 8 Science; teacher recommendation
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.

Students are required to take the Biology Standards of Learning assessment at the end of this course.

Schools offering course: 1, 4

AICE BIOLOGY (AS LEVEL)
Grades: 11-12 Credit: 1
Prerequisite: Completion of IGCSE Biology or Biology I; Algebra II or IGCSE Algebra II/Trigonometry; teacher recommendation
Co-requisite: Advanced Biology Laboratory at school 4 only
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.

School offering course: 1, 4

IGCSE CHEMISTRY
Grades: 10-11 Credit: 1
Prerequisite: Completion of IGCSE Biology or Biology I and teacher recommendation; completion of IGCSE Algebra I or Algebra II and teacher recommendation; successful completion of English 9
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. Students are required to take the Chemistry Standards of Learning assessment at the end of this course.

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; teacher recommendation
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 Advanced Placement qualification.

Schools offering course: 1, 4

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

Grades: 10-11  
Credit: 1  
Prerequisite: English 9, Algebra I, IGCSE Geometry or Geometry I and IGCSE Algebra II/Trigonometry (concurrent enrollment in IGCSE Algebra II/Trigonometry is allowed with a previous IGCSE teacher recommendation)

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 Algebra II/Trigonometry; IGCSE Chemistry or Chemistry I; Algebra II and Trigonometry

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 Advanced Placement 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; teacher recommendation

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. Since Earth Science is not a mandatory prerequisite for taking this course, students taking this course may take the Earth Science SOL, should they wish so, in order to fulfill the requirement for verified credit in science. 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

PRE-IB DIPLOMA PROGRAMME EARTH SCIENCE

Grades: 9-12  
Credit: 1  
Prerequisite: Enrollment in the IB Program and completion of Grade 8 Science

Pre-IBDP 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. Students are required to take the Earth Science Standards of Learning assessment at the end of this course.

School 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. Since Earth Science is not a mandatory prerequisite for taking this course, students taking this course may take the Earth Science SOL, should they wish so, in order to fulfill the requirement for verified credit in science. 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.

Schools offering course: 2, 5

PRE-IB DIPLOMA PROGRAMME BIOLOGY I

Grades: 9-12  
Credit: 1  
Prerequisite: Successful completion of Grade 8 Science; teacher recommendation

Pre-IBDP 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
Schools offering course: 2, 5

**IB BIOLOGY I (HL)**

**Grade:** 11  
**Credit:** 1  
**Prerequisite:** Successful completion of Pre-IBDP Biology; IB Chemistry I (SL); teacher recommendation

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.

*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, 5

**IB CHEMISTRY I (SL)**

**Grades 10-12**  
**Credit:** 1  
**Prerequisite:** Successful completion of one year of laboratory science; Algebra I and teacher recommendation

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. *Students are required to take the Standards of Learning End of Course Test.*

Schools offering course: 2, 5

**IB BIOLOGY II (HL)**

**Grade:** 12  
**Credit:** 1  
**Prerequisite:** Completion of IB Biology I

IB Biology II 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, 5

**IB CHEMISTRY II (SL)**

**Grades 11-12**  
**Credit:** 1  
**Prerequisite:** Successful completion of IB Chemistry I (SL) and teacher recommendation

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 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.

Schools offering course: 2, 5

**IB PHYSICS (SL)**

**Grades:** 11-12  
**Credit:** 1  
**Prerequisite:** Successful completion of Pre-IBDP Physics; Pre-IBDP Algebra II/Trigonometry; teacher recommendation

IB Physics is an extremely fast-paced, rigorous course following the IB Standard Level curriculum. Building on their background from Pre-IBDP 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.

School 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
Associated Institute: NVCC

Biology II: Survey of Advanced Topics in Biology (BIO 101 & 102) 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.

School offering course: 10

IB BIOLOGY I (HL)

Grade: 11 | Credit: 1
Prerequisite: Successful completion of Pre-IBDP Biology; IB Chemistry I (SL); teacher recommendation
Associated Institute: NVCC

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, 4, 5, 6, 7, 8, 9, 12, 99

IB BIOLOGY II (HL)

Grade: 12 | Credit: 1
Prerequisite: Completion of IB Biology I (HL)
Associated Institute: NVCC

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

STANDARD SCIENCE ELECTIVE COURSES

EARTH SCIENCE II: OCEANOGRAPHY

Grades: 11-12 | Credit: 1
Prerequisite: Successful completion of Earth Science; 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; 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, 12, 99

EARTH SCIENCE II: PHYSICAL GEOLOGY

Grades: 11-12 | Credit: 1
Prerequisite: Successful completion of Earth Science; 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, 8
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 II and Geometry; teacher recommendation

Co-requisite: Enrollment in Algebra II or higher

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.

School offering course: 3

BIOLOGY II: ECOLOGY
Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Biology; and either Earth Science, 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: 1, 6, 7, 9, 10, 11

CHEMISTRY II: FORENSIC SCIENCES AND CHEMICAL ANALYSIS
Grades: 10-12 Credit: 1
Prerequisite: Successful completion of Biology I; Chemistry I; teacher recommendation

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.

School offering course: 1, 6, 7, 9, 10, 11
INTRODUCTION TO MICROBIOLOGY AND BACTERIOLOGY
Grades: 10-12  Credit: 0.5
Prerequisite: Successful completion of introductory Biology; teacher recommendation; 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.
School offering course: 10

INTRODUCTION TO FORENSIC SCIENCES
Grades: 10-12  Credit: 0.5
Prerequisite: Successful completion of introductory Biology; teacher recommendation; 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.
School 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.
School 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)
Grades: 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)  
Grades: 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)  
Grades: 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)  
Grades: 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 I  
(GMU BIOLOGY 103 AND LAB 105 – 4 CREDITS)  
Grades: 11-12 Credit: 0.5 High School credit  
Prerequisite: Completion Pre-AP or Honors Biology with a C or better  
Introductory Biology I is a focused survey course with objectives centered on the chemistry of life; cells and molecular structure; cell functions; enzymes and their roles and functions; genetics and DNA; and diversity of life and evolution.  
Offered ONLY at The Governor’s School @ Innovation Park

GS GENERAL BIOLOGY I LAB  
(GMU BIOLOGY 103 AND LAB 105 – 4 CREDITS)  
Grades: 11-12 Credit: 0.5 High School credit  
Prerequisite: Completion Pre-AP or Honors Biology with a C or better  
Enrollment in this lab requires concurrent enrollment in GS General Biology I.  
Offered ONLY at The Governor’s School @ Innovation Park

GS GENERAL BIOLOGY II  
(BIOLOGY 104 AND LAB 106 – 4 CREDITS)  
Grades: 11-12 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)  
Grades: 11-12 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)  
Grades: 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)  
Grades: 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)  
Grades: 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)  
Grades: 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)  
Grades: 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.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Approved Substitutes(s)</th>
</tr>
</thead>
</table>
| World History and Geography to 1500 – V | • Pre-AP World History and Geography to 1500 – V  
• Pre-IB Diploma Programme World History and Geography from 1500 – V  
• Pre-AICE World History and Geography to 1500 |
| World History and Geography from 1500 – V | • IB History II – W  
• AP World History – W  
• AICE World History – W  
• IB Geography – V, W |
| U.S. Virginia History – V            | • AP U.S. History – V, W  
• AICE U.S. History – V, W  
• IB History I – V, W  
• Dual Enrollment U.S./Virginia History |
| U.S. Virginia Government             | • AP U.S. Government and Politics – W  
• Pre-IB Diploma Programme/AP Government and Politics: Comparative – W  
• AP Government and Politics: Comparative – W  
• Dual Enrollment US/VA Government (NVCC) |

Courses indicating a “V” have an end-of-course SOL test and offer the possibility of a verified unit of credit. Courses designated with a “W” offer weighted credit if the student receives a grade of “C” or higher in the course. Students are required to complete the assessment of the course.
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.
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.
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.
Schools offering course: All

U.S. AND VIRGINIA GOVERNMENT
Grade: 12 Credit: 1
Prerequisite: Assignment to Grade 12
The American system of national, state, and local government, including the role of the United States in global affairs, is analyzed. Basic constitutional principles, rights and responsibilities of citizenship, political beliefs and ideologies, as well as free market economic principles, and the organization and operation of our political institutions are studied. Democratic beliefs and the importance of participation in the democratic process are emphasized.
Schools offering course: 3, 6, 7, 8, 9, 10, 11, 12

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

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 Advanced Placement 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 Advanced Placement World History Examination to qualify for advanced standing and/or credit in college.
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
Advanced Placement 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 Advanced Placement U.S. History Examination to qualify for advanced standing and/or credit in college.
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

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.
Schools offering course: 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.
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.
Schools offering course: 1, 4
PRE-IB DIPLOMA PROGRAMME WORLD HISTORY AND GEOGRAPHY FROM 1500

Grade: 9 Credit: 1
Prerequisite: Assignment to Grade 9
Pre-IBDP World History is a survey of world history from 1500 to present with a concentration on modern developments in western civilization and includes: the Reformation, the Age of Discovery, the Scientific and Industrial Revolutions, the Enlightenment, the development of nation-states, nationalism, and the Age of Imperialism, 20th Century 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.

Schools offering course: 2, 5

PRE-IB DIPLOMA PROGRAMME – AP GOVERNMENT AND POLITICS: COMPARATIVE

Grades: 10-12 Credit: 1
Recommended prerequisite: Pre-IBDP English 9 and Pre-IBDP 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

PRE-IB DIPLOMA PROGRAMME/AP GOVERNMENT AND POLITICS: U.S.

Grades: 10-12 Credit: 1
Recommended prerequisite: Pre-IBDP English 9 and Pre-IBDP 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 Advanced Placement 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.

School offering course: 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 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.

School offering course: 2

IB HISTORY I: HISTORY OF THE AMERICAS (HL)

Grades: 11-12 Credit: 1
Prerequisite: Successful completion of Pre-IBDP World History and Geography from 1500, Pre-IBDP /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.

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
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 of 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.

Schools offering course: 1, 6, 9, 11

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, 9

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 Advanced Placement 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

The study of European history since 1450 introduces students to cultural, economic, political, and social developments that played a fundamental role in shaping the world in which they live. In addition to providing a basic narrative of events and movements, the goals of the AP program in European History are to develop: an understanding of some of the principal themes in modern European History; an ability to analyze historical evidence and historical interpretation; and an ability to express historical understanding in writing. In May, students take the AP Examination to qualify for advanced standing and/or credit in college.

Schools offering course: 1, 3, 7, 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 Advanced Placement Human Geography Examination to qualify for advanced standing and/or credit in college.
Schools offering course: 3, 6, 7, 10, 11, 12

AP PSYCHOLOGY
Grade: 12 (Grades 11-12 at school 9 only) Credit: 1
Prerequisite: Teacher recommendation
The Advanced Placement 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 Advanced Placement 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: Pre-IBDP/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

IGCSE GLOBAL PERSPECTIVES
Grade: 10 Credit: 1
Prerequisite:
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**

**Grade:** 11-12  
**Credit:** 1  
**Prerequisite:**

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

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**AICE INTERNATIONAL HISTORY 1945 – 1991**

**Grades:** 11-12  
**Credit:** 1  
**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

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**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 of study 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

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**AICE SOCIOLOGY**

**Grades:** 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

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**HANDS ON HISTORY: DISCOVERING PRINCE WILLIAM COUNTY’S PAST**

**Grades:** 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: 1, 4

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**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: 2, 4, 6, 7, 8, 9, 11
**SOCIOMETRY**  
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**  
Grades: 11-12  
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, 7, 9, 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.  
Schools offering course: 1, 2, 5

**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
SPECIAL EDUCATION COURSES CAN FULFILL THE FOLLOWING GRADUATION REQUIREMENTS:

- Employ courses can fulfill Sequential Elective requirement and Career and Technical Education (CTE) completer sequence elective

### COMPENSATORY SKILLS I

**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

### EMPLOYMENT OPPORTUNITIES FOR YOUTH (EMPLOY)

**Prerequisite:** Any student who is receiving special education services and whose Individualized Education Program (IEP) and transition goals indicate the appropriateness of the EMPLOY curriculum

EMPLOY provides special education students with skills that will facilitate their entry into suitable occupations in accordance with their individual educational needs, aptitudes, and interests.

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 IV

The focus of EMPLOY IV 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 and 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 school 7, 9
LEARNING STRATEGIES II
Grade: 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 school 7, 9

PERSONAL LIVING AND FINANCE
Grades: 10-12
Credit: 1 elective credit for Standard or Advanced Studies Diplomas
Weighted: No
Prerequisite: None

This course is available to students with disabilities eligible for credit accommodation. Students may receive credit for Economics and Personal Finance if the student has earned at least 3 standard credits in history and social science. This course addresses the need for students to have the skills to manage personal finances and to make sound financial decisions. Personal Living and Finance may not be used to satisfy the mathematics requirement for the Standard or Advanced Studies Diplomas.

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 school 9

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

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 school 9

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: 11-12
Credit: 0.5
Prerequisite: Successful completion with a “B” average or better in Health and Physical Education I and II; approval of the department chairperson and the teacher being assisted

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
GRADE: 11-12
Credit: 0.5
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
Weighted: No
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

OFFICE SPECIALIST II—PREPARATION
Grades: 10-12 Credit: 1
Weighted: No
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

OFFICE SPECIALIST III—PREPARATION
Grades: 11-12 Credit: 1
Weighted: No
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
## 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):

- **A** = 5 points  
- **B** = 4 points  
- **C** = 3 points  
- **D** = 1 point  
- **F** = 0 point

### Weighted Advanced Placement Courses (1.0W)

<table>
<thead>
<tr>
<th>Course</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP English – Literature and Composition</td>
<td>AP Statistics</td>
</tr>
<tr>
<td>AP English – Literature and Composition VV</td>
<td>AP Statistics VV</td>
</tr>
<tr>
<td>AP English – Language and Composition</td>
<td>AP Environmental Science</td>
</tr>
<tr>
<td>AP English – Language and Composition VV</td>
<td>AP Environmental Science VV</td>
</tr>
<tr>
<td>AP Human Geography</td>
<td>AP Biology</td>
</tr>
<tr>
<td>AP Human Geography VV</td>
<td>AP Biology VV</td>
</tr>
<tr>
<td>AP History – United States</td>
<td>AP Chemistry</td>
</tr>
<tr>
<td>AP History – United States VV</td>
<td>AP Chemistry VV</td>
</tr>
<tr>
<td>AP World History</td>
<td>AP Physics 1</td>
</tr>
<tr>
<td>AP World History VV</td>
<td>AP Physics 2</td>
</tr>
<tr>
<td>AP History – European</td>
<td>AP Physics C</td>
</tr>
<tr>
<td>AP History – European VV</td>
<td>AP French Language</td>
</tr>
<tr>
<td>AP Government and Politics: U.S.</td>
<td>AP German Language</td>
</tr>
<tr>
<td>AP Government and Politics: U.S. VV</td>
<td>AP Italian</td>
</tr>
<tr>
<td>AP Government and Politics: Comp.</td>
<td>AP Latin Vergil</td>
</tr>
<tr>
<td>AP Government and Politics: Comp. VV</td>
<td>AP Latin Vergil VV</td>
</tr>
<tr>
<td>AP Economics Micro and Macro</td>
<td>AP Spanish Language</td>
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<tr>
<td>AP Economics – Micro VV</td>
<td>AP Spanish Language VV</td>
</tr>
<tr>
<td>AP Economics – Macro VV</td>
<td>AP Spanish Literature</td>
</tr>
<tr>
<td>AP Psychology</td>
<td>AP Spanish Literature VV</td>
</tr>
<tr>
<td>AP Psychology VV</td>
<td>AP Studio Art – 2-D Design</td>
</tr>
<tr>
<td>AP Calculus AB</td>
<td>AP Studio Art – 3-D Design</td>
</tr>
<tr>
<td>AP Calculus AB VV</td>
<td>AP Studio Art – Drawing</td>
</tr>
<tr>
<td>AP Calculus BC</td>
<td>AP Art History</td>
</tr>
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<td>AP Calculus BC VV</td>
<td>AP Music Theory</td>
</tr>
<tr>
<td>AP Research</td>
<td>VV – Virtual Virginia</td>
</tr>
<tr>
<td>AP Seminar</td>
<td>VV – Virtual Virginia</td>
</tr>
<tr>
<td>AP Computer Science A</td>
<td>VV – Virtual Virginia</td>
</tr>
<tr>
<td>AP Computer Science A VV</td>
<td>VV – Virtual Virginia</td>
</tr>
<tr>
<td>AP Computer Science Principles</td>
<td>VV – Virtual Virginia</td>
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Weighted International Baccalaureate Diploma Courses (1.0W)

<table>
<thead>
<tr>
<th>Course</th>
<th>Level</th>
<th>Course</th>
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<tbody>
<tr>
<td>IB English I (HL)</td>
<td>HL</td>
<td>IB Global Politics (HL)</td>
</tr>
<tr>
<td>IB English II (HL)</td>
<td>HL</td>
<td>IB Psychology (SL)</td>
</tr>
<tr>
<td>IB English II (SL)</td>
<td>SL</td>
<td>IB Computer Science (SL)</td>
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<td>IB Theatre Arts (SL)</td>
<td>SL</td>
<td>IB Computer Science (HL)</td>
</tr>
<tr>
<td>IB Theory of Knowledge</td>
<td></td>
<td>IB Mathematical Studies (SL)</td>
</tr>
<tr>
<td>IB Geography (SL)</td>
<td>SL</td>
<td>IB Mathematics I (HL)</td>
</tr>
<tr>
<td>IB History I (HL)</td>
<td>HL</td>
<td>IB Mathematics II (HL)</td>
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<tr>
<td>IB Social and Cultural Anthropology (SL)</td>
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<td>IB Mathematics I (SL)</td>
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<tr>
<td>IB History II (HL)</td>
<td>HL</td>
<td>IB Biology I (HL)</td>
</tr>
<tr>
<td>Pre-IB Diploma Programme/</td>
<td></td>
<td>IB Biology II (HL)</td>
</tr>
<tr>
<td>Government and Politics: US</td>
<td></td>
<td>IB Environmental Systems and Societies (SL)</td>
</tr>
<tr>
<td>Pre-IB Diploma Programme/</td>
<td></td>
<td>IB Visual Arts I (HL)</td>
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<tr>
<td>AP Government and Politics:</td>
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<td>IB Visual Arts II (HL)</td>
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<tr>
<td>Comparative</td>
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<td>IB Visual Arts (SLA or SLB)</td>
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<tr>
<td>IB Economics (SL)</td>
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<td>IB Global Politics</td>
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<td></td>
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</tr>
<tr>
<td>IB English I (HL)</td>
<td>HL</td>
<td>IB Italian IV</td>
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<td>IB English II (HL)</td>
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<td>IB Italian V (SL)</td>
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<td>IB English II (SL)</td>
<td>SL</td>
<td>IB Latin IV (SL)</td>
</tr>
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<td>IB Theatre Arts (SL)</td>
<td>SL</td>
<td>IB Latin V (SL)</td>
</tr>
<tr>
<td>IB Theory of Knowledge</td>
<td></td>
<td>IB Spanish IV (SL)</td>
</tr>
<tr>
<td>IB Geography (SL)</td>
<td>SL</td>
<td>IB Spanish V (SL)</td>
</tr>
<tr>
<td>IB History I (HL)</td>
<td>HL</td>
<td>IB Spanish V (HL)</td>
</tr>
<tr>
<td>IB Social and Cultural Anthropology (SL)</td>
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<td>IB Spanish A2 (SL)</td>
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<td>IB Mathematical Studies (SL)</td>
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<td>IB Business and Management (SL)</td>
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<tr>
<td>IB Economics (SL)</td>
<td></td>
<td>IB Visual Arts II (HL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IB Visual Arts (SLA or SLB)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IB Information Technology in a Global Society</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IB Global Politics</td>
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</table>

Weighted Advanced International Certificate Of Education Courses (1.0W)

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<thead>
<tr>
<th>Course</th>
<th>Level</th>
<th>Course</th>
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<tbody>
<tr>
<td>AICE Economics</td>
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<td>AICE Psychology (AS Level)</td>
</tr>
<tr>
<td>AICE English Literature (AS Level)</td>
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<td>AICE Thinking Skills (AS Level)</td>
</tr>
<tr>
<td>AICE English Language and Composition (AS Level)</td>
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<td>AICE Thinking Skills (A Level)</td>
</tr>
<tr>
<td>AICE Global Perspectives</td>
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<td>AICE Mathematics I (AS Level)</td>
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<tr>
<td>AICE Sociology</td>
<td></td>
<td>AICE Mathematics II (AS Level)</td>
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<tr>
<td>AICE U.S. History (AS Level)</td>
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<td>AICE Mechanics (Level A)</td>
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<tr>
<td>AICE International History, 1945-1991 (AS Level)</td>
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<td>AICE Computing (AS Level)</td>
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<td>AICE Environmental Management (AS Level)</td>
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<td>AICE Physics (AS Level)</td>
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<td>AICE French IV (AS Level)</td>
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<td>AICE French V (A Level)</td>
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<td>AICE German IV (AS Level)</td>
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<td></td>
<td></td>
<td>AICE German V (A Level)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AICE Classical Studies I (AS Level)</td>
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<td>AICE Latin V (AS Level)</td>
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<td>AICE Spanish IV (AS Level)</td>
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<td>AICE Spanish V (A Level)</td>
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<td></td>
<td></td>
<td>AICE Art and Design (AS Level)</td>
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<tr>
<td></td>
<td></td>
<td>AICE Music (AS/A Level)</td>
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</table>

Weighted Career And Technology Courses (1.0W)

<table>
<thead>
<tr>
<th>Course</th>
<th>Level</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering and Architecture (PLTW)</td>
<td></td>
<td>Computer Networking Hardware Operations I Dual Enrollment</td>
</tr>
<tr>
<td>Computer Networking Hardware Operations I Dual Enrollment</td>
<td></td>
<td>Criminal Justice I Dual Enrollment</td>
</tr>
<tr>
<td>Computer Networking Hardware Operations I Dual Enrollment</td>
<td></td>
<td>IT Database Design and Management</td>
</tr>
<tr>
<td>Computer Networking Hardware Operations II Dual Enrollment</td>
<td></td>
<td>IT Database Design and Management Dual Enrollment</td>
</tr>
<tr>
<td>Computer Networking Hardware Operations II Dual Enrollment</td>
<td></td>
<td>IT Advanced Database Design and Management</td>
</tr>
<tr>
<td>Computer Networking Hardware Operations III Dual Enrollment</td>
<td></td>
<td>IT Advanced Database Design and Management Dual Enrollment</td>
</tr>
<tr>
<td>Computer Networking Hardware Operations III Dual Enrollment</td>
<td></td>
<td>Principles of Engineering (PLTW)</td>
</tr>
<tr>
<td>Computer Networking Hardware Operations IV Dual Enrollment</td>
<td></td>
<td>Software Engineering (PLTW)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Virginia Teachers for Tomorrow Dual Enrollment</td>
</tr>
</tbody>
</table>
Weighted Career And Technology Courses (0.5W)

- Automotive Technology I – Dual Enrolled
- Automotive Technology II – Dual Enrolled
- Automotive Technology III – Dual Enrolled
- Computer Systems Technology I – Dual Enrolled
- Computer Systems Technology I – Cyber-Security – Dual Enrolled
- Early Childhood Education and Services I – Dual Enrolled
- Early Childhood Education and Services II – Dual Enrolled
- Entrepreneurship – Dual Enrolled
- Heating, Ventilation, and Air Conditioning I – Dual Enrolled
- Heating, Ventilation, and Air Conditioning II – Dual Enrolled
- IT Programming – Dual Enrollment
- IT Web Technologies – Dual Enrollment
- IT Advanced Web Technologies – Dual Enrollment
- Welding I – Dual Enrolled
- Welding II – Dual Enrolled
- Welding III – Dual Enrolled

Additional Weighted Courses (1.0W)

- Functions/Trigonometry
- Functions/Analytic Geometry
- Computer Science: Data Structures and Algorithms
- NVCC Dual Enrollment Multivariable Calculus
- NVCC Dual Enrollment Linear Algebra

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>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>4.5</td>
</tr>
<tr>
<td>B+</td>
<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>
</tr>
<tr>
<td>D</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
</tr>
</tbody>
</table>

- Pre-AP French Language III
- Pre-AP German Language III
- Pre-AP Latin Language III
- Pre-AP Russian Language III
- Pre-AP Spanish Language III
- Pre-AP French Language IV
- Pre-AP German Language IV
- Pre-AP Latin Language IV
- Pre-AP Russian Language IV
- Pre-AP Spanish Language IV
- Pre-AP Diploma Programme French III
- IB AB Initio French II
- Pre-AP Diploma Programme German III
- Pre-AP Diploma Programme Spanish III
- Pre-AP Diploma Programme Latin III
- Pre-AP Algebra II/Trigonometry
- IGCSE Algebra II/Trigonometry
- Pre-AP Diploma Programme Algebra II/Trigonometry
- Advanced Computer Mathematics
- IGCSE French III
- NVCC Dual Enrollment Biology II
- IGCSE German III
- NVCC Dual Enrollment U.S. and Virginia Government
- IGCSE Italian III
- NVCC Dual Enrollment English 12
- IGCSE Latin III
- NVCC Dual Enrollment Biology (Bio 101, 102)
- IGCSE Spanish III
- NVCC Dual Enrollment US/VA History (Hist 121, 122)
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>Functions/Analytic Geometry</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>
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</tr>
<tr>
<td>Foreign Language I</td>
<td>Foreign Language II</td>
<td>Foreign Language III</td>
<td>Foreign Language IV</td>
<td>Foreign Language V</td>
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<td>HPE I</td>
<td>HPE II</td>
<td>Economics and Personal Finance</td>
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<td>Elective</td>
<td>Elective</td>
<td>Elective</td>
<td>Elective</td>
<td></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).

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>
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<td>Sequential Elective</td>
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</tr>
<tr>
<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).

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.
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.

**Art**
- Art 1-5
- Art History
- Art Portfolio Preparation
- AP Studio Art (2-D Design)
- AP Studio Art (3-D Design)
- AP Studio Art (Drawing)
- AP Art History
- Photography
- Photography II
- CFPA Art I
- CFPA Art II
- CFPA 2D Media and Design
- CFPA 3D Media and Design
- Computer Art
- IGCSE Art and Design
- AICE Art and Design (Level AS; Level A)
- IB Visual Arts I
- IB Visual Arts II
- IT Graphic Design
- IT Computer Graphics I
- IT Computer Graphics II
- IT Multimedia Software Des and Dev I
- IT Multimedia Software Des and Dev II
- IT Photography
- Scientific Illustration

**Math**
- Advanced Computer Math
- AP Computer Science A
- Computer Science: Data Structures and Algorithms
- AICE Computing
- IB Computer Science SL/HL

**Performing Arts**
- Theatre
- Theatre I: Introduction to Theatre
- Theatre II: An Exploration of Performance in Theatre
- Theatre III
- Theatre IV
- Technical Theatre/Production
- IB Theatre Arts
- Musical Theatre
- Advanced Performance Theatre
- Directing for the Stage and Screen

**Specialized Music**
- AP Music Theory
- IB Music I and IB Music II
- Music Theory I
- Music Theory II
- Music Technology
- Advanced Music Technology
- A Survey of World Music
- Class Voice I
- Class Voice II
- Class Voice III
- IGCSE Music Studies
- AICE Music
- Pre-IB Diploma Programme Band
- Pre-IB Diploma Program Choir
- Pre-IB Diploma Programme Orchestra
- Class Piano
- Class Guitar

**English**
- Creative Writing I & II
- Creative Writing Publications
- Journalism I – III
- Photojournalism/Yearbook
- Intro to Speech Communication
- Enrichment in Speech Communication

**Dance**
- Dance I – IV
- Dance Composition and Repertory

**Physical Education**
- Prevention and Care of Athletic Injuries I & II
- Advanced PE/Personal Fitness
- Advanced PE/Weight Training

**Colgan High School – CFPA**
- Creative Writing Exploration
- Writing Short and Long Fiction-Advanced Genre Focus
- Writing Creative Nonfiction-Advanced Genre Focus
- Writing Poetry-Advanced Genre Focus
- Writing For the Screen and Stage-Advanced Genre Focus
- Creative Writing Publications
- Advanced Creative Writing Workshop and seminar

**World Language/ESOL**
- Any two sequential foreign language courses

**Military Science**
- Naval Science I – IV
- Military Science I – IV
- Leadership Education I – IV (MCJROTC)
- Aerospace Science and Leadership I – IV (AFJROTC)

**Career and Technical Education**
- CTE sequential electives vary by course. Please see course descriptions in the Career and Technical Education section of this book.

**Special Education**
- Compensatory Skills I – IV
- Social Skills I and II

**- .5 credit courses. Students must be aware that 2 total credits must be earned in a sequence.**
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Chairman

Mrs. Lillie G. Jessie
Vice Chairman
Occoquan District

Mr. William J. Deutsch
Coles District

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Brentsville District

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Superintendent’s Staff
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