



2020-2021 Course Catalog

virtus | scientia | felicitas

Humanities

Classical Literature (23.061)

In this course, students will study the founding works of great literature. They will read Homer, the world's first great storyteller, Sophocles, a genius of tragedy, Virgil, perhaps the most talented poetic craftsman in history, and Shakespeare, the master of our own language. The goal is to engage with these great minds and participate in the worlds their stories create. Students will discover what makes these authors and their literature great. They will examine the questions they ask about human nature and begin to explore some of the answers they provide. Instead of racing through excerpted versions of these works, this course moves deliberately through complete texts, delving into them in great detail.

Course Texts: Homer's *The Iliad*, Sophocles' *Antigone* and *Oedipus Rex*, Virgil's *The Aeneid*, William Shakespeare's *Julius Caesar*

British Literature (23.052)

In the opening lines of *Sir Gawain and the Green Knight*, the Pearl Poet cautions the reader that he enters a world "Where war and marvels / Take turns with peace, / Where sometimes lightning trouble / Has struck, and sometimes soft ease." In this class, students explore the intersection of "wonder and woe," inquiring into the temperamental nature of man's fate. The course follows a standard, chronological survey structure of British Literature. It begins in the 14th century with the final days of courtly literature, moves through the cultural overhaul of 17th century Britain, encounters the Restoration Era and dawn of the novel, and concludes with the writings of Dickens in the midst of Queen Victoria's reign.

Course Texts: *Sir Gawain and the Green Knight*, Chaucer's *The Canterbury Tales*, Milton's *Paradise Lost*, Shakespeare's *Hamlet*, Austen's *Pride and Prejudice*, Dickens' *A Tale of Two Cities*

American Literature (23.051)

After studying the founding myths of our civilization in Classical Literature and the essential stories of our intellectual inheritance in British Literature, American Literature will afford students the opportunity to place themselves in "this soil, this air." Beginning with Walt Whitman's famous self-celebration, students consider the nature and formation of the American literary self as it emerges during the second half of the 19th century. Hawthorne's genre-bending *The Scarlet Letter* reflects on the early days of the American colonies in order to trace the formation of the American identity from its roots. In poetry and essays, Whitman, Emerson, and Thoreau articulate this project of forging an American literary identity, focusing on the natural world and its role in providing the language and freedom to write American books and live American lives. Next, because a period of exile is often essential to an understanding of self and homeland, students go to sea with Ishmael in *Moby Dick*. Mark Twain extends this theme of "journey away from home" in *The Adventures of Huckleberry Finn*. Students spend the second semester with three of the best writers the South has to offer: William Faulkner, Flannery O'Connor, and Robert Penn Warren. Finally, for a break from the South's gothic tales, students will delve into the poetry of Emily Dickinson and Robert Frost at the close of the course.

Course Texts: Nathaniel Hawthorne's *The Scarlet Letter*, Herman Melville's *Moby Dick*, Mark Twain's *The Adventures of Huckleberry Finn*, selected stories by Flannery O'Connor, Robert Penn Warren's *All the King's Men*, selected works by William Faulkner, selected poetry by Emily Dickinson, selected poetry by Robert Frost

Modern European Literature (23.063)

Students finish the 11th grade year asking questions about human responsibility and the burdens of living in time. The 12th grade year expands this inquiry by examining how a free man navigates a world where every individual has already failed to fulfill his inherent responsibilities to his fellow man. The horror of this failure and the very burden of freedom compose this modern dilemma as authors wrestle with what it means to be in the world. The Modern European Literature Course will help students reconcile themselves with the implications of their own existence while providing a notion of redemption as they move towards fully exercising their freedoms in the wider world. In addition, students will spend the better part of second semester drafting and writing their senior theses, a capstone writing experience that pulls together the seminal questions of the Western Tradition.

Course Text: Dostoevsky's *Notes from Underground*, Camus' *The Fall*, and Dostoevsky's *Brothers Karamazov*.

Composition (23.034)

Writing is essential, and the ability to write well is the bedrock of academic success. Students write all the time, in their texts, emails, and journals, but writing in an academic setting carries its own rules. This course explores and explains how academic writing is created. By incorporating diagramming, model sentences, mentor texts, imitative writing, self-editing strategies, annotating, close reading, and writing workshops into daily study, students gain knowledge and practice of the methods and skills necessary to create dynamic, logical academic prose. Students polish their sentences and paragraphs in the first nine weeks, paying special attention to advanced sentence construction and the cohesive construction of essays. In the second nine weeks, students study rhetoric and logical reasoning to build writing skills.

Course Texts: Cindy Devito's *Grammar by Diagram*, Don Kilgallon's *Sentence Composition for High School*, Strunk and White's *The Elements of Style*, Sylvan Barnet's *From Critical Thinking to Argument*

Advanced Composition (23.064)

This course is available to students who wish to develop their writing skills beyond the required Composition course. It will act as a small group writing workshop in which students learn to thoughtfully critique and praise peer work. Imitation lies at the center of this course, and students may expect to delve into the work of particular writers, such as F. Scott Fitzgerald, James Joyce, and Ernest Hemingway, as they learn to describe, define, and persuade. Students will work daily to discover the structure and enduring attraction of beautiful texts, in effect, apprenticing themselves to great authors to develop a rich, personal writing style of their own. Each exercise will treat communication as the art it is, driving students to consider the purpose of writing, which practices make writing effective, and the relationship between truth and eloquence. Teacher recommendation is required.

Course Texts: Gregory Roper's *The Writer's Workshop*, Phillip Lopate's *The Art of the Personal Essay*, Strunk and White's *The Elements of Style*, texts by various authors

Western Civilization I (45.083)

Western Civilization I is the first of two sections of the high school European History curriculum. The purpose of this course is to provide students with an understanding of the origin and nature of Western Civilization. Although Western Civilization I principally covers the ancient Greeks in the Fall Semester and the ancient Romans in the Spring Semester, the curriculum also explores other contributors to our civilization, such as the Paleolithic and Neolithic societies and the ancient Celts and Germans. At the end of the year, students will be able to speak about the ancient world and its importance as our cultural progenitor.

Course Texts: Thomas R. Martin's *Ancient Greece: From Prehistoric to Hellenistic Times*, Zoch's *Ancient Rome: An Introductory History*, M.I. Finley eds. *The Portable Greek Historians: The Essence of Herodotus, Thucydides, Xenophon, Polybius*, Robin Waterfield trans. *Greek Lives* by Plutarch, Robin Waterfield trans. *Roman Lives* by Plutarch, Benjamin Jowett trans. *Trial and Death of Socrates: Four Dialogues* by Plato

Western Civilization II (45.092)

Western Civilization II is a continuation of Western Civilization I. In Western Civilization II, the curriculum focuses on the ways the legacy of the ancient world was both transmitted and reshaped over the course of almost 2,000 years. In the Fall semester, the curriculum primarily explores Late Antiquity and the Early Middle Ages. In the Spring Semester, the focus shifts to the Later Middle Ages, Renaissance, and Enlightenment. Ultimately, students are expected to be informed about the intellectual, cultural and philosophical precepts upon which the Founding Fathers relied when setting forth on our American experiment.

Course Texts: Various Editors' *Western Civilization Beyond Boundaries, Volume I: To 1715*, St Augustine's *The Confessions of St. Augustine*, Einhard's *Two Lives of Charlemagne*, Timothy Fry trans. *RB: 1980: The Rule of St. Benedict*, Machiavelli's *The Prince*, Adolph Speath trans. *The Bondage of Will* by Martin Luther

U.S. History (The Colonial Era through 1800) (45.081)

This course offers a survey of the major themes and events in American history from colonial times through the end of the eighteenth century, with special emphasis on the struggle for independence and the American founding. The organizational focus is primarily legal-political, but cultural, social, religious and intellectual themes are also addressed. The course delves deeply into the origins and nature of American governmental institutions, and the traditions, habits, and presumptions which brought those institutions into being. Class sessions are a mixture of lecture and discussion of primary document readings.

Course texts: Robert V. Remini's *A Short History of the United States from the Arrival of Native American Tribes to the Obama Presidency*, Richard Hofstadter and Clarence ver Steeg, eds. *Great Issues in American History, vol 1: From Settlement to Revolution, 1584-1776*

U.S. History (1800 through Reconstruction) (45.091)

This course continues the survey of major themes and events in American history through the first century of U.S. independence, focusing on the development of legal/governmental institutions, the development of political theories, conflicts over slavery which led ultimately to the Civil War, and the constitutional disputes and changes that conflict brought about. Special attention will be given to economic development, and the social and political stresses which urban growth and industrial expansion placed upon American institutions of government. Class time will be devoted as much as possible to active discussion of primary documents.

Course Texts: Robert V. Remini's *A Short History of the United States from the Arrival of Native American Tribes to the Obama Presidency*, Richard Hofstadter and Clarence ver Steeg, eds. *Great Issues in American History, vol. 3: From Reconstruction to the Present Day, 1865-1981*

U.S. History (America in the 20th Century) (45.092)

This course concludes the three-semester survey of U.S. history, tracing the major events and themes of the twentieth century. Domestically, particular focus will be placed upon changing social patterns, including race relations and the Civil Rights movement, the post-1950s 'counter-culture' and radical 'New Left', and the origins of cultural and moral pluralism. The relationship of these social trends to shifting political philosophy, such as progressive centralization of power in the federal government and administrative agencies will be addressed. In foreign policy, special attention will be given to the World Wars and Cold War, events that led the United States into a new position of global leadership, and, eventually, military hegemony. Class time will be devoted as much as possible to active discussion of primary documents.

Course Texts: Robert V. Remini's *A Short History of the United States from the Arrival of Native American Tribes to the Obama Presidency*, Richard Hofstadter and Clarence ver Steeg, eds. *Great Issues in American History, vol. 3: From Reconstruction to the Present Day, 1865-1981*

Modern European History (45.089)

This readings-based, two-semester seminar surveys the major themes and events of European history since the late eighteenth century. Assigned texts will be original works from the eras under discussion, such as memoirs, speeches, essays, and the like. Successive modules will address the French Revolution; liberalism and the rise of the nation-state; imperialism and great power politics; the First World War; Communism, fascism, and democracy in the interwar decades; the Second World War; the Cold War; the European Union. Class sessions will consist of group discussions on readings, often student led. Occasional concise lectures will provide historical context for the assigned works.

Course Texts: Alexis de Tocqueville's *The Old Regime and the French Revolution* (1856), Leman Thomas Reed, ed, *The Memoir of George Canning, the Late Prime Minister of Great Britain* (1927--selections), Giuseppe Mazzini's *Duties of Man and Other Essays* (1907), Edward Grey the 1st Earl of Fallodan's *Twenty-Five Years, 1892-1916* (2 volumes; 1925--selections), Siegfried Sassoon's *Memoirs of an Infantry Officer* (1930), Ernst Jünger's *Storm of Steel* (1924), John Reed's *Ten Days That Shook the World* (1919), Vladimir Lenin's *The State and Revolution* (1925)

American Government (45.057)

The objective of this course is to prepare students for the rigors of citizenship by providing them with a basic knowledge of their government. Throughout this course, students should acquire a strong understanding of America's founding principles and the relationship of those principles to our safety, liberty, and happiness. They should come to know the American frame of government and how it is intended to operate under the U.S. Constitution. Students will also study challenges to our founding principles and the U.S. Constitution throughout our history, and aspects of American government as it functions today.

Course Texts: Selections from relevant philosophical texts and founding documents which include, but are not limited to: John Locke's *Second Treatise of Civil Government*, Aristotle's *Nicomachean Ethics* and *Politics*, Alexis de Tocqueville's *Democracy in America*, *Federalist Papers*, the Constitution, the Declaration of Independence, the Constitution of the Commonwealth of Massachusetts, the Virginia Declaration of Rights, and speeches by Abraham Lincoln, Franklin D. Roosevelt, Theodore Roosevelt, and Ronald Reagan

Leadership (45.059)

This course explores the principles and practices of leadership, especially the work of leaders in establishing, cultivating, and defending civilization. Students examine the virtues and capacities of leaders in a variety of crises and key moments in history. Attention is given to the education, rhetoric, strategy, temporary setbacks, and overall achievements of great leaders. Students generally study the Founding Fathers in the first quarter and Lincoln's political and military leadership in the second. Students who wish to participate in student government must take this class before or while holding office. As leadership takes many forms, the course is not limited to those who want to hold class office.

Course Texts: Selections by various authors

Moral Philosophy (45.014)

Moral philosophy, or ethics, is the formal study of right action. From infancy, we are told what is "right" and what is "wrong." What is the basis of such judgments? Do our duties to ourselves and to others derive from divine commands, social contracts, or principles of human nature? Do standards of right and wrong fluctuate according to time and place, or are there certain transcendent norms to which all human beings must adhere? To answer these questions and others, we study the moral tradition of the West. This is an exceedingly rich tradition, and this course examines many philosophers, statesmen, and storytellers. The overarching aim is to understand what constitutes the good and the virtues employed to achieve and to defend the good.

Course Texts: Aldous Huxley's *A Brave New World*, C.S. Lewis' *The Abolition of Man*, selections from various sources

Political Philosophy (45.058) (Available to eleventh grade only)

Political philosophy is the attempt to obtain political knowledge based on an accurate understanding of human nature and human history. With political knowledge, political philosophers can understand how men act in society and thus create forms of government that will affect the people's safety and happiness. The Founding Fathers of the United States were political philosophers. Our objective is to read some important texts the Founders used as references and by reading the Founders themselves in defense of the Constitution—in order to understand the Constitution of the

United States of America. As political philosophers ourselves, we will not only gain knowledge of our nation but also become better citizens and defenders of that Constitution.

Classical Children's Literature (23.064)

In this semester-long class, students will have the opportunity to revisit many of the classics they encountered during their early years as an ACA student and uncover the deeper meanings within the texts they may have missed as elementary students. The class's central focus would be to explore the tension between the adult and adolescent worlds. This is a particularly poignant subject for students, particularly 12th graders, as they are on the cusp of entering into the adult world as full citizens and leaving behind that of their youth. As they revisit these beloved stories, we will endeavor to simply enjoy them together, but also to understand the importance of maintaining the ability to approach the world with a sense of childlike wonder and imagination.

Course Texts: Select Short Stories, Fables, and Limericks, Peter Pan, The Wind in the Willows, Alice in Wonderland, The Lion, The Witch, and the Wardrobe, The Little Prince

Language

Latin I (61.041)

In Latin I, students review chapters 1-8 of *Wheelock's Latin* and proceed to study chapters 9-17. They will learn about the Perfect System of verbs (Perfect, Pluperfect, and Future Perfect Tenses) and about various types of pronouns. Translation from Latin and to Latin will emerge as an important subject, as will the study of vocabulary and the English derivatives of the Latin words. This course is intensive in both note-taking and homework.

Course Texts: Fredric Wheelock and Richard A. LaFlue's *Wheelock's Latin*, Paul T. Comeau and Richard A. LaFleu's *Workbook for Wheelock's Latin*

Latin II (61.042)

In Latin II, students will build upon concepts acquired in Latin I. The course will begin with a brief review of Chapters 10-14 of *Wheelock's Latin*. We will then proceed to the study of relative and interrogative pronouns, the passive voice, and various forms of the ablative. We will also cover participles, gerundives, indirect statements, and, time permitting, the subjunctive mood. Through this study of Latin, students will enhance their knowledge of English vocabulary and grammar, as well as of Roman culture and mythology.

Course Texts: Fredric Wheelock and Richard A. LaFlue's *Wheelock's Latin*, Paul T. Comeau and Richard A. LaFleu's *Workbook for Wheelock's Latin*

Latin III (61.043)

In Latin III, students cover the later chapters of *Wheelock's Latin*, learning about the various tenses of the Subjunctive Mood of verbs, the uses of the Subjunctive Mood, and the different types of Conditional sentences. Focus is placed on learning new Latin vocabulary and on incorporating derivatives of those words into one's own vernacular. Students proceed through the textbook at the rate of one chapter every two weeks. Each chapter incorporates a lecture on classical mythology.

Course Texts: Fredric Wheelock and Richard A. LaFlue's *Wheelock's Latin*, Paul T. Comeau and Richard A. LaFleu's *Workbook for Wheelock's Latin*

Latin IV (61.044)

Students complete the remaining chapters of *Wheelock's Latin*, which cover all the significant grammatical subjects of Latin and provide a vocabulary of approximately 1000 words. Students then make the transition from translating independent sentences to working with continuous passages of un-adapted, or only slightly adapted, Latin literature.

Course Texts: Fredric Wheelock and Richard A. LaFlue's *Wheelock's Latin*

Latin V (61.045)

The overarching goal of this course is to increase the pace at which students can translate a high volume of Latin writing. To this end, more readily comprehensible compositions are initially utilized to help the students develop good techniques of translation. These are then applied toward more difficult un-adapted passages from the classics of Latin

literature, especially the words of Caesar and Virgil.

Course Texts: Fredric Wheelock and Richard A. LaFlue's *Wheelock's Latin*

AP Latin (61.048)

The AP Latin course focuses on the in-depth study of selections from two of the greatest works in Latin literature: Vergil's *Aeneid* and Caesar's *Gallic War*. The course requires students to prepare and translate the readings and place these texts in a meaningful context, which helps develop critical, historical, and literary sensitivities. Throughout the course, students consider themes in the context of ancient literature and bring these works to life through classroom discussions, debates, and presentations. Additional English readings from both of these works help place the Latin readings in a significant context.

Course Texts: Clyde Pharr's *Vergil's Aeneid*

Spanish I (60.071)

This course immerses students in the Spanish language by implementing different activities that help with language development. Students work on developing the four language skills (listening, speaking, reading, and writing), as well as the vocabulary and basic grammar necessary to establish a basic working knowledge of the language. Students will learn introductions, seasons, days of the week, months of the year, numbers, prepositions, adjectives, comparatives, superlatives, regular/irregular verbs, among others. Additionally, students will learn the simple present tense and basic grammatical structures which will help them communicate efficiently in basic conversational Spanish.

Course Texts: *Spanish: Middle/High School* by Cynthia Downs

Spanish II (60.072)

In this course, students will work to further develop the four Spanish language skills (listening, speaking, reading, and writing), as well as vocabulary and advanced grammar necessary for them to acquire a working knowledge of the language. Students will build upon previous topics taught in Spanish I (numbers, colors, animals, adjectives, comparatives, superlatives, regular/irregular verbs, present tense). Additionally, we will continue studying verb tenses, more advanced grammatical structures, and new vocabulary that will help students communicate efficiently and advance their understanding of the Spanish language.

Course Texts: Christopher Kendris' *Spanish Now! Level 2*, Virginia Hildebrandt's *Las Lagrimas de Xochitl*, Craig Klein Dexemple's *Peter va Colombia*

Spanish III (60.073)

This course will consolidate the topics necessary for advanced knowledge and proficiency in the Spanish language. Students will expand their vocabulary by learning commonly idiomatic expressions and phrases used on a daily basis by native Spanish speakers. Additionally, they will learn the usages of active/passive voice, direct/indirect objects, disjunctive pronouns, subjunctive mood and verb tenses such as: past perfect, imperfect indicative, future, among others. Students will demonstrate their mastery of the language by writing essays, reading advanced Spanish novels/books and communicating with Spanish speaking guests.

Course Texts: Christopher Kendris' *Spanish Now! Level 2*, Virginia Hildebrandt's *Los sueños de Xochitl*, Rogelio Vallecillos' *Advanced Spanish grammar*, Angel's Florez's *Spanish Reader*, among others.

Introduction to Greek (61.021)

This course is intended to introduce students to the Ancient Greek language, the starting point of Western Civilization. Greek grammar is so similar to that of Latin that it will be possible to cover all necessary topics within one year, and begin reading unadapted literary passages from a variety of authors. The Greeks directly and indirectly (through the Romans) influenced the development of both Western Civilization and the English language. The epic poems of Homer represent not only some of the finest works of Western Literature, but also the very beginning of that canon. At a very early date, the Greeks fashioned their tongue into a literary language that produced not only epics, but also lyric poetry, epigrams, tragedies, comedies, history, philosophy, and medical and scientific works. The ideas first articulated in this language have shaped the course of Western thinking ever since.

Course Texts: Henry Crosby and John Schaeffer's *An Introduction to Greek*

Fine Arts

AP Art History (50.0921)

This course of study is designed to help students develop an aesthetic and contextual understanding of major works of art throughout history. Through this course we will learn to love the beautiful by an understanding of history and the evolution of art, how art changes with and reflects the moments in history as a key component to cultural evolution. We will explore the forms, meanings, and purposes of art. We will discuss techniques, styles and content as well as historical and social contexts, in various media and cultures in art throughout history. Prerequisite: An interview with Miss Adams.

Course Texts: Fred S. Klein's *Gardner's Art through the Ages*

Visual Art (50.0211)

Students learn the cultural and historical contexts surrounding classical and contemporary works of art, and create artwork that purposefully exemplifies the elements of art and principles of design. Throughout the course, students observe, select, and utilize a variety of subject matter, concepts, materials, and techniques to fuel original works of art. They are encouraged to recognize and develop a personal aesthetic style and appreciate visual art as a vehicle of human expression throughout human history. This is a studio-based course.

Chamber Choir (54.0211)

The chamber choir provides high school students an opportunity to sing in a larger ensemble focusing on a wide spectrum of repertoire. The choir will sing in at least two concerts as well as take part in choir festivals and sing for community events.

Music Survey (53.014)

This is an elective course intended for upper school students who either have not had BCSI general music or would like a refresher in the subject. The course is designed to survey the development of Western art music, primarily through the study of masterworks from the Common Practice Era.

String Ensemble (53.0741)

The string ensemble is available to 7th-12th grade students. The ensemble performs on the two concerts each year and will be looking to grow into performing at the GMEA festival soon. This ensemble will also provide an opportunity for students to audition for the all-state orchestra. Prerequisite: An audition is required if a student is not currently in the ensemble.

Piano Performance (53.0941)

This is an elective course intended for those students with intermediate to advanced piano skills who would like to continue their musical development. This course would offer students more performance opportunities through solos, collaborative pieces, or ensemble accompaniments.

Mathematics

Foundations of Algebra (27.0481)

Foundations of Algebra is a first-year high school mathematics course option for students who have completed mathematics in grades 6 – 8 yet will need substantial support to bolster success in high school mathematics. It will provide many opportunities to revisit and expand the understanding of foundational algebra concepts, will employ diagnostic means to offer focused interventions, and will incorporate varied instructional strategies to prepare students for required high school mathematics courses by emphasizing both algebra and numeracy in a variety of contexts including number sense, proportional reasoning, quantitative reasoning with functions, and solving equations and inequalities.

Algebra I (27.099)

Algebra I is a course that further develops the idea of using symbols to represent numbers, allowing students to study the relationship of two or more quantities through equations and graphs. By the end of the course, students will gain familiarity with arithmetic rules that describe the nature of numbers.

Course Texts: Arthur W. Weeks and Jackson B. Adkins' *First Course in Algebra*

Geometry (27.0991)

Geometry at Atlanta Classical Academy remains consistent to its classical approach in the search for reason, beauty, and knowledge for its own sake. Euclidean geometry carefully defines the relationship of points, lines, planes, and space, which allows students to utilize deductive reasoning to present a clear argument. Topics covered include perpendicular and parallel lines, similar figures, and coordinate geometry.

Course Texts: Arthur W. Weeks and Jackson B. Adkins' *A Course in Geometry: Plane and Solid*

Algebra II (27.0992)

This course explores properties of fundamental functions in Algebra: linear, quadratic, polynomial, exponential, logarithmic, radical, and rational functions. The topics of study also include development of strategies for solving equations and inequalities, solving systems involving two and three variables, introduction to matrices and using them to solve systems, understanding sequences and series, and understanding of probability involving permutation and combination methods.

Course Texts: Arthur W. Weeks and Jackson B. Adkins' *Second Course in Algebra*

Pre-Calculus (27.0974)

This class is designed to prepare the student for study in calculus. Many algebraic, geometric, and logical reasoning skills acquired in previous classes will be strengthened and refined this year. In addition, this class will contain an emphasis on the study of trigonometry. As the final step before the collegiate level, pre-calculus acts as the bridge between elementary and higher mathematics and, as such, contains a healthy dose of both familiar and new concepts. By the end of the course, students should (1) master the properties of algebraic, logarithmic, and trigonometric functions, (2) understand basic applications of trigonometry and various functions, equations, and graphs, and (3) be acquainted with higher level critical thinking problems.

Course Texts: Michael Sullivan's *Precalculus*

Advanced Mathematical Decision Making (AMDM) (27.085)

This is a course designed to follow the completion of Algebra II or Pre-Calculus. AMDM will give students further experiences with statistical information and summaries, methods of designing and conducting statistical studies, an opportunity to analyze various voting processes, modeling of data, basic financial decisions, and network models for making informed decisions.

Calculus I (27.078)

This course is open to high school students who have successfully completed precalculus. Students will be introduced to the fundamental principles of differential and integral calculus. Topics covered include detailed study of limits, continuity, derivatives and integrals of algebraic and transcendental functions of one variable with applications to curve-

tracing, maxima-minima related rate problems. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to derivative and anti-derivative related problems with and without technology. Students will have the opportunity to take the AP exam at the end of the course, if they choose, with the possibility of qualifying to meet college level credit requirements depending on the policies of the college in which the student enrolls.

Course Texts: James Stewart's *Calculus: Early Transcendentals*(8th edition)

AP Calculus BC (27.073)

AP Calculus BC is an introductory college-level calculus course. Students cultivate their understanding of differential and integral calculus through engaging 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.

Statistics and Probability (27.088)

This is an introductory course in statistics designed to provide students with the basic concepts of data analysis and statistical computing. Topics covered include necessary descriptive measures, measures of association, probability theory, confidence intervals, and hypothesis testing. The main objective is to provide students with practical tools for assessing statistical claims and conducting their statistical analyses.

Course Texts: Roxy Peck's *Statistics: Learning from Data* (2nd edition)

Science

Biology I (26.012)

Biology I expands on the life science concepts acquired in earlier courses. Students will explore a diversity of topics, including the inner workings of the cell and DNA, the functioning of the human body, and the interactions of ecosystems to gain a deeper understanding of how life systems operate. This course aims to open students' eyes to the world growing in and around them; to help them understand what makes life work, and how they fit into it.

Course Texts: Various Authors' *Campbell Essential Biology with Physiology*

AP Biology (26.014)

The Advanced Placement (AP) Biology course builds on the concepts acquired in Biology I and is a rigorous, year-long course that simulates a college-level introductory biology course. Students will expand upon the knowledge acquired in Biology I and deepen their understanding using real-world examples through lab activities. Students will observe key concepts, such as photosynthesis and enzyme activity, during their weekly lab instruction. Lab work emphasizes development and testing of a hypothesis, collection, analysis and presentation of data, and discussion of results to discover unanswered questions about the particular topics addressed.

Course Texts: Various Authors' *Campbell Biology*, AP Edition, Fred W. Holtzclaw and Theresa Knapp Holtzclaw's *Campbell Biology Active Reading Guide*, AP Edition

Chemistry I (40.051)

This course provides students with a fundamental understanding of matter and change, scientific measurements and procedures, atomic structure, chemical bonding, chemical formulas, chemical reactions and equations, stoichiometry, states of matter, kinetic theory of matter, gas laws, solution chemistry, acid-base theories and reaction energy. Each major unit includes a historical perspective, focusing on the questions posed, analyzed and answered by the founders of modern chemistry. Students will do a number of laboratory experiments and investigations.

Course Texts: Mickey Sarquis and Jerry L. Sarquis' *Modern Chemistry*

AP Chemistry (40.053)

AP Chemistry is designed to be comparable to a college-level general chemistry course, and thus explores in much greater depth the concepts students previously learned in Chemistry I, as well as new material that will build upon previous knowledge. Major topics covered will include the structure of matter, states of matter, chemical reactions, kinetics, thermochemistry, equilibrium, acid-base, and electrochemistry. Students will learn numerous chemical

calculation skills in the study of the content, and in the analysis of lab data. The course is challenging in both academic content and laboratory procedures.

Course Texts: Steven S. Zumdahl, Susan A. Zumdahl, and Donald J. DeCoste's *AP Chemistry*

Physics I (40.081)

This course is designed to further the understanding of the physical sciences that began in the lower school and provide students with the necessary skills to be proficient in physics. The study of physics stresses an in-depth understanding of the nature and structure of matter and the characteristics of energy. This course is designed to provide students with hands-on, real world connections that will deepen their understanding of this math-based science discipline. Areas of concentration include classical mechanics, gravitation, thermodynamics, the atomic nature of matter, electricity and magnetism, and electromagnetic and sound waves.

Course Texts: Raymond A. Serway and Jerry S. Faughn's *Physics*

AP Physics I (40.083)

AP Physics 1 is an algebra-based, introductory college-level physics course. Students cultivate their understanding of Physics through inquiry-based investigations as they explore these topics: kinematics; dynamics; circular motion and gravitation; energy; momentum; simple harmonic motion; torque and rotational motion; electric charge and electric force; DC circuits; and mechanical waves and sound.

Course Text: Raymond A. Serway's *College Physics, AP Edition, AP Physics 2* (11th edition)

Physiology (26.073)

Physiology is a semester science elective open to 11th & 12th graders interested in deepening their knowledge of how the human body works. This course will expand on the body systems introduced in 9th grade Biology, from the smallest skin cell to the vast network of nerves in your nervous system. By the end of the course, students will understand why their body acts the way it does, how the systems interact with each other, and what can happen when these systems malfunction. Systems include: Cardiovascular, Respiratory, Nervous, Muscular, Endocrine, Immune, Reproductive.

Course Text: Campbell's *Essential Biology with Physiology (5th Edition)*

Oceanography (40.071)

Oceanography is a semester-long science elective open to high school students. Students will be introduced to the fundamental principles of oceanic science. Concepts covered include plate tectonics, sediments and seawater, marine regions and life, ocean and atmosphere circulation, energy transfer and tides, and the scientific analysis of beaches and shorelines.

Course Texts: Tom Garrison's and Robert Ellis's *Oceanography, An Invitation to Marine Science*.

AP Computer Science Principles (11.019)

The English word *computer* comes from the Latin *computare*, which means to calculate or to add together, but computers today are more than just giant calculators. This course explores the foundations of modern computing, covering a broad range of topics including how information is stored (data representation), how we put computers to work (algorithms), how we tell computers what to do (programming), and how we keep information secure (encryption). Semester 2 will start with beginner-friendly tools to try out programming concepts making games, graphics, and simulations. Students will then dive right into languages used in colleges and tech companies. Fundamental programming techniques are covered, including data types, variables, functions, loops and conditional logic. Object-oriented programming in Java will be introduced.

AP Computer Science A (11.016)

This course introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing. The course emphasizes both object-oriented and imperative problem solving and design. These techniques represent proven approaches for developing solutions that can scale up from small, simple problems to large, complex problems. Prerequisite: AP Computer Science Principles

Electives & Additional Courses

Health (17.011)

Health is the condition of the human body when it is functioning properly. Lack of health—or being unhealthy—is the condition of the human body when it is not working properly or to its potential. Health class is the formal study of the human body in order to understand what constitutes health, what practices and habits contribute to health, what practices and habits impair health, and what ailments and conditions must be diagnosed and treated lest they endanger health. **This course is required for graduation.**

Personal Fitness (36.051)

This course will focus on the different types of workouts that can be accomplished to increase strength, endurance, and flexibility. Students will learn about muscle groups, proper lifting form, circuit training, interval training, and how to tier/rotate workouts. **This course is required for graduation.**

Study Skills

This is semester long course and provides students time to begin their homework while still having access to teachers. It is also the perfect time to solidify concepts and prepare for the next school day. No credit is awarded for study hall.