

The Commonwealth Governor's School

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Course Descriptions

ENGLISH 9: Honors English 9 (Course #1131G) Foundations of Community introduces students to the critical analysis of literature through challenging reading, writing and discussion. Students study the defining characteristics of the forms and levels of discourse, both imaginative and expository. Students apply their skills to timeless problems of communities, their environment, and their development.

ENGLISH 10: Honors English 10 (Course #1141G) Basic concepts learned in the ninth grade course are applied to literary works of increasing complexity. Special attention is given to the relationship between and among individuals, their society, and their environment. Written and oral work increasingly emphasizes persuasive forms appropriate to public discourses and to problem solving in human communities. Upon course completion, students will take the Standards of Learning Reading 11 test.

ENGLISH 11: AP English Language and Composition (Course #1196G) The American Experience in a Global Context examines the American cultural experience and its connections to the world in coordination with eleventh-grade social studies. Students will extend and refine their skills in critical reading and writing. Upon course completion, students will take the Standards of Learning Writing 11 test and will be prepared to take the AP English Language and Composition exam.

ENGLISH 12: AP English Literature and Composition (Course #1195G) In this course, students will apply their critical skills to imaginative literature from the Anglo-American canon. Students will prepare to meet the demands of the AP English Literature and Composition exam and the 12th grade Standards of Learning. They will also enrich their understanding of global issues through a study of major cultural developments. Students will be prepared to take the AP English Literature and Composition exam.

MATHEMATICS 9: Honors Algebra II (Course #3135G) Prerequisite(s): Algebra I This course presents an in-depth study of algebra topics, including the study of linear and quadratic equations, functions and systems, irrational and complex numbers, matrix theory, conic sections, polynomials; sequences and series; and probability. Students will take the Standards of Learning Algebra II test.

MATHEMATICS 10:

Honors Geometry with Trigonometry (Course #3143G) Prerequisite(s): Algebra I, Algebra II This course will consist of a range of geometry and trigonometry topics including logic and deductive reasoning, angles, parallel lines, congruence and similarity, triangles, quadrilaterals, polygons, circles, trigonometric functions, trigonometric identities, applications of trigonometry, areas and volumes, 3-D modeling through the use of 2-D views and constructions. Students may take the Standards of Learning Geometry test if needed for graduation requirements.

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AP Precalculus with Special Topics (Course #3161G) this course centers on functions modeling dynamic phenomena. This research-based exploration of functions is designed to better prepare students for college-level calculus and provide grounding for other mathematics and science courses. In this course, students study a broad spectrum of function types that are foundational for careers in mathematics, physics, biology, health science, business, social science, and data

science. Furthermore, the course is structured to provide both a coherent capstone experience and a focus on preparation for future courses.

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-or-

AP Calculus AB (Course #3177G) This course is a one-semester college-level calculus course. Students cultivate their understanding of differential and integral calculus through engagement with real-world problems represented graphically, numerically, analytically, and verbally and using definitions and theorems to build arguments and justify conclusions as they explore concepts like change, limits, and the analysis of functions. Using traditional CGS methods, students will explore practical applications of content through problem-solving and project-based learning. Students will be highly prepared to take the AP Calculus AB exam at the end of the course.

MATHEMATICS 12:

AP Statistics (Course #3192G) Students study problems of statistics in society. Topics include exploratory data analysis, sampling, probability, simulations, and hypothesis testing. Emphasis is placed on problem solving and applications through research. Experiences with appropriate micro-computer software, graphing calculators, and projects are included. Upon completing the course, students will be prepared to take the AP Statistics exam.

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AP Calculus BC & Multivariable Calculus (Course #3178G) This course is designed as a second year calculus course that follows the College Board's Mathematical Practices for AP Calculus (MPACs), which will expand on the student's knowledge of the Big Ideas from AB Calculus (limits, derivatives, integrals, and the Fundamental Theorem of Calculus). To master these enduring understandings, students are expected and required to be able to: reason with definitions and theorems, connect concepts, implement algebraic and computational processes, connect multiple representations, build notational fluency, and communicate. In addition to the BC topics covered (calculus of vector, parametric, and polar functions, advanced integration methods, applications, and approximations, and series), students will explore important multivariable calculus topics, including a deeper investigation into the applications of vectors (dot and cross product, surfaces in 3D space, partial derivatives and differentials, and Green's Theorem). Students will be highly prepared to take the AP Calculus BC exam at the end of the course.

SCIENCE 9: AP Environmental Science (Course #4270G) AP Environmental Science is designed to be the equivalent of a one-semester, introductory college course. Scientific principles and analysis are stressed and a laboratory component is included. AP Environmental Science is designed to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them. Upon course completion, students will be prepared to take the AP Environmental Science exam.

SCIENCE 10: AP Biology (Course #4370G) This course is the equivalent of a two-semester college introductory biology course. The course follows the AP College Board criteria addressing three general areas of study: molecules and cells,

heredity and evolution, and organism and populations. The two main goals of AP Biology are to help students develop a conceptual framework for modern biology and help students gain an appreciation of science as a process. Primary emphasis in an AP Biology course will be on developing an understanding of concepts rather than memorizing terms and technical details. Essential to this conceptual understanding are the following: a grasp of science as a process rather than as an accumulation of facts; personal experience in scientific inquiry; recognition of unifying themes that integrate the major topics of biology; and the application of mathematics and critical thinking skills to better understand biological knowledge. Students will take the Standards of Learning Biology test and will be prepared to take the AP Biology exam.

SCIENCE 11: DE Chemistry (Course #4420G) This course will be a college level chemistry course with a dual enrollment option. Students electing the dual enrollment option will be expected to complete college level coursework with academic standards equivalent to other college courses and will receive credit for CHEM 101 AND 101L upon successful completion of the course.. Students may take the Standards of Learning Chemistry test if needed for graduation requirements.

SCIENCE 12: AP Physics 1 (Course #4570G) This is equivalent to a first-semester college course in algebra-based physics. The course covers Newtonian mechanics, including rotational dynamics and angular momentum; work, energy, and power; and mechanical waves and sound. It will also introduce electric circuits, while giving students the option to take the AP Physics 1 exam.

SOCIAL STUDIES 9: AP European History (Course #2399G) AP European History is a western civilization course designed to emphasize higher cognitive and critical thinking skills. Problem-solving strategies are utilized to teach basic social science skills such as map reading, research, comparison making, and assessing cause and effect. Through independent study and interdisciplinary projects, students study the most important trends, events, and personalities in European history from the Renaissance to the present. Students may take the Standards of Learning World History II exam if needed for graduation requirements. Students will have met the requirements for World History and will be prepared to take the AP European History exam.

SOCIAL STUDIES 10: AP U.S. Government (Course #2445G) This government course is designed to enable students to identify and analyze political theory while examining the institutions, political process, and practices of local, state and national governments. Students identify topics of community, national, and international concern, gather data, and research possible solutions. Students will have met the requirements for the U.S. Government and will be prepared to take the AP U.S. Government exam.

SOCIAL STUDIES 11: AP U.S. History (Course #2319G) The U.S. History course is designed to present U.S. History within a global perspective. Emphasis will be on critical reading and writing. Students will gain an in-depth understanding of American history through selection and effective use of knowledge. Students may take the Standards of Learning U.S. History test if needed for graduation requirements and will be prepared to take the AP U.S. History exam.

SOCIAL STUDIES 12: AP Human Geography (Course #2211G) This course provides students with the opportunity to identify and analyze contemporary concerns and problems from local, national, and global perspectives. Using geographical tools and skills, they will consider issues pertaining to population distribution and composition, cultural patterns and processes, political organization, land use, industrialization and economic development, and urbanization. Students may take the World Geography Standards of Learning test if needed for graduation requirements and will be prepared to take the AP Human Geography exam.