BAY RIDGE PREP

COURSE CATALOG

This catalog describes courses that are currently or frequently offered at the Bay Ridge Prep Upper School. Not all courses are offered year-to-year. The sequence of courses is for a typical high school student entering into the 9th grade. The listed sequence of courses may vary from student to student; for example, an advanced math student may bypass Algebra I and take Algebra II in 9th grade, opening the door to additional electives in mathematics later on.

Credits are based on the number of instructional hours a course meets per week. Bay Ridge Prep's daily schedule has 7-8 periods, each 40-43 minutes in duration, depending on the day of the week. A course that meets 4-5 periods per week is awarded 0.5 credits per semester, for a total of 1 credit for a full-year course. Courses that meet less often are awarded credit values accordingly. Some courses may also have honors options available to students; students completing the honors requirements for a course will have the honors designation noted for that course on their transcript.

ENGLISH

Required courses:

ENGLISH I: JOURNEYS, HISTORIES, AND IDENTITIES (*2 semesters, 1 credit*)
This entry level English course introduces students to a high school study of literature by examining stories of identity, discovery, and transformation. The goal is to expose students to various models of self-discovery, which they will utilize to explore their own personal development. Through close reading, discussion, and written work (both scholarly and personal), students will analyze and explore texts such as *The Odyssey, The Crucible, Persepolis, Purple Hibiscus,* and *Siddhartha.* Students will emerge from this course with a deeper understanding of language, journeys, and themselves.

LITERATURE AND OUR WORLD (*2 semesters, 1 credit*)
This Sophomore level course tracks the development of literature across the globe (from Africa and Europe, to China, the Americas, and the Middle East). Through rich aesthetic exposure to these texts, students will learn to uncover the cultural fingerprints that societies both inspire and leave behind in their literature. Works include *Beowulf, Frankenstein, Macbeth, Things Fall Apart, The Joy Luck Club, Journey to the West,* and *The Kite Runner*. Students completing this course will be primed for the type of deep reading and analytic writing expected at the upper levels of high school.

AMERICAN LITERATURE (*2 semesters, 1 credit*)
As much as America is a geography and a culture, it is also an idea– one that has been richly explored and examined through literature. This Junior level course focuses on building literacy skills by exploring the foundational texts of the United States (from Hawthorne, Thoreau and Dickinson to Langston Hughes, Toni Morrison and Phillip Roth). Throughout this course, 11th grade students will analyze the impact that these texts have had on our country's cultural heritage, with a keen awareness of the effect these cultures and histories have on contemporary society. Texts include *The Scarlet Letter, The Narrative of the Life of Frederick Douglass, The Great Gatsby, A Streetcar Named Desire,* and *Beloved.* Students will exit this course with a developed awareness of how a singular American mythology has evolved into a multiplicity of potential voices and literary experiences.

DRAMATIC LITERATURE: ELIZABETHAN TO CONTEMPORARY (*2 semesters, 1 credit*)
In this culminating English course, our seniors will explore the rich history of dramatic literature and examine how theatrical writing offers a unique window into the study of literature, identity, personal voice, and human experiences. Through both the words on the page and performances on the stage, students will relate to texts through discussion and in-depth analysis. Students will read both independently and in the form of reader's theater, bringing the words to life and co-constructing meaning and interpretation. Texts may include *Hamlet, Fences*, *Death of a Salesman*, *The Odd Couple*, *A Raisin in the Sun*, and *No Exit*. After completing this senior level course, students will leave Bay Ridge Prep with a highly developed capacity for exploring literature and constructing personal meaning from the texts they encounter, the playwrights they read, and each other.

Advanced Placement courses:

AP ENGLISH LITERATURE & COMPOSITION (*2 semesters, 1 credit*)
This junior-level English elective explores the nuances and dynamics of English literature and composition. Through employing a student-centered pedagogical style aimed at augmenting close reading, literary analysis, dramatic performance, and composition, students are introduced to some of the major canonical works from 1600 to the present day. Prominent texts include *The Scarlet Letter*, *Streetcar Named Desire*, *The Great Gatsby*, *Romeo and Juliet*, and *Educated*. These major texts are paired with units on poetry and short stories, highlighting marginalized voices and writers of color from diverse backgrounds. Throughout the year, students write extensively, exploring a range of styles from academic and autobiographical to creative and poetic. The course culminates in the AP exam, which students take at the conclusion of the year.

AP ENGLISH LANGUAGE & COMPOSITION (*2 semesters, 1 credit*)
This senior-level English course focuses on rhetorical analysis and the ways in which individuals use language to craft and articulate arguments. Using a thematic framework, students are exposed to non-fiction works (books, articles, essays, memoirs) written by an array of authors participating in various discourses related to human nature, society, civilization, culture, and philosophy. Participating students will be asked to study the arguments and tactics utilized by these authors, considering both their intrinsic effectiveness and how each argument fits into the larger discourse. Students will then be asked to form their own viewpoints and craft evidence-based arguments to support these conclusions. Topics include Human Nature, Education, Civil Rights, and Gender Equality. The course culminates in the AP exam, which students take at the conclusion of the year.

Elective courses:

THE ART OF WRITING (*2 semesters, ½ credit)* - This full year, 9th grade elective course explores the written word and written form through the mediums of poetry, memoir, short story, and scholarship. As students move through this journey into the written word, they gain exposure and mastery, finding and then refining a personal form of expression that gives them a greater feel and connection to the stories within them, while at the same time learning to master and refine an attention to the needs, tastes, and preferences of their intended reader.

COLLEGE ESSAY-WRITING WORKSHOP *(2 semesters, ½ credit)* - This full-year, 12th grade elective course is intended to help students generate their college essays—both their Personal Statements (general, can be sent to multiple colleges) and their Supplemental Essays (specific to each college). The course is structured like a Writing Workshop: students come in each week with a draft of their essay, and the class becomes an audience of readers and a team of peer-editors. Students will develop and sharpen their authentic writing voices. They will also learn: the styles, functions, and purposes of college essays, the art of providing writers with constructive feedback, and the art of revising and editing their writing to better meet the expectations of an audience. Students who complete this course will have a portfolio of multiple Personal Statements and Supplemental Essays to choose from when applying to colleges.

CREATIVE WRITING *(2 semesters, ½ credit)* - In this course, students will engage deeply with four major fields of creative writing (poetry, short fiction, personal narrative, and screen/playwriting) in order to build their skill across different forms. Experimenting with each of these four forms will allow each student to delve into their identity as a creative writer and find the mode of expression that best suits them. The goal will be for each student to eventually specialize in one of these creative forms and collaborate with their peers to publish a body of work at the end of the year.

Non-standard and Modified courses:

The following English courses may be identified as "modified" on the student transcript. These courses are typically only available to students in our Bridge Program, who have learning differences that require varying levels of modification to the curriculum and/or teaching methods. Such modifications may include pacing differences (i.e., a typical two-semester course may be extended to three or four semesters), specialized teaching methods, and access to accommodations such as extended time on exams and assignments, a reader for exams, smaller class placement, etc. The curriculum is aligned with NYS standards.

MODIFIED ENGLISH LITERATURE I *(2 semesters, 1 credit)* – In this modified course, the students explore literature from several different genres. Students read works including *Of Mice and Men*, *Romeo & Juliet*, *Inherit the Wind, Tuesdays with Morrie, The Five People You Meet in Heaven, The Alchemist, Siddhartha,* and various poems. The course is paired with the World History course, and is aligned with the NYS Regents curriculum, which includes Common Core standards.

MODIFIED ENGLISH II *(2 semesters, 1 credit)* – In this modified course, the students explore literature from the Middle Ages and the Renaissance. Students read works including *Beowulf*, *The Canterbury Tales*, and various Shakespeare plays. The course is paired with the Ancient History course, and is aligned with the NYS Regents curriculum, which includes Common Core standards.

MODIFIED AMERICAN LITERATURE *(2 semesters, 1 credit)* – In this modified course, students explore American Literature including works by Edgar Allan Poe, Washington Irving, F. Scott Fitzgerald, Charlotte Perkins Gillman, Nathaniel Hawthorne, and Anne Bradstreet. The course is paired with the American History course, and is aligned with the NYS Regents curriculum, which includes Common Core standards.

MODIFIED ENGLISH IV *(2 semesters, 1 credit)* –In this modified course, the students explore the connection between famous works of literature such as *Hamlet*, *One Flew over the Cuckoo's Nest*, and *A Streetcar Named Desire.* The students also explore several critical approaches to literature and practice using these approaches in their writing and discussion of the texts.

READING & WRITING *(2 semesters, 1 credit)* – This course is offered in each of a student's first three years as a daily component of the Bridge English curriculum and is separate from the students' Literature class. In the course, students work on writing and communication skills they will need in college and career. Topics include, but are not limited to, written organization, persuasive writing, grammar, research skills, and vocabulary.

READING, WRITING & RESEARCH *(2 semesters, 1 credit)* – This senior-level course is offered as a supplement to the modified English course. The course explores research and writing skills that students will need in college and career. Students conceive, research, write, and present their own research thesis on a topic of their choice. The course is typically taught by a speech and language professional.

STUDY SKILLS *(2 semesters, .25 credits)* – In this course, students will learn fundamental skills that will help them adjust to the workload of high school, such as time management, studying ahead, and project planning. Additionally, they will learn to be thoughtful and intentional in how they communicate with their teachers, making sure to advocate for themselves and ask for help when they need it. They will apply these skills to the courses in which they are enrolled, with the ultimate goal of making these habits a regular part of their academic approach.

HISTORY

Required courses:

GLOBAL HISTORY/ANCIENT WORLD HISTORY *(2 semesters, 1 credit)* – This course is designed to facilitate deep dives into the various factors, causes and players which comprise antiquity and the study of History itself. We will begin at the beginning- the Big Bang- and work our way from the origins of our earth to the first proto-humans (hominids), piecing together how and why our ancestors morphed from the Hunter-Gatherer-lifestyle into the kinds of people capable of both creating and inhabiting the early versions of civilization. From there we will explore some of the earliest civilizations- particularly the ones that arose in the "Fertile Crescent" (modern-day Iraq) and move through various others, from the Han Dynasty in ancient China to the Incan Empire in South America, culminating with the two civilizations that had the largest effects upon our culture: the ancient Greeks and the ancient Romans.

GLOBAL HISTORY/MEDIEVAL GLOBAL HISTORY *(2 semesters, 1 credit)* – Beginning in the Middle Ages (circa 800s-1200s) and continuing through the modern era, students will develop global literacy and knowledge of historical sources, belief systems, types of governance, geography, art, architecture, philosophy, economics, revolutions of politics and the mind, and the impact of technology and communication on civilization.

AMERICAN HISTORY *(2 semesters, 1 credit)* - This required course is offered to Juniors and includes topics such as early explorations of the Western hemisphere, colonization of the Americas by the Europeans, United States government and citizenship, manifest destiny, the Revolution, industrialization, the World Wars, cultural advancements, immigration and modern Western civilization.

MODERN WORLD HISTORY *(2 semesters, 1 credit)* - In this collegiate experience, students explore numerous areas including media literacy, political affiliations and ideologies, rhetoric and political analysis, the United Nations and its Sustainable Development Goals, Humanitarian Aid, Human Rights, and Human Trafficking. The study of Communism and other political ideologies, Global Economics and Finance, Cryptocurrency, International Trade, conflicts in the Middle East, Europe, South China Sea and a variety of other regions culminate in a simulation of the National Security Council.

Advanced Placement Courses:

AP EUROPEAN HISTORY *(2 semesters, 1 credit)* – This course explores European History from 1450 to the present day, examining European nations' interactions with each other and the rest of the world. The course begins with an exploration of the Renaissance, learning about the ideas and the individuals that shaped Western Culture, examining how those renaissance ideals eventually led to world-altering events such as the Age of Exploration, Scientific Revolution, Enlightenment, and Industrial Revolution. As the course moves closer to the Modern Age, we will understand how democratization changed the way states interacted with one another and examine the way European Nations have united in order to face the issues of the 20th and 21st centuries.

AP MACROECONOMICS *(2 semesters, 1 credit)* – This course will explore the principles that apply to an economic system as a whole. The course will use graphs, charts and data to analyze, describe and explain economic concepts, geopolitical connections and global finance. From examining how employment and inflation are measured to how monetary policy is implemented via the banking system and financial markets, the course will enable students to define these principles and models, learn to explain and determine outcomes of specific fiscal and monetary outcomes and create graphic models and visual representations of current geopolitical situations. The course culminates with an AP exam.

AP UNITED STATES GOVERNMENT & POLITICS *(2 semesters, 1 credit)* – This is an introductory college-level course in U.S. government and politics. Students cultivate their understanding of U.S. government and politics through analysis of data and text-based sources as they explore topics like constitutionalism, liberty and order, civic participation in a representative democracy, competing policy-making interests, and methods of political analysis.

AP UNITED STATES HISTORY *(2 semesters, 1 credit)* – This is a college level course covering pre-Columbian America through the first decade of the 21st Century. It is conducted as a seminar with a focus on analysis and interpretation of primary and secondary sources, research, and debate. The course prepares students for the AP US History exam, which, itself, is focused on analyzing primary and secondary sources. developing historical arguments and making historical connections.

Elective Courses:

ISSUES OF THE U.S. SUPREME COURT *(2 Semesters, 1.0 Credits)* – This class aims to expand students' knowledge of the US Supreme Court and track significant themes throughout the course of American History. Topics will include a review of early US History, the founding of our nation, the US Constitution, the Bill of Rights, and the Structure of Government.

Non-standard and Modified courses:

The following History courses may be identified as "modified" on the student transcript. These courses are typically only available to students in our Bridge Program, who have learning differences that require varying levels of modification to the curriculum and/or teaching methods. Such modifications may include pacing differences (i.e., a typical two-semester course may be extended to three or four semesters), specialized teaching methods, and access to accommodations such as extended time on exams and assignments, a reader for exams, smaller class placement, etc. The curriculum is aligned with NYS standards.

MODIFIED ANCIENT HISTORY *(2 semesters, 1 credit)* – This modified course begins with pre-historic earth and continues through the history of mankind, moving from the *Big Bang* through to *Ancient Rome*. Historical themes are introduced in various ways, with a particular emphasis on project-based learning. The NYS Regents curriculum is adhered to throughout.

MODIFIED MEDIEVAL HISTORY *(2 semesters, 1 credit)* – This course is the second year of a two-year long class that continues what was completed in ninth grade in terms of the study of world history, types of government, economic systems, types of evidence, map skills and geography, how geography has shaped history and culture and civilization. The course begins with the medieval era and continues into modern times. Cross-referencing across topics, time eras and countries is routine in preparation for the NYS Regent exam at the end of the year.

MODIFIED AMERICAN HISTORY *(2 semesters, 1 credit)* – This modified course spans the entire narrative arc of America, beginning with the age of European Colonialism and moving up through the modern era. Historical themes are introduced in various ways, with a particular emphasis on project-based learning. The NYS Regents curriculum is adhered to throughout.

MODIFIED WORLD HISTORY *(2 semesters, 1 credit)* – This modified course covers a wide range of topics, including Pollution/Global Warming, Racism, Global Politics, Defense, and various others. The curriculum for this section is partially student-directed, in that each classmate contributes at least one subject of inquiry.

MATHEMATICS

Required Courses:

ALGEBRA I *(2 semesters, 1 credit)* – This required course is generally offered to incoming freshmen. It introduces students to variables, algebraic expressions, equations, inequalities, functions, and all their multiple representations. In this class, students will develop the ability to explore and solve real-world application problems, demonstrate the appropriate use of graphing calculators, and communicate mathematical ideas clearly. This course lays the foundation for mathematical literacy that will help students be successful in every subsequent course in mathematics. This course is aligned with New York State and national standards.

ALGEBRA II *(2 semesters, 1 credit*; *Prerequisites: Algebra I, Geometry*) – This required course is a continuation and extension of Algebra I. Within the course, the number system will be extended to include imaginary and complex numbers. Polynomial, absolute value, radical, trigonometric, exponential, and logarithmic functions will be studied. Data analysis will be extended to include measures of dispersion. Arithmetic and geometric sequences will be expressed in multiple forms and will be evaluated. Right triangle trigonometry will be expanded to include the investigation of circular functions, and problem situations requiring the use of trigonometric equations and identities will also be investigated. This course is aligned with New York State and national standards.

GEOMETRY *(2 semesters, 1 credit; Prerequisite: Algebra I*) – This course is designed to emphasize the study of the properties and applications of common geometric figures in two and three dimensions. It includes the study of transformations and right triangle trigonometry, and the use of proofs to solve properties of geometric figures. Inductive and deductive thinking skills are used in problem solving situations, and practical applications of concepts are emphasized. This course is aligned with New York State and national standards.

Advanced Placement Courses:

AP CALCULUS AB *(2 semesters, 1 credit; Prerequisites: Algebra 1, Geometry, Algebra 2*) -. This course builds on the three big ideas of AB Calculus: limits, derivatives, and integrals and the Fundamental Theorem of Calculus. Embedded throughout the big ideas are the mathematical practices for AP Calculus: reasoning with definitions and theorems, connecting concepts, implementing algebraic/computational processes, connecting multiple representations, building notational fluency, and communicating mathematics orally and in well-written sentences. This course follows the curriculum framework set forth by the College Board for gaining AP credit and students are expected to take the AP Calculus AB exam in May.

AP CALCULUS BC *(2 semesters, 1 credit)* - This course serves as an extension of AP Calculus AB. Main topics include limits, derivatives, applications and analysis of derivatives, applications of integration, differential equations and slope fields from the AB exam. In addition, there will be further concepts of differentiation and integration as well as applications of parametric

equations, polar equations, sequences, series, vectors (velocity & acceleration), and Euler's method. This course is aligned with the College Board's AP Calculus BC curriculum and students are expected to take the AP Calculus BC exam in May.

AP PRECALCULUS *(2 semesters, 1 credit)* - This course prepares students for other college-level mathematics and science courses. Through regular practice, students build deep mastery of modeling and functions, and they examine scenarios through multiple representations. The course framework delineates content and skills common to college precalculus courses that are foundational for careers in mathematics, physics, biology, health science, social science, and data science.

AP STATISTICS *(2 semesters, 1 credit)* - This course is an introductory college-level statistics course that introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students cultivate their understanding of statistics using technology, investigations, problem solving, and writing as they explore concepts like variation and distribution; patterns and uncertainty; and data-based predictions, decisions, and conclusions.

Elective Courses:

CALCULUS *(2 semesters, 1 credit; Prerequisites: Algebra I, Geometry and Algebra 2*) This is an introductory course which covers differential and integral calculus and their applications. Occasionally offered as an option for students who wish to learn calculus at a less demanding pace than required by the AP Course.

FINANCE *(2 semesters, 1 credit, Prerequisite: Algebra I*) – Designed as a primer for undergraduate studies in general economics, this senior level course explores both microeconomic and macroeconomic principles within the field of Finance. With a curriculum that hones in on practical as well as theoretical content within the field, Finance deals with how to buy and rent real estate, the history of American stock market, how companies use marketing strategies to attract consumers, supply and demand curves, price equilibrium, Wall Street culture, and countless other aspects of personal and corporate Finance. Students who complete senior Finance gain the distinct advantage of walking into college level economics classes with the edge of having worked through these traditionally college-level constructs in high school.

PRECALCULUS *(2 semesters, 1 credit; Prerequisites: Algebra I, Geometry and Algebra 2*) – This elective course prepares students for further study in Calculus by covering topics such as functions and their characteristics, analysis of graphs and application to real-world situations, summation, higher-order functions, trigonometry and matrices. This course is aligned with New York State and National Standards.

PRECALCULUS HONORS/INTRODUCTION TO CALCULUS *(2 semesters, 1 credit; Prerequisites: Algebra I, Geometry and Algebra 2*) – This course is offered as an option to prepare students for Advanced Placement Calculus, as either a single semester Pre-Calculus Honors Course with a second semester on Introductory calculus topics, or as a full year 2 semester Precalculus Honors

course. The Precalculus portion of the course covers topics such as functions and their characteristics, analysis of graphs and application to real-world situations, summation, higher-order functions/polynomials, trigonometry and matrices. The Introductory calculus portion examines the beginning of Calculus including limits and derivation. This course is aligned with New York State and National Standards.

STATISTICS (*2 Semesters, 1 credit*) – This elective course is generally offered to seniors. It introduces the basics of statistical analysis. It begins with a survey of statistics covering the basics including population, sampling methods, mathematical analysis of data, and best practices for experimentation. The class then focuses on analyzing existing statistical data as well as performing a basic study using surveys and observation. Students are required to write several papers where they must analyze the statistics used in source materials. This course offers a good bridge for studying social sciences in a higher education environment.

Non-Standard and Modified Courses:

The following mathematics courses are identified as "modified" on the student transcript. These courses are typically only available to students in our Bridge Program, who have learning differences that require varying levels of modification to the curriculum and/or teaching methods. Such modifications may include pacing differences (i.e., a typical two-semester course may be extended to three or four semesters), specialized teaching methods, and access to accommodations such as extended time on exams and assignments, a reader for exams, smaller class placement, etc. The curriculum is aligned with NYS standards.

MODIFIED ALGEBRA 1A (*2 semesters, 1 credit*) – This course includes topics such as solving equations, factoring, and the study of linear, exponential, quadratic, radical, and rational functions. A review of relevant pre-algebra topics is built into the course, and the class is paced to be completed over a two-year sequence. The course is aligned with New York State standards.

MODIFIED ALGEBRA 1B *(2 semesters, 1 credit)* – This course is the second half of a two-year sequence that covers the NYS curriculum for Algebra I. Students continue their study of Algebra, with an emphasis on more advanced techniques and an introduction to concepts that will be learned in Geometry.

MODIFIED ALGEBRA 1C/INTRO TO GEOMETRY *(2 semesters, 1 credit)* – This required course serves as an introduction to Geometry and a review of key Algebra topics for students who struggle with mathematics. Depending on student need, the course provides additional review of Algebra topics and seeks to strengthen understanding of core math principles in addition to covering basic concepts of geometric figures.

PERSONAL FINANCE *(2 semesters, 1 credit)* – This course explores the basics of managing one's own finances, global and personal financial concepts, and individual responsibility for managing money. Topics such as the use of credit cards, bank accounts, paying bills, and retirement savings are addressed.

SCIENCES

Required Courses:

BIOLOGY + LAB *(2 semesters, 1 credit)* – This required introductory course explores topics such as cellular biology, evolution, genetics, ecology, and human body systems and includes a weekly inquiry-based lab component., Students are challenged to think scientifically using the scientific method, data analysis and argumentation.

CHEMISTRY + LAB (2 semesters, 1 credit) – This required course offers an introduction to the principles of chemistry, in line with the national and state standards. While engaged in this course, students will further develop their inquiry, experimental, and analysis skills. Through the development of these skills as well as modeling, mathematical reasoning, and critical thinking and writing, we will attempt to ask questions about and explain the interconnections among science, technology, society, and the environment. Topics of exploration will include properties of matter, atomic structure, periodic trends, and descriptive and mathematical analysis of chemical reactions.

PHYSICS + LAB *(2 semesters, 1 credit)* – This elective course introduces students to basic principles of physics. Topics covered include mechanics, optics, waves, vibrations, electricity and magnetism. The course includes project-based learning in the format of quarterly projects. Each project challenges students to incorporate basic principles of physics and engineering, along with creative design, to accomplish a specific task.

Advanced Placement Courses:

AP BIOLOGY + LAB *(2 semesters, 1 credit)* – AP Biology is an elective course that follows a curriculum framework set forth by the College Board. Students cultivate their understanding of biology through inquiry-based investigations as they explore the following topics: evolution, cellular processes, energy and communication, genetics, information transfer, ecology, and interactions. The AP Biology course outlined in the College Board framework deemphasizes a traditional "content coverage" model of instruction in favor of one that focuses on enduring, conceptual understandings and the content that supports them. This approach enables students to spend less time on factual recall and more time on inquiry-based learning of essential concepts, helping them develop the reasoning skills necessary to engage in the science practices used throughout their study of AP Biology. This framework encourages student development of inquiry and reasoning skills, such as designing a plan for collecting data, analyzing data, applying mathematical routines, and justifying arguments using evidence. The result will be readiness for the study of advanced topics in subsequent college courses.

AP ENVIRONMENTAL SCIENCE + LAB *(2 semesters, 1 credit)* - This elective course follows the curriculum framework set forth by the College Board which is stated as follows: The AP Environmental Science course is designed to engage students with the scientific principles, concepts and methodologies required to understand the interrelationships within the natural world. The course requires that students identify and analyze natural and human-made environmental

problems, evaluate the relative risks associated with these problems and examine alternative solutions for resolving or preventing them. Environmental science is interdisciplinary, embracing topics from geology, biology, environmental studies, environmental science, chemistry and geography."

AP CHEMISTRY + LAB (*2 semesters, 1 credit)* - AP Chemistry is an introductory college-level chemistry course that follows the curriculum framework set forth by the College Board. In this course we engage deeply in inquiry-based, hands-on learning in order to explore the chemical foundations of the world. The course is centered on the practices of science, with the ability to create and evaluate models, design and execute laboratory investigations, and use mathematical reasoning at the forefront. Topics covered will include atomic structure, intermolecular forces and bonding, chemical reactions, kinetics, thermodynamics, and equilibrium. This course requires a pre- or corequisite of introductory chemistry.

AP PHYSICS 1 + LAB *(2 semesters, 1 credit)* –AP Physics 1 is an algebra-based, introductory college-level physics course that follows the curriculum framework set forth by the College Board. In this course we use physics as the medium through which we develop our inquiry, experimentation, and critical thinking/analysis skills. The ability to use mathematical thinking to reason and craft arguments logically and coherently through both discourse and writing will be essential. Topics covered include one- and two-dimensional kinematics and dynamics, circular motion and gravitation, energy and momentum conservation, simple harmonic motion, and rotational motion.

Advanced Scientific Research:

SCIENCE RESEARCH & DESIGN *(2 semesters, 0.5 credits)* – This elective course introduces students to scientific techniques, investigation skills, and problem solving through ongoing research projects that will serve as a foundation for conducting further scientific research in subsequent semesters. Students taking this elective class typically re-enroll in subsequent years to continue the research that they are already engaged with, or to develop new guided research projects once they have the skills to do so. Students later in the progression will complete data collection, analyze data, and develop a research paper for publication in the school science journal. Results of each student's study are presented at an end-of-year symposium.

Elective Courses:

ANATOMY AND PHYSIOLOGY *(2 semesters, 1 credit)* – This elective course will be a mixture of lecture and discussion, with a goal of anatomical terms/diagrams/physiological mechanisms being the jumping-off point for lively, intellectual, and respectful discussions. As each system is discussed, starting with anatomy and physiology, there will be opportunities to conduct mock 'medical rounds', examine case studies, conference with working physicians, and in various other ways, interact with the system beyond the knowledge acquisition phase. System studies will include Integumentary, Skeletal, Muscular, Nervous, Endocrine, Cardiovascular, Lymphatic, Digestive, Respiratory, Urinary, and Reproductive. Interwoven Themes include the history of Medical Discoveries, Effects of Disease, Diagnostic Medicine, Medical Treatments, Degenerative Changes, and Effects of Aging.

ANIMAL BEHAVIOR *(2 semesters, 1 credit)* – This elective course introduces students to a unique facet of animal sciences involving direct observation, peer-reviewed journal articles, and in-depth coursework. This course explores the principles of animal behavior from several perspectives, including the lenses of classical ethology, behavioral ecology and sociobiology, comparative psychology, behavioral genetics, behavioral endocrinology, and neuroethology. Topics include migration, habitat selection, mating, parental care, hunting, communication, social behaviors, and intelligence.

CURRENT TOPICS IN SCIENCE *(2 semesters, 1 credit)* – This elective science course covers a variety of topics that are both engaging and relevant to today's current social and political climate. Topics can include forensic science, astronomy, electronics, and issues related to the various STEM (science, technology, engineering and math) fields but the list changes based on student interests and current events. As this is an elective course, the course may delve into content and themes that students have a particular interest in, or topics that they may not have encountered before.

SCIENCE, TECHNOLOGY & SOCIETY STUDIES *(2 semesters, 1 credit)* - Topics discussed in Science, Technology, and Society studies (STS) center around the broader connections we can form between scientific concepts and human society. STS explores the driving question of how scientific literacy is vital in addressing individual, community, and societal challenges in a modern world where technology – and its many consequences – is evolving at an accelerating rate. Foundational content classes such as biology and chemistry traditionally focus on the "what" of science when they cover material; STS builds on this fundamental knowledge by centering the "how" and "why." Students can expect to further develop their research and critical analysis skills as well as their ability to facilitate productive and cohesive peer interactions.

Non-Standard and Modified Courses:

The following courses are identified as "modified" on the student transcript. These courses are typically only available to students in our Bridge Program, who have learning differences that require varying levels of modification to the curriculum and/or teaching methods. Such modifications may include pacing differences (i.e., a typical two-semester course may be extended to three or four semesters), specialized teaching methods, and access to accommodations such as extended time on exams and assignments, a reader for exams, smaller class placement, etc. The curriculum is aligned with NYS standards.

MODIFIED BIOLOGY + LAB (*2 semesters, 1 credit)* – This course introduces students to topics such as evolution, genetics, ecology, and the human body. The course is adapted to students' learning differences and interests while strengthening scientific critical thinking skills. The course includes a lab component and is aligned to state and national standards.

MODIFIED CHEMISTRY + LAB (*2 semesters, 1 credit)* – This course introduces students to topics such as atomic structure, the periodic table, chemical reactions, properties of matter and kinetic molecular theory. Goals of this course include the development of inquiry, experimental, and analytical skills. This course is designed to include frequent hands-on experience to demonstrate intangible concepts and collect real-world data.

WORLD LANGUAGES

FRENCH I OR SPANISH I *(2 Semesters, 1 Credit)* – First-year language courses stress the fundamentals of pronunciation, grammar, practical vocabulary, useful phrases, and the ability to understand, speak, read, and write at a basic level. Using fundamental sentence structures in the present and past tenses, students practice reading and writing. Discussions are included covering the geography, customs, culture, and literature of relevant countries, while completing several projects that relate to culture and customs.

FRENCH II OR SPANISH II *(2 Semesters, 1 Credit)* – Second-year language courses are a continuation of year one, and complete studies in elementary grammar. Students delve further into development of conversational, reading, and writing skills. Excercises include the reading of texts with emphasis on oral expression and advanced writing projects stressing the different tenses.

FRENCH III OR SPANISH III *(2 Semesters, 1 Credit)* – Third-year language incorporates a review of grammar, with special emphasis on idiomatic construction and expressions. Throughout the year students learn more advanced tenses, which helps them complete more advanced reading and writing assignments, as well as develop increased communicative proficiency. Each reading and writing assignment advances the grammar of each student allowing them to be able to have dialogue outside of the classroom.

FRENCH IV OR SPANISH IV *(2 Semesters, 1 Credit)* – These elective classes provide the student with an opportunity to acquire intermediate fluency in their chosen language, with an emphasis on natural basic colloquial usage. New vocabulary and idiomatic phrases are emphasized as the student submits their more advanced assignments. These courses are not required and are typically offered to students who want to advance beyond the first three courses of the language sequence.

FINE ARTS

PERFORMING ARTS ELECTIVES - DANCE:

DANCE INTRO *(9th Grade, 2 Semesters, 0.5 Credits)*
This course provides an introduction to the proper etiquette of utilizing and understanding the layout of the dance space. Students will learn the basic vocabulary of Ballet and implement the use of that vocabulary into their movements. They will study historical ballet dance artists that have helped to develop ballet styles and learn an understanding of proper body alignment through exercise and choreography. Students will be introduced to the elements of dance forms to help them perform and further develop their own choreography.

DANCE I *(10th Grade, 2 Semesters, 0.5 Credits)*
This course focuses on prior understanding of proper body alignment carried over from the Intro course, with further studies of the elements of dance: space, time, force, levels, shape and form. Understanding these elements is key to great work. Students will look at different genres of dance, including jazz, modern and tap-dancing artists. We study the history of Jazz Dancers and the artists that made the form famous, and begin dance composition (choreography).

DANCE II: *(11th Grade, 2 Semesters, 0.5 Credits)*
This course furthers the dancer's studies by exploring their interest and continuing to learn how to implement the elements of dance into their routines. Such elements help to improve their artistic abilities by adding a combination of these elements to the dance, giving them compositional forms of balanced movements, unity, contrast, repetition, transition, variation, development, climax, resolution, proportion, sequence and/or harmony. The course also focuses on rhythm- tempo rate and speed of movement.

DANCE III *(12th Grade, 2 Semesters, 0.5 Credits)*
The course focuses on refining movements and self-awareness of controlled movements and covers Modern and Contemporary dance studies of various artists. Students will implement the modern and contemporary styles into their work and create their own dance pieces; choreography will be studied and critiqued. Students can also explore other interests such as tap dancing or hip hop.

DANCE - INDEPENDENT STUDY *(12th Grade, 2 Semesters, 0.5 Credits)* This advanced course is for students with interest in developing their choreographed pieces for college auditions.

PERFORMING ARTS - MUSIC:

MUSIC APPRECIATION *(9th Grade, 2 semesters, 0.5 credits)*
All 9th grade students spend the first quarter of the year rotating through the various arts classes as they work to determine which course they will spend the remainder of the school year enrolled in. Freshman Music Appreciation is an overview course in which students will be introduced to the elements of music as it relates to pitch, rhythm and beat, lyric, and dynamics. Students will study a variety of different types of music from around the world practicing listening skills, musical analysis

and observation, and utilizing musical vocabulary. Hands-on instrumental skills are practiced on folk instruments such has African-style hand drums, pianos, ukuleles and guitars. Additionally, students will be performing, composing, and arranging music as a group as well as in SoundTrap, our class digital-audio-workstation application.

MUSIC PERFORMANCE (11th and 12th Grade, 2 semesters)
Students enrolled in this course will be focusing on ensemble performance on a major instrument of their choosing. Students are expected to read and write on the musical staff, and will be instructed in the fundamentals of music theory, both written and aural. Mandatory performance dates include the Winter Festival and Fine Arts Fusion night in the spring. Other performance opportunities may arise throughout the school year.
In addition to performing, students will examine the workings of the music business, the historical context of the chosen performance pieces, care and maintenance of their instruments, and music recording and production skills. Students are expected to use musical vocabulary as we listen to and analyze the music that we play and the we encounter outside in our daily lives. Students may also have the ability to independently participate in NYSSMA solo festival if they so choose.

MUSIC PRODUCTION (*2 semesters, 0.5 credits)*
Students enrolled in this elective class will learn to use the tools of a Digital Audio Interface (DAW) such as Logic Pro, StudioOne and Soundtrap to compose, produce, and edit music. Students will record audio and use virtual instruments, study basic music theory, and learn the best practices for music production.

PERFORMING ARTS - THEATER:

THEATER I *(9th Grade, 2 Semesters, 0.5 Credits)*
This course provides freshmen students with a broad overview of basic terminology, concepts, and historical developments in theater as well as introduces students to basic acting techniques and character development. Students gain perspective into multiple theatrical traditions and begin applying what they have learned through script analysis, monologues, and scene work.

THEATER II (10th Grade, 2 Semesters, 0.5 Credits) - This elective class allows students to continue to build their performance skills through improvisation and scene work while also introducing them to directing and elements of theatrical production. Based on student interest, students will also have the opportunity to learn about design for the stage (lighting, sound, costumes, props) as well as puppetry.

THEATER III *(11th Grade, 2 Semesters, 0.5 Credits)*
This elective course focuses on deepening student understanding and skills through long-form improvisation, scene study and full-length script analysis. In addition to introducing more advanced acting and collaboration techniques, students will be introduced to the art of dramaturgy and will have the opportunity to begin developing their own portfolio of repertoire.

THEATER PORTFOLIO *(12th Grade, 2 Semesters, 0.5 Credits)*
This elective course is designed to be a practical course to help students prepare to take on roles in theater outside of the high school classroom. Students may choose either the performance track or

production track based on their individual interests. Students in the production track may choose to specialize in directing, stage management, dramaturgy, playwriting, or design, while students in the performance track may specialize in either musical or non-musical performance. All students will complete a theatrical portfolio of their work over the course of the year tailored to their chosen track.

VISUAL ARTS:

DIGITAL ARTS I *(2 Semesters, 0.5 Credits)*
This course provides an overview of graphic design concepts and technical features of the Adobe suite, using Photoshop, Lightroom, Bridge (CameraRaw), and Premiere Pro. Students will have the opportunity to create complex composite imagery and learn fundamental techniques or graphic editing for photography. Additionally, they will also preview intro editing techniques for film at the end of the year.

DIGITAL PHOTOGRAPHY/DIGITAL ART II *(2 Semesters, 0.5 Credits)*
This course provides instruction on the technical terminology, mechanical interfaces and procedures, as well as the elements of design, as the fundamentals of digital or traditional photography. Students will gain experience using Adobe Camera Raw, Lightroom, and Photoshop editing tools in order to enhance latent detail. Additionally, students will also be introduced to the primary functions of a DSLR camera. Through classroom, critique, and homework assignments, this course will give students the opportunity to create a body of work that represents the scope of their personal and conceptual abilities.

DIGITAL ARTS III *(2 Semesters, 0.5 Credits)*
This course provides an overview of graphic design concepts and technical features of the Adobe suite, using Photoshop, Lightroom, Bridge (CameraRaw), Illustrator, InDesign, and Animate. Students will have the opportunity to explore narrative construction and character creation through storyboarding and comic creation, as well as digital editing and painting techniques.

DIGITAL ARTS IV *(2 Semesters, 0.5 Credits)*
The course provides specialized instruction for personal, portfolio, and commercial projects that span the digital platform, integrating design, painting, and animation utilizing the Adobe suite. This course goes beyond the fundamentals, invoking more enhanced features of Photoshop, Lightroom, Bridge (CameraRaw), Illustrator, InDesign, Animate, and Premiere Pro. Students will also analyze, through critique, and construct their own visual styles by exploring historical, as well as contemporary, techniques.

STUDIO ART I: FOUNDATION *(2 Semesters, 0.5 Credits)*
This course integrates ancient history and fine arts, introducing art from different cultures around the world. Students will learn the structures of visual language such as Elements of Art: line, shape/form, color, texture/pattern and space and Principles of Design: balance, rhythm, unity, contrast and emphasis. Other topics include perspective, proportions of the body and face and color theory. Students will also develop and refine their written and verbal skills in interpretation and analysis of artwork.

STUDIO ART II: INTRODUCTION TO ARTISTS, ART PERIODS, TECHNIQUES & MATERIALS *(2 Semesters, 0.5 Credits)*
This course focuses on art styles and movements in art history (realism, impressionism, abstract art, etc.). Students will apply that knowledge to their own artistic creations through drawing, painting, and sculpting. They will also explore personal themes and concepts in various projects while developing their ability to respond, analyze, and interpret their own artwork as well as others.

STUDIO ART III: INTRODUCTION TO CONTEMPORARY ARTISTS, TECHNIQUES AND MATERIALS *(11th Grade, 2 Semesters, 0.5 Credits)*
This course introduces students to contemporary artists. Students will continue to explore personal themes using various mediums and methods in drawing, painting and sculpture. Other techniques and processes that will be covered will be bookmaking, printmaking, and stretching canvas. They will refine their ability to respond, analyze, and interpret their own artwork as well as others through art critiques.

STUDIO ART IV: INTRODUCTION TO CONTEMPORARY ARTISTS, TECHNIQUES AND MATERIALS II *(12th Grade, 2 Semesters, 0.5 Credits)*
This course focuses on refining art vocabulary, art skills and techniques through drawing, painting, and sculpture. Students will continue to explore personal themes using various mediums and methods. Students will continue to learn about contemporary artists. They will continue to refine their ability to respond, analyze, and interpret their own artwork as well as others through art critiques.

Advanced Placement Courses:

AP 2-D ART AND DESIGN *(2 Semesters, 0.5 Credits)*
Prerequisite: Foundation
This course encourages and prepares students to be independent thinkers and use their creativity and knowledge of art in producing a body of artwork. Students will develop a portfolio that will consist of artwork done in any 2-D medium such as acrylic, watercolor, pen & ink, pencil, oil pastel, charcoal, collage, mixed media, and photography. Students will demonstrate their skill and master their abilities and approaches in problem solving and ideation through weekly assignments, critiques, and discussions.

AP DRAWING *(2 Semesters, 0.5 Credits)*
Prerequisite: Foundation.
This course encourages and expects students to be independent thinkers and use their creativity and knowledge of art in creating a body of artwork. Students will develop a portfolio that will consist of artwork created using any form of "mark making" with materials such as acrylic, watercolor, pen & ink, pencil, oil pastel, charcoal, and mixed media. Students will demonstrate their skill and master their abilities and approaches in problem solving and ideation through weekly assignments, critiques, and discussions.

AP 3-D ART AND DESIGN *(2 Semesters, 0.5 Credits)*
Prerequisite: Foundation
This course is available to students who would like to engage in a more intense study of 3-D art. Students will develop a body of artwork that includes various types of sculpture such as sculpture in the round, relief sculpture, assemblage, and kinetic sculpture. They will also examine techniques such as modeling, carving, and joining/constructing. Students will develop a body of work that will be submitted at the end of the course that will show mastery in concept, composition and execution of their ideas.

PHYSICAL EDUCATION

HEALTH *(2 Semesters, 0.5 Credits)* – This required course educates students to all areas of personal health, wellness, and individual lifestyle. Topics covered include social and emotional health, promoting safe and healthy relationships, abuse and violence prevention, and communicable diseases. Emphasis is placed on acquiring knowledge and assuming responsibility for one's own health.

PHYSICAL EDUCATION *(2 Semesters, 0.5 Credits)* – This course is offered at each grade level from 9-12, and includes instruction in areas of personal fitness, exercise training, and sports instruction. Activities vary across terms and years, and may include additional specializations, such as dance, yoga and Tae Kwon Do.

SOCIAL SCIENCES

Elective Courses:

CLASSIC MOVIE APPRECIATION *(1 semester, 0.25 credits)* – In this elective, students will watch and learn about movies from the two golden ages of American movie making (the 1930s/40s and the 1970s), as well as from other periods. They will write short reviews/response papers about each movie and one final essay about a movie of their choice. Movies to be screened include *The Adventures of Robin Hood; Casablanca; Some Like It Hot; Dr. Strangelove; 2001; Chinatown;* and *The Godfather, Parts I & II.*

INTRODUCTION TO NEUROPSYCHOLOGY *(2 semesters, 1 credit)* – This elective course focuses on developing an understanding of brain-behavior relationships. Through the use of lectures, videos, projects and class activities, students learn about the basic anatomy of the brain, explore how neurons function, and study cognitive functions that include language, memory, attention, and social/emotional skills.

*INTRODUCTION TO PSYCHOLOGY *(2 semesters, 1 credit)* – This elective course introduces students to the scientific study of human cognition, emotion, and behavior. The course covers a broad range of key topics in the field, including neurology, sensation and perception, consciousness, learning theories, psychological disorders, and group/environmental factors that influence behavior.

SOCIOPATHS, PSYCHOPATHS & CULTS *(2 semesters, 1 credit)* – This elective course dives deeply into the minds and behaviors of people who exhibit antisocial and deviant behaviors. Students will examine criminal cases, watch interrogations, interviews and documentaries of some of both famous and lesser-known examples of serial killers, cult leaders and corporate psychopaths.

TECHNOLOGY & COMPUTER SCIENCE COURSES

Elective Courses:

COMPUTER PROGRAMMING *(2 semesters, 0.5 credits)* – This class introduces students to the basics of computer programming. Students will study Controlled Flow: Commands, conditional statements, controlled loops, events, and primitive data. Students will then develop an understanding of object-oriented programming, inheritance and abstraction. Students will use logical and critical thinking to solve simple problems and apply those solutions to increasingly complex problems by creating algorithms.

VIDEO GAME DESIGN AND CODING PROJECTS *(2 semesters, 0.5 credits)* – This class focuses on constructing gaming projects based on information acquired from the prior year of instruction. This class does not mandate a computer science class as a prerequisite, as the class splits into project groups where some can learn fundamentals while other students will work on building more advanced projects. Students will work on structuring and organizing coding teams and working on specific projects, naming conventions, project and time management in each of its stages. Students will use Game Maker Studio 2 software and Microsoft Visual Studio Community.

Advanced Placement Courses:

AP COMPUTER SCIENCE A *(2 semesters, 1 credit)* This class focuses on building skills particularly in the Java programming language. AP Computer Science A is an introductory college-level computer science course. Students cultivate their understanding of coding through analyzing, writing, and testing code as they explore concepts like modularity, variables, and control structures.

AP COMPUTER SCIENCE PRINCIPLES – *(2 semesters, 1 credit)* This class is not limited to Java and actually allows students to study any programming language they wish. AP Computer Science Principles is an introductory college-level computing course that introduces students to the breadth of the field of computer science. Students learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs. They incorporate abstraction into programs and use data to discover new knowledge. Students also explain how computing innovations and computing systems (including the internet) work, explore their potential impacts, and contribute to a computing culture that is collaborative and ethical.

Bay Ridge Prep reserves the right to make changes to its course catalog, as necessary. Courses may be added or deleted from the roster, based on circumstances such as class size, interest, availability of staff, etc. All course descriptions are accurate as of the date of this publication.

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