



Brunswick School and Greenwich Academy



Course Catalogue 2020 - 2021

This publication is jointly issued by Brunswick School and Greenwich Academy. Each school operates as a separate, independent educational institution, with its own course offerings, student enrollment, Faculty, Administration, and governing bodies.

Consistent with each school's existence as an independent legal entity, Brunswick School grants certain rights and privileges to those students who are duly enrolled at Brunswick; likewise, Greenwich Academy grants certain rights and privileges to its students.

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and
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COURSE CATALOGUE
2020-21

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BRUNSWICK SCHOOL & GREENWICH ACADEMY

Brunswick School and Greenwich Academy are college-preparatory schools. Mindful of their responsibility to provide their students with a rigorous academic program and at the same time to recognize individual talents and special interests, both schools coordinately maintain a strong and balanced offering of required and elective subjects. Honors and Advanced Placement sections in many courses provide qualified students with special challenges, while elective courses available in most disciplines furnish enrichment and variety in traditional academic areas and in art, drama, dance and music.

Statements of each Department's requirements and philosophy and complete descriptions of core and elective courses are provided in the following pages.

Note that both Brunswick and Greenwich Academy reserve the right to cancel any course because of under-enrollment. Registrants in any canceled course will be notified as early as possible.

A minimum of five academic courses is required for all students. Those students proposing a program of six or more full-credit courses that include honors and Advanced Placement must have the permission of the Head of the Upper School for Greenwich Academy students or the Academic Dean for Brunswick students.

Students from Brunswick and Greenwich Academy enroll in courses on both campuses, schedule and numbers permitting. Both schools share a common academic schedule with hour-long classes and ten-minute passing time between classes. Students are expected to honor the rules of both schools as outlined in their respective handbooks.

Graduation Requirements:

ENGLISH:	Four years
HISTORY:	Three years (including Modern World History and U.S. History)
MATHEMATICS:	Three years (including Geometry)
SCIENCE:	Three years (Biology, Chemistry and Physics) at GA Three years (including Biology and Chemistry or Physics) at BWK
WORLD LANGUAGES & CLASSICS:	Completion of Level III in one language at GA Three years at BWK
ARTS:	One year (both semesters in a studio or performance course) at GA Two years at BWK
COMPUTER SCIENCE:	One half-year at BWK
PHYSICAL EDUCATION:	Four years
HEALTH:	One half-year
ETHICS:	One quarter-year at BWK
PUBLIC SPEAKING:	One half-year at BWK

Typical Recommended Four-Year Sequence of Courses:

The sequence outlined below, while typical, is not fixed. Other options, permitting stronger emphasis in a particular subject area (e.g., Language, History, Science) are also open to students.

9 TH GRADE	10 TH GRADE	11 TH GRADE	12 TH GRADE
English 9	English 10	English 11	English 12 electives
Modern World	U.S. History	History elective	History elective
Geometry	Algebra II	Precalculus	Adv. Mathematics
Biology	Chemistry	Physics	Science elective
Languages	Languages	Languages	Languages
Arts	Arts	Arts	Arts
Health (GA: ½ year)	Health (GA & BWK: ½ year)	Ethics (BWK: ¼ year)	Public Speaking (BWK: ½ year)

OFF-CAMPUS STUDY

Brunswick School and Greenwich Academy sponsor a variety of off-campus study options that give students the opportunity to discover new cultures, engage in site-specific study and, in the case of studying abroad, speak a foreign language in full immersion with homestay programs. An array of experiences is offered domestically and abroad during the year, each of which offers intense academics, consistent with Brunswick and Greenwich Academy's academic program. Please consult the schools' websites for more information on these exciting educational opportunities.

Over the course of sophomore year, each Brunswick student will spend one week at the Randolph Campus (VT). While away they will stay current with their academic work at home (though not be responsible for missed assessments). In Vermont students will participate in service, experiential education, expeditions and lessons in self-knowledge, character and leadership. Selected seniors leaders will also attend. Attending students and their advisors will coordinate with teachers so as to best plan for class sessions missed while away.

EXPEDITION COURSES

In several disciplines, Greenwich Academy offers Expedition Courses in which academic study is enriched and deepened by an extended class trip. The class expedition -- whether it's traveling to landmarks of the Civil Rights Movement or participating in authentic conservation biology research -- is an essential part of the course. For these classes, financial aid is available so that students have an equal opportunity to participate.

GLOBAL ONLINE ACADEMY

Global Online Academy is a partnership consisting of select exemplary independent schools from around the world that have come together to offer a diverse array of online courses. These courses are designed with a focus on academic rigor, collaboration, innovation and development of key 21st-century learning skills. Sophomores, Juniors and Seniors may enroll in a GOA course as part of the registration process. Guidelines and the GOA course offerings are included at the end of this catalogue and can be found at www.globalonlineacademy.org.

INDEPENDENT STUDY

Independent projects, in which students do considerable work on their own without the constant supervision of the teacher, are sometimes available. Subject to administrative and departmental approval, and working with a designated faculty sponsor, students will receive full or partial course credit for their work. An independent study cannot be used to fulfill the required minimum of five academic courses per semester.

ADVANCED PLACEMENT COURSES

Advanced Placement (AP) courses are college-level courses offered chiefly in grades 10 through 12. Almost all departments offer AP courses that carry extra credit included in computing GPA's. A sufficiently high score on an AP examination may allow the student to earn credit in the college he or she eventually attends. Students enrolling for any AP course must take the AP Examination in that course—even if they have already been accepted to college.

Students are carefully selected for AP courses according to the following criteria:

- teacher recommendation;
- grades in prerequisite courses;
- consideration of the student's total academic load;
- other specific departmental requirements (see appropriate section).

Students may not take more than three AP courses in a given year without permission of the Head of the Upper School for Greenwich Academy students or the Academic Dean for Brunswick students. The work of a typical AP course involves homework of an hour or more each night. A student may, at the teacher's discretion, lose AP status at any point during the year. Students do not, however, have the prerogative to opt out of an AP course after the designated drop/add period. Colleges will be notified of any change in a student's AP status.

HONORS COURSES

Honors courses are significantly more rigorous than regular courses, and student work is expected to show greater depth, more sophisticated reasoning, academic independence and higher creativity than the work in regular courses. Almost all departments offer Honors courses that carry extra credit included in computing Honors. Students need specific departmental recommendation to take Honors courses. A student may, at the teacher's discretion, lose Honors status at any point during the year. Students do not, however, have the prerogative to opt out of an Honors course after the designated drop/add period.

GLOBAL SCHOLARS

With the goal of preparing students to be active and engaged members of the increasingly global community, the Global Scholars program offers Greenwich Academy students a thematic, interdisciplinary approach to their education. The program requires, among other things, international travel and project-based scholarship and seeks to teach students skills in problem-solving, communication, analytical thinking, collaboration, adaptability and inclusion. Most students apply to the program in the spring of their Group IX year. Successful completion of the Global Scholars program requires well-roundedness across the curriculum, the design of a digital portfolio, at least two weeks of study or project work outside of the United States and a capstone project to be completed during senior year.

DISTINCTION IN CLASSICS

In recognition for having successfully completed three years of Latin in the Upper School, including one AP level Latin course and two years of classical Greek, Brunswick students are awarded a Classics diploma written in Latin. Greenwich Academy students who have completed the equivalent course of study are formally recognized at the Senior Honors Convocation.

NEW COURSES

DEPARTMENT		ID#	TERM
Computer Science (BR)	CS 200: Advanced Programming with Java (s)	78615	Spring Semester - page 36
	CS 301: Advanced Honors Seminar: Data Science & Machine Learning	78607	Full Year - page 38
	STEAM 101: The Coding Palette (f)	78610	Fall Semester - page 35
English	Change Agents: Out of the Classroom, Into the Community (Expedition Course)	14053	Full Year - page 4
	Hemingway: Modernism & Masculinity	14054	Full Year - page 5
	Native American Studies: History & Literature (Expedition Course)	14051	Full Year - page 6
	Other Worlds: Fantasy, World Building, and the Reader's Imagination	14052	Full Year - page 7
History and Social Sciences	Economics: Entrepreneurship (f)	38404	Fall Semester - page 16
	Impact of Technology: An Economic Perspective (f)	38412	Fall Semester - page 16
	Leaders, Leadership, and Strategy (s)	38425	Spring Semester - page 21
	Native American Studies: History & Literature (Expedition Course)	14051	Full Year - page 24
	Today in the News (f)	36473	Fall Semester - page 17
	Today in the News (s)	36474	Spring Semester - page 22
Mathematics (BR)	Accelerated Geometry	28101	Full Year - page 25
	Honors Discrete Mathematics	28503	Full Year - page 28
	Quantitative Geometry	28103	Full Year - page 26
Science	Impact of Technology: An Economic Perspective (f)	38412	Fall Semester - page 48
Visual and Performing Arts	Art and Design I (f)	68147	Fall Semester - page 78
	Art and Design I (s)	68148	Spring Semester - page 80
	CTM: 3D Modeling and Printing (f)	66612	Fall Semester - page 78
	CTM: New Media and 3D Worlds (s)	66613	Spring Semester - page 80
	Intermediate Drawing (s)	66631	Spring Semester - page 81
	Introduction to Drawing (f)	66630	Fall Semester - page 78
	STEAM 101: The Coding Palette (f)	78610	Fall Semester - page 79
World Languages and Classics	Exploring French Through Global Engagement	44510	Full Year - page 58
	Hispanos en el Caribe (s)	43520	Spring Semester - page 65
	Spanish Language and Culture through the Performing Arts (f)	43521	Fall Semester - page 64

ONE-SEMESTER COURSES

FALL

SPRING

Computer Science (BWK)	CS 101: Introduction to Computer Science STEAM 101: The Coding Palette	CS 101: Introduction to Computer Science CS 200: Advanced Programming with Java
Engineering and Computer Science (GA)	Introduction to Computer Science	AP Computer Science Principles
English	War, Literature & Popular Culture	
History and Social Sciences	Abnormal Psychology Advanced Civil Rights: Kingian Seminar American Film: Big Screen Reflections Debate I Economics: Financial Markets Everyday Economics Impact of Technology: An Economic Perspective Modern Middle East Sport Psychology Today in the News Today's China and Japan	A History of Rscce Abnormal Psychology American Film & Beyond Behavioral Economics Cognitive Psychology Criminal Justice Debate II Economics: Entrepreneurship Environmental History Leaders, Leadership, and Strategy Today in the News Understanding 9/11
Science	Abnormal Psychology Biology of Human Health Engineering & Robotics I Genetics Impact of Technology: An Economic Perspective Human Physiology I Marine Biology Organic Chemistry Sport Psychology	Astrophysics Cognitive Psychology Engineering & Robotics II Environmental Science Food Science Forensic Science & Investigation Human Physiology II Infectious Diseases
Visual and Performing Arts	American Film: Big Screen Reflections Architecture & Design I Architectural Space I Art and Design I CTM: 3D Modeling and Printing Introduction to Drawing (f) Music History Survey	American Film & Beyond Architecture & Design II Architectural Space II Art and Design I CTM: New Media and 3D Worlds Introduction to Music Theory Intermediate Drawing
World Languages and Classics	Classics & Our World Espanol en Vivo: Spanish in the Community Spanish Language and Culture through the Performing Arts War, Literature & Popular Culture	Classics & Our World Espanol de Negocios: Business Spanish Hispanos en el Caribe

ENGLISH

The English program has several major objectives: to help students increase their understanding and command of language, to develop the process of critical and creative thinking, and to foster knowledge of a wide range of literature.

All English courses on both campuses are designed to help students improve their proficiency in reading, thinking, speaking, and writing, through reading and discussing literature, through extensive writing, and through grammar and vocabulary work. Word processing, which both departments regard as an integral tool for thinking and writing, is required for all outside assignments.

Each summer, all GA and Brunswick Upper School students engage in a community reading experience. All English classes begin with discussion of the Summer Read, culminating in a visit from the author to speak to all Upper School students in the fall. The Summer 2020 Read is *Circe* by Madeline Miller. Described by *The New York Times* as a “bold and subversive retelling” of the story of Greek goddess Circe, the novel imagines the life of that fierce, fascinating character in a way that feels distinctly modern and thrilling, whether you know and like Greek mythology or not!

Circe is Madeline Miller’s second novel; her first, *The Song of Achilles*, won the Orange Prize for Fiction. *Circe* was an instant #1 *New York Times* bestseller, is the winner of several major awards, and is currently being adapted into a series for HBO.

English IX (GA)

11006

Grade Level: 9th

The ninth grade English course at Greenwich Academy has as its theme Seeing and Being Seen: Reading and Writing Women’s Stories. The course provides a foundation in the study of literature, helping students to develop the increasingly complex writing and thinking skills they will need in the Upper School. Writing instruction focuses on the analytical essay, emphasizing process (topic generation, thesis writing, evidence selection and interpretation, revision, editing, etc.), but students also write informal responses and creative pieces. Active reading, annotation, class discussions, and writing-to-learn assignments help students build complex interpretations of a variety of texts, while ongoing self-assessment and portfolio assignments help students identify strengths and set goals for their work in reading, writing, and discussion, becoming more independent learners in the process. Recent texts have included: *Antigone*, *Pride and Prejudice*, *Twelfth Night*, *Little Fires Everywhere*, *Persepolis*, *The Catcher in the Rye*, and *The Hate U Give*.

English IX (BR)

11008

Grade Level: 9th

Continuing a longstanding Brunswick tradition, English 9 is an all-boys class taught around a Harkness table; it focuses on many examples of exemplary and cautionary models of manhood. A variety of literary and non-fiction works from many periods and genres will be read. The course stresses the development of critical reading and thinking skills while challenging each boy to improve his writing. We also carry out a comprehensive study of grammar, vocabulary, and the mechanics of essay writing. In addition to the focus on analytical writing, students will complete various projects including creative writing, oral presentations, memorization, and a significant interdisciplinary project during the second semester.

English X

12000

Grade Level: 10th

Prerequisite: English 9 or equivalent

English 10 traces American experiences as they are reflected from the country's colonial beginnings to twenty-first century literature. Students read a variety of genres and explore writing in myriad forms, with emphasis on the analytical essay. Grammar study arises out of the students' specific needs and vocabulary is studied through the literary texts. Works to be studied may include *The Crucible*, *Our Town*, short stories by Nathaniel Hawthorne and essays by Thoreau and Emerson, *Adventures of Huckleberry Finn*, *Narrative of the Life of Frederick Douglass*, *Their Eyes Were Watching God*, *The Great Gatsby*, *The Absolutely True Diary of a Part-Time Indian*, and selected poetry and essays.

English XI

13000

Grade Level: 11th

Prerequisite: English 10 or equivalent

English 11 is primarily a study of literature from the United Kingdom and its former colonies. Students will read a variety of genres and build on the writing skills they developed in English 9 and English 10. Writing assignments will ask students to engage in myriad forms, from the personal to the analytical essay to creative writing as well. Possible texts include: *The Canterbury Tales*, *Othello*, *Macbeth*, *Oedipus the King*, *Frankenstein*, *Dubliners*, *Interpreter of Maladies*, *1984*, Romantic poetry, *Exit West* and works by Camus, P.D. James, Adichie, Lispector, and more.

AP English Literature and Composition (BR)

13010

Grade Level: 11th (Brunswick only)

Prerequisite: Departmental approval

In the AP English Literature and Composition course, students devote themselves to the study of literary works written in—or translated into—English. Careful reading and critical analysis of such works of fiction, drama, and poetry provide rich opportunities for students to develop an appreciation of ways literature reflects and comments on a range of experiences, institutions, and social structures. Students will examine the choices literary writers make and the techniques they utilize to achieve purposes and generate meanings. In addition to a variety of works of short fiction and poetry from authors from various eras and perspectives, drama by such playwrights as Euripides, Shakespeare, Shaw, Pinter, and Stoppard, and Caryl Churchill and novels by writers such as Thomas Hardy, Herman Melville, William Faulkner, George Eliot, Virginia Woolf, Toni Morrison, and Iris Murdoch will be studied.

Honors English Seminar in Literature (GA)

14014

Grade Level: 11th - 12th

Prerequisite: Departmental approval

This honors English course, taken in addition to either a required English course or AP Spanish Literature, offers intensive study of more advanced works. Students will be challenged to become more independent, insightful readers and more forceful, artful writers with confident critical voices. Through study of narrative structure, form, and style, students will learn to discern and articulate authors' methods of making meaning through texts, themes, and concepts comparable to those that occur in college literature courses. Students in this course who wish to sit for the AP English Literature exam in the spring may do so, with the recommendation of the instructor. Application process to the English department includes a graded essay and a personal essay expressing interest in a more in-depth study of literature. Works could include *Invisible Man*, *Beloved*, *The Grapes of Wrath*, *White Teeth*, *Mrs. Dalloway*, *Persuasion* and *Hamlet*, as well as poetry, short stories, and screenplays.

FALL SEMESTER COURSES

War, Literature & Popular Culture: From Homer to the War on Terror (f)

38416

Grade Level: 10th - 12th

Prerequisite: None; This course does not fulfill departmental requirements

Why do Hollywood movies like *Troy*, *300*, or *The Hurt Locker* fascinate contemporary audiences? Why is war a recurring topic in Western literature through the ages—from Homer to contemporary memoirs of American soldiers who served in Iraq and Afghanistan? Why have videogames exploring facets of war, like *Call of Duty*, reached such a high degree of popularity?

This course will explore first the continuity of the phenomenon of war from classical to contemporary times. Second, it will investigate the classical roots of Western culture. (For instance, a discussion of Livy's Second Punic War narrative, Rome's war against Hannibal, explains how the Romans set the basis for the concept of "nation" and "citizenship" that we cherish in the United States.) Finally, it will take a closer look at artistic manifestations of war, namely in literature and film, but also in the popular culture of our 21st century, "globalized" world.

This is an interdisciplinary class involving English, the Classics, and History and will be team-taught by two faculty members. Readings may range from passages in translation of classical authors such as Homer, Herodotus, or Vergil, to 20th century writers like poet Wilfred Owen or novelist Ernest Hemingway. Knowledge of Latin is not a requirement, however, students with a Classics background will be able to integrate translation skills into the course.

ENGLISH XII: LITERATURE & COMPOSITION - SENIOR ELECTIVES

The English Department offers specialized senior level courses that continue to teach reading, writing, and critical thinking skills. Although the syllabi of these seminars vary, the goals of instruction are consistent -- to develop students' comprehension and expression so that they graduate as independent thinkers and persuasive writers. Common skills represented in each course will range from the proper methods of seeking outside critical sources to presentation skills, and in all courses, analytical writing will be stressed in full. In each course, students will write in various forms and read works representing diverse voices, experiences, genres, time periods, and cultures. In the fourth quarter, students will submit a significant critical paper that will be graded by the student's own teacher, and then submitted to a panel of English teachers. Each year, the joint English Departments will select one essay from each campus as a Senior Prize Paper.

Breaking the Rules: Voices of Revolution

14025

Grade Level: 12th

What happens when individuals – or literary characters – refuse to follow social rules and create their own path? In this class we will examine novels, plays, films, essays, and even some television shows that have pushed us to change the ways we see our world and ourselves. We'll also look at the variety of approaches writers and filmmakers use to tell a story – breaking traditional rules and pushing the boundaries by communicating in original, innovative ways. The works will entertain and challenge as we delve into fiction and non-fiction featuring some notable literary rebels and non-conformists. Possible works include *Beloved*, *Slaughterhouse Five*, *The Reluctant Fundamentalist*, *Invisible Man*, *The Bonfire of the Vanities*, *The Brief Wondrous Life of Oscar Wao*, *The Age of Innocence*, *Catch 22*, *Angels in America*, *Twilight Los Angeles*, *Mad Men*, as well as films by Jane Campion, Spike Lee, Stanley Kubrick, and other filmmakers.

Change Agents: Out of the Classroom, Into the Community (Expedition Course)

14053

Grade Level: 12th

What does *The Hunger Games* reveal about inequality, and do we have any real-life Katniss Everdeens in our midst here in Fairfield County? What warnings can we find about repression in the musical *Spring Awakening*, and what organizations fight for the rights of young people now? How did *Girl, Interrupted* change the way many view mental health in this country? What made *Nickel and Dimed* so powerful (and so controversial)?

In this course, we will read recent as well as classic examples of literature that shine a light on a social issue, studying a different genre (theater, fiction, non-fiction, and memoir) during each quarter. Throughout the year, we'll visit with and get to know community organizations that are actively working to address the problems of these texts. In addition to field trips to visit local organizations and to see current theater productions, this course will have a community service component.

Creative Writing

14016

Grade Level: 12th

This course is an introduction to creative writing in its many forms. We will read and analyze great pieces of literature while simultaneously working on our own creative writing; students will develop their own literary and artistic sensibilities while grappling with the question of what makes good writing? The class will consider non-fiction, fiction, memoir, drama, screenwriting, and poetry as related disciplines, but the year will be divided into units according to these genres.

We will spend most of the first semester reading and writing poetry while also extensively studying song lyrics. In the second semester, we will mostly study short fiction and some of the great short story writers, eventually getting to some new fiction by living authors.

Throughout the course we will discuss issues of voice, imagery, tone, characterization, and the elements of narrative, dramatic, and lyric form. Students will work towards the creation of a multi-genre portfolio that will include workshopped, revised pieces to be considered for publication in literary magazines such as Brunswick's *The Oracle* or Greenwich Academy's *Daedalus*.

The Criminal Mind

14015

Grade Level: 12th

Quick: think of a story that doesn't have a crime in it. (See, it's harder than you think.) This course will form a jury of sorts as we consider the role of crime committed in works of literature and film, both fiction and non-fiction. We will discuss the nature of crime and the motives of a variety of criminals. We will look at how writers choose to present their criminals and how these choices influence our reactions to them, sometimes in surprising ways. We will consider: Do great stories require great transgressions? Is it more satisfying when a mystery has an artful solution or when it lives on, unsolved, in our hearts and minds? Recent texts have included: *Atonement*, *In Cold Blood*, *In the Lake of the Woods*, *Equus*, *The Talented Mr. Ripley*, *Medea* and *Glengarry Glen Ross*; films such as *Memento*, *Double Indemnity*, and *L.A. Confidential*; and a mix of classic and contemporary short fiction.

Hemingway: Modernism & Masculinity

14054

Grade Level: 12th

Ernest Hemingway lives in the American consciousness like no other writer of the 20th century. With the publication of his story collection *In Our Time* in 1924, and the novel *The Sun Also Rises* in 1926, Hemingway famously broke from the formalism of his forebears to create a new kind of writing that favored tough, terse sentences over the ornate prose of the past. This course will explore how Hemingway shaped (and was shaped by) literary Modernism by studying authors such as Sherwood Anderson, Virginia Woolf, James Joyce, and his “frenemy,” F. Scott Fitzgerald. Hemingway once said, “In order to write about life first you must live it”—advice he took himself. War, big-game hunting, deep-sea fishing, love affairs: Hemingway mythologized his own macho life and turned it into art. We’ll interrogate his texts and his life with questions like: to what extent is Hemingway’s masculine ideal still operative today, is it healthy or toxic, how has our definition of masculinity evolved in the 21st century, and which writers are redefining our conception of the American Man? Students should expect to write both critically and creatively during the year.

Our book list may include these additional works by Hemingway: *A Farewell to Arms*, *To Have and Have Not*, *Islands in the Stream*, *A Moveable Feast*, and *For Whom the Bell Tolls*. We’ll study other authors including: James Salter, Tobias Wolff, Raymond Carver, Elmore Leonard, and Jay McInerney. Film adaptations will feature the likes of Gary Cooper and Humphrey Bogart. This course will include field trips.

Heroes Ancient and Modern

14115

Grade Level: 12th

Every civilization develops its ideals in the process of creating its literature, and in doing so also thrusts its anxieties, fears, and hopes onto its heroes. This course seeks to examine the variety of the heroic experience throughout literary history. By comparing classic and contemporary examples, we’ll try to see the reasons for the continued need for heroes and at the same time ponder the essential transformations that have occurred over the centuries. We’ll begin with mythic examples, including *The Iliad*, *Batman*, and Philip Pullman’s *His Dark Materials*; we’ll then move to Milton’s *Paradise Lost* and the graphic novel *Watchmen* as we consider the problems of good and evil on a cosmic scale. In the second half of the year, we’ll examine Shakespeare’s enigmatic *Hamlet*, alternating our modern analogues between Disney’s *The Lion King* and Ingmar Bergman’s *Fanny and Alexander*. Later, we’ll read contemporary novels containing heroes constructed on a more human scale, both in terms of their ambitions and their flaws. Some possibilities include Michael Chabon’s *The Amazing Adventures of Kavalier & Clay*, Jonathan Lethem’s *The Fortress of Solitude*, or Donna Tartt’s *The Goldfinch*. We’ll imagine a dialogue between the original models and contemporary examples of variously heroic characters, considering why readers continue to seek to find heroes and to relive their quests.

In Our Time: Contemporary Fiction

14030

Grade Level: 12th

While studying “The Classics”—the great artistic works of the rich and distant past—provides a necessary intellectual foundation for understanding literature, history, and culture, it is also exciting and interesting to experience and consider brilliant works created “in our time,” by artists of the Contemporary World. With this in mind, this course will explore ways in which contemporary novelists, screenwriters, and songwriters have expressed and are currently expressing themselves through their works. Texts may include: John Irving’s *The World According to Garp* (1979), Chuck Palanhiuk’s psychological thriller *Fight Club* (1996), Dan Brown’s highly controversial *The Da Vinci Code* (2003), Cormac McCarthy’s Pulitzer prize-winning *The Road* (2005), and Alan Moore’s critically-acclaimed graphic novel *V For Vendetta* (1985). The course will also include units on contemporary screenplays by Frank Darabont (“The Shawshank Redemption”), Christopher Nolan (“Batman Begins”), and Diablo Cody (“Juno”), as well as a “musical unit” in which we will study albums by Bob Dylan, Nirvana, Logic, J. Cole, and other musicians from “our time.”

Journalistic Storytelling

14112

Grade Level: 12th

How can we tell the stories of sports? How can we use sports as a prism to view a much wider world of experience and emotion — or use storytelling to hit something inside people and move them — as former managing editor of Sports Illustrated Terry McDonell once suggested? In this senior elective, we will seek to do so by reading, writing, and discussing “all things sports,” analyzing the rhetorical strategies and techniques authors and journalists employ to tell a powerful story. We will read, write, and think about the players, places, and events of male and female sports, discussing essays, book excerpts, poems, stories, and pieces of journalism. In addition, we will view sports from our own personal lenses and focus on how they have transformed our own lives or the lives of those around us. Most important, we will work tirelessly to become more polished readers, writers, thinkers, and grammarians — using the art of sport as our guide as we share, critique, revise, and rewrite. It is often said that sports can represent a metaphor for life: In this class, we’ll dive in (head first) and search for the truth.

Possible texts and authors may include: David Remnick (editor), *The Only Game in Town: Sportswriting from The New Yorker*; David Halberstam (editor), *The Best American Sports Writing of the Century*; Wright Thompson (editor), *The Best American Sports Writing 2015*; Rob Fleder (editor), *Sports Illustrated: Fifty Years of Great Writing*; Roger Angell, *Let Me Finish*; John McPhee, *A Sense of Where You Are: Bill Bradley at Princeton*; Christine Brennan, *Best Seat in the House: A Father, a Daughter, a Journey Through Sports*, Andre Agassi, *Open*; Patricia O’Connor, *Woe Is I: The Grammarphobe’s Guide to Better English in Plain English*; along with selections from male and female writers including John Updike, Sally Jenkins, Malcolm Gladwell, Joyce Carol Oates, Dan Jenkins, Frank Deford, Melissa Ludtke, Rick Reilly, Susan Orlean, Leigh Montville, Roy Blount Jr., George Plimpton, and many more.

Native American Studies: History and Literature (Expedition Course)

14051

Grade Level: 11th - 12th

Prerequisite: US History and English X; this course may be taken as a Full Year History elective, or may fulfill the Senior English elective requirement with completion of the Senior Essay

This course explores the history, literature, arts, and sociocultural development of Native American peoples. Students will explore life on and off the Native American reservation in texts produced by writers, activists, and historians from a wide variety of indigenous communities in the United States. The course will involve navigating historical and contemporary issues and topics in Native American studies, such as settler colonialism and genocide, indigenous resistance and self-determination, cultural survival, and political and environmental activism. This is an expedition course and we will enrich our interdisciplinary studies with guest lecturers, a unit on indigenous art, a visit to the Pequot Museum, and service and cultural opportunities. Some days the course will feel like a traditional history course; other days we will read and hold conversations more akin to the English classroom. When looking at the topic of national sovereignty (self-determination), for example, we will examine the works of historians Vine Deloria Jr., Roxanne Dunbar-Ortiz, and Donald Grinde, writers M.Scott Nomaday, Sherman Alexie, and Joy Harjo, and contemporary artists Alan Michelson, Nicholas Galanin, and George Longfish. We will draw from both primary and secondary source material in addition to novels, poetry, and film.

May include work from Handsome Lake, Jane Johnston Schoolcraft, M. Scott Nomaday, Leslie Marmon Silko (*Ceremony*), Sherman Alexie (*Indian Killer*, *Blasphemy*), Louise Erdrich (*Round House*), James Welch (*Fools Crow*), as well as selected essays and poetry and excerpts from oral tradition and films.

New York State of Mind (Expedition Course)

14041

Grade Level: 12th

Using the city in our backyard as our greatest resource, this course will explore literature written about New York City and the writers who love it. We'll take a look at New York through the lenses of its many cultural traditions; we'll spend time with the Harlem Renaissance, with the Rat Pack and jazz, with immigrant stories, hip-hop, and responses to September 11. We'll look at high society at the turn of the twentieth century and at the squalor of tenement life with which it coexisted. We'll cross the borders between boroughs from the Bronx to Brooklyn and in so doing, catch a glimpse of New York's wild literary history. Through art, music, film, poetry, fiction, and nonfiction, we'll aim to understand what it means to live in New York, to be a part of an urban community, and to capture the wonder and the loneliness of the greatest city of them all. To contextualize our reading, we'll also take several trips to New York throughout the year.

Students will be expected to go on four expedition trips to New York City; financial aid is provided for eligible students. Past expeditions have included: walking tours, The Moth StorySlam, documentary screenings, the 9/11 Memorial and Museum, scavenger hunts through Central Park and the NYC Subway, the Museum of the City of New York, and Off-Broadway theater.

Possible texts include *The Age of Innocence*, *Let the Great World Spin*, *Jazz*, *Death of a Salesman*, *Breakfast at Tiffany's*, and *Extremely Loud and Incredibly Close*. We'll likely look at the work of Langston Hughes, Frank O'Hara, Walt Whitman, Emma Lazarus, Jay-Z, Nas, Spike Lee, and Junot Diaz, among many others.

Other Worlds: Fantasy, World Building, and the Reader's Imagination

14052

Grade Level: 12th

Open the front cover of a book from *The Lord of the Rings* series, and you'll find a map – one that might, at first glance, look like it belongs in an antique World Atlas. But linger for a moment and you'll discover the intricate geography of a world entirely separate from our own: Middle Earth. It – like the worlds of *Harry Potter*, of *Game of Thrones*, of the Marvel superheroes, Narnia, Star Trek, and Snow White – has a landscape, a culture, and a language entirely its own. So how does an author build a world? This course will consider the ways authors discover, design, and develop rich imaginary worlds and convey them to their readers. We'll look at the roots of the tradition of world building in mythology, fable, and fairytale, and trace them right up through contemporary fantasy worlds like Hogwarts and Wakanda. We'll also ask ourselves: what can a look through the prism of a fantasy world tell us about our own?

Potential texts include: *Harry Potter and the Sorcerer's Stone*, Greek mythology, fairy tales from Brothers Grimm and Hans Christian Andersen, selections from *The Chronicles of Narnia*, *The Hobbit*, *The Golden Compass*, and stories by Ursula LeGuin and Neil Gaiman.

Power to the People: Hip Hop, Art, and Literature for Social Justice

14106

Grade Level: 12th

In this course, we will examine literature, art, and music that engages in issues of social justice. How do artists and musicians use their art to reveal injustices in our society and perhaps even advocate ways to fight those injustices? How do writers imagine new realities and wield their literature as instruments for social change? We will think critically about issues of privilege, oppression, race, class, sexual orientation, and gender and discuss ways that these structures of power intersect. As individuals, we will examine our own backgrounds, biases, and beliefs and think about how we each approach and relate to these issues. We will often examine works that challenge dominant narratives and ideologies and offer new ways of seeing the world. We will read novels, short stories, essays and poems by authors such as James Baldwin, Gloria Naylor, Audre Lorde, Ta-Nehisi Coates, Piri Thomas, Walter Mosley, Natasha Trethewey, John Murillo, and more. We'll examine music, with a focus on hip hop, by artists such as The Notorious B.I.G, Public Enemy, Kendrick Lamar, J. Cole, Jay-Z, Beyonce, and more. We'll analyze visual art by artists such as Kerry James Marshall, Carrie Mae Weems, Helen Zughaib, William Pope.L, and various muralists and street artists like Taki 183 and Banksy. We will also familiarize ourselves with ideas from critical race theory, queer theory, and feminist theory. This class will encounter many complex and difficult questions of race, gender, and politics, so students should be prepared for challenging discussions and debates. Students who enter this class should have an open mind, curiosity, compassion, and a desire to work towards a more just and equitable future.

Russian Literature: The Soul on the Steppe

14046

Grade Level: 12th

Ian Frazier once humorously called Russia, “the greatest horrible country on earth” and Virginia Woolf likened reading Russian Literature to “seeing a naked man crawl from a train wreck.” How’s that for a starting point? Russia is an immense nation that has a habit of producing both brutal dictators and imaginative geniuses, often at the same time. Despite the adversity, it is difficult to find a period in history when another civilization produced an equal number of literary masterpieces as Russia’s “Golden Century” from 1815—1917. Russian literature burned hot: a hundred years of unparalleled brilliance and then, poof, it all went dark as Stalin rose to power in the wake of the Russian Revolution. We will focus on the literary giants Tolstoy, Dostoevsky, Gogol, Turgenev, Pushkin, and Chekov. We’ll travel to St. Petersburg to witness one of the most famous murders in all of literature, fall hopelessly in love in Yalta, stop in Moscow to meet a beautiful woman who pursues a disastrous affair, and drift across the Siberian steppe where Dostoevsky found both God and creative inspiration after a firing squad held a gun to his head.

Theatre on Both Sides of the Pond: Page to Stage

14033

Grade Level: 12th

This course will examine past and current American and British plays. The curriculum is determined by what is playing between New Haven and New York City. Students will study and go see a series of plays written on both sides of the Atlantic. Theater is a device to explore the collective conscience of a nation. Through the lenses of playwrights, we will look at the challenges and collective joys of the world around us. Comedies and tragedies abound in this class.

Playwrights we will be studying: Lin-Manuel Miranda, Stephen Sondheim, Tom Stoppard, Samuel Beckett, William Shakespeare, Tony Kushner, and Tennessee Williams, to name a few. Some of the plays we have seen: *Hamilton*, *Book of Mormon*, *Sleep No More*, *Hamlet*, *Fun Home*, *Into the Woods*, *Arcadia*, and many more.

**There will be an additional fee for tickets.

HISTORY AND SOCIAL SCIENCES

The Brunswick and Greenwich Academy History & Social Sciences Departments have developed a curriculum based on the premise that history and humankind are shaped by the past. Therefore, the examination of this past is paramount in preparing for the future. Furthermore, the study of history and the social sciences is critical to understanding the institutions and functioning of human society. At both Greenwich Academy and Brunswick, students develop historical thinking skills, learn how to analyze their own and others' opinions, and participate in civic and community life as active, informed citizens. Reading, writing, and speaking skills are promoted rigorously throughout the program.

Opportunities for pursuing history and/or social studies beyond the classroom are:

- Current Events Clubs at both Greenwich Academy and Brunswick School
- Debate teams at both Greenwich Academy and Brunswick School
- The Brunswick/Greenwich Academy Magazine of History—an in-house writing journal
- Participation with other schools in the Model U. N. program and Harvard's Model Congress
- Louise Lehrman Visiting Fellow Lecture in American History

Modern World History

31002

Grade Level: 9th

Prerequisite: None

*Required course

This required survey course introduces students to the ideological concepts that define and dominate the modern era. The course is chronological and thematic, exploring such themes as globalization and its impact, technology and demographic change over time, and how revolutions and reform movements have transformed the modern world. The course seeks to account for the West's dominance in this era. Specific content areas include: globalization and trade; the Enlightenment and Atlantic Revolutions; the rise and fall of eastern empires; industrialization and its global consequences; nationalism and imperialism; early twentieth-century revolutions; and the world wars. Furthermore, the class culminates with an exploration of modernity's impact on current issues in the postmodern world. The class seeks to enhance students' abilities to engage in historical inquiry, their empathy for the human condition, and their understanding of the complexities of the human record. Students will continue to develop their reading comprehension and critical thinking skills with the use of diverse resources, including primary, secondary, and material sources as well as scholarly monographs. Numerous strategies are implemented to engage students and bolster their ability to synthesize and analyze historical events in this class, including projects, a research paper, oral presentations and discussion, and various writing exercises.

United States History

33000

Grade Level: 10th - 12th

Prerequisite: *Required course

This course provides a comprehensive study of United States history, encouraging students to think, write and speak clearly about many of the fundamental issues in America's past. The scope is thematic, moving from the origins of settlement to world responsibilities and the pressures of modern times. Topics for study include: New England Puritanism, the meaning of the American Revolution, Constitutional issues, the causes of the Civil War, Industrialization, Immigration, the Gilded Age and Progressive reform, the Great Depression, the New Deal, U.S. responses to the Cold War, the Civil Rights Movement, including the lessons of Vietnam, and the eras of Carter, Reagan, Bush & Clinton. With the help of maps and original and interpretive sources, students explore American politics, economics, society and values. Class discussions and debates help develop communication skills and stimulate ideas to be pursued in required student research and writing.

United States History - Focus on Civil Rights (Expedition Course)

33001

Grade Level: 10th - 12th

Prerequisite: None. A signed commitment regarding experiential study tour is required.

*Fulfills U.S. History requirement

This course provides a comprehensive study of United States history, with a specific core focus on Civil Rights. The course will follow the traditional survey curriculum but will also seek to evaluate the evolving definitions of freedom, democracy, and civil rights in our national history. Special thematic attention will be paid to the African American narratives and topics will include but are not limited to: Slavery, Reconstruction, Jim Crow Laws, Voting Rights, Desegregation and contemporary civil rights movements.

A required Civil Rights Study Tour will augment the course--financial aid is available for eligible students. Students will travel to key cities and locations that were on the front lines of engagement during the 1960's Civil Rights Movement. The class will fly to Atlanta and then travel via bus to Selma, Montgomery, Birmingham and Memphis. As students get the chance to walk over the Edmund Pettis Bridge in Selma, the start of the famous Voting Rights March from Selma to Montgomery, or stand in Kelly Ingram Park in Birmingham, across the street from the bombing site of the 16th Street Baptist Church, the experiential impact on the students will be profound. The class will then visit the Lorraine Motel in Memphis where Dr. King was assassinated and the Civil Rights Museum where they will follow the footsteps of the activists and martyrs of the movement. During the bus journeys between the cities, the students will have an opportunity to watch movies and listen to music that will help illuminate the spirit of the 1960s. Each evening there will be an opportunity to debrief on the days' experiences and visits. This course does fulfill the state-mandated requirement for a yearlong U.S. History course.

ADVANCED PLACEMENT - HISTORY

Advanced Placement Prerequisite Statement - APPS

Advanced Placement courses in History (European, United States, World and Art History), U.S. Government & Politics, Comparative Government, Psychology, Economics and Human Geography are highly demanding. Admission to these courses is dependent upon approval of both the Greenwich Academy and Brunswick History & Social Sciences Departments.

Minimum grade requirements for applying to a given course are as follows:

Current Freshmen and Sophomores *should have* at least an A- in their current non-AP History course or at least a B+ in their current AP History course to be considered for an AP course for the following year.

Current Juniors *should have* a B+ in their current non-AP History course or at least a B in their current AP History course to be considered for an AP course for the following year.

Please note: Rising Seniors are given placement preference over Rising Juniors, Rising Juniors over Rising Sophomores.

All interested students must first complete and submit an application form. The respective department heads evaluate these forms, analyzing both their quantitative and qualitative merits. The criteria for acceptance include the following: the recommendation of the student's most recent history teacher, history and other relevant course grades over the past two years, the student's overall G.P.A, total academic and co-curricular commitments, and demonstrated evidence of enthusiasm for the subject matter. The final decision is contingent upon successful completion of the candidate's present history course.

Students enrolling in any AP course must take the AP Examination in that course—even if they have been accepted to college/university. In the first two quarters of the academic year, students who are performing below the normal standard for any given AP course may be asked to switch to a non-AP elective if their level of effort and/or achievement does not improve over time. Finally, students may not opt out of an AP of their own accord after the add/drop period has passed.

AP Art History

36467

Grade Level: 11th - 12th

Prerequisite: Departmental approval (see APPS)

*Fulfills departmental course requirement

This course explores the global history of art from the Prehistoric period to the present and prepares students for the AP Art History exam in May. Art historians study works of art in their specific cultural contexts and analyze the role of art in society. The AP Art History course explores the political, economic, religious, intellectual, and social conditions that account for artistic production. We examine artifacts from Europe, the Near East, Asia (including China, Japan, and India), Africa, the Americas, and the Pacific region. The course is interdisciplinary in nature, including considerations of archeology, patronage, materials, and conservation. We begin with the question of what constitutes “art,” then move from a study of ancient Egyptian pyramids, Greek temples, and Renaissance painting to an examination of African sculptures, Mayan pyramids, and Chinese bronzes. Expansive in scope and time, the course concludes with a study of global contemporary art. Students engage in analytical writing, public speaking through Power Point and Podcasts, and a variety of creative projects. Field trips to the Metropolitan Museum of Art, the Museum of Modern Art, and other museums and galleries complement the curriculum.

Note: AP Art History fulfills the Arts Requirement at Brunswick School and Greenwich Academy.

AP Comparative Government & Politics

36420

Grade Level: 11th - 12th

Prerequisite: Departmental approval (see APPS)

*Fulfills departmental course requirement

AP Comparative Government and Politics will introduce the student to critical issues in contemporary and historical world politics. The course begins with a conceptual approach to political science through the introduction of themes such as power, political culture, and political organizations and institutions. Students use those themes to compare and to contrast the political experiences of specific nations. They examine Iran, Great Britain, Nigeria, Mexico, Russia and China and identify the characteristics of political systems that both distinguish and unite diverse countries. By the end of the course, students gain a stronger understanding of international issues of globalization, economic and political power, and political institutions.

AP Economics

38407

Grade Level: 12th only

Prerequisite: Departmental approval (see APPS)

This college-level course is a survey of both macroeconomics (fall) and microeconomics (spring).

Macroeconomics teaches those principles that apply to an economic system as a whole. The curriculum begins with an overview of the basics of economics and then moves on to a study of the measurement of economic performance, including trends in such areas as the gross domestic product, inflation, and unemployment. It analyzes national income and the price level, the role of money and banking, the workings of monetary and fiscal policies to balance the short- and long-term unemployment and inflation rates, and the federal budget and national debt. Lastly, it examines international economics.

Microeconomics concentrates on those principles that relate to the functions of individual decision makers in our economy. It explores concepts of opportunity costs and trade-offs; how different types of economies decide what, how, and for whom to produce; comparative advantage in trade; and consumer and producer supply and demand interaction, with attention to pure competition, oligopolies, and monopolies, as well as factors such as land, labor, and capital. It also considers the degree of government intervention in our market system and the effect of government taxation and transfer programs on income distribution and economic efficiency.

In May, students take the two-hour AP examination on Microeconomics and another two-hour AP examination on Macroeconomics.

AP European History

32007

Grade Level: 11th - 12th

Prerequisite: Departmental approval (see APPS)

*Fulfills departmental course requirement

This class is designed to mimic, in both its depth and breadth, an introductory college course in European history. The course content begins in the Renaissance and culminates with a study of post-Cold War Europe. Throughout the year students examine the political, economic, social, religious, intellectual, and artistic developments that played, and continue to play, a crucial role in shaping European society and the world beyond. The curriculum prepares students for the AP European History examination, which asks students to display a solid understanding of the principal themes in European history through multiple choice and free-response essay questions and an ability to work critically with historical documents.

AP Human Geography

36419

Grade Level: 11th - 12th

Prerequisite: Departmental approval (see APPS)

*Fulfills departmental course requirement

Human Geography is the study of the patterns and processes of human activity on the earth's surface. People are central to geography in that their activities help shape the earth's surface largely through their interaction with the physical environment. Human settlements and structures are part of that tapestry of interaction. The main areas of study are the nature and perspectives of geography, population, cultural patterns and processes, the political organization of space, agricultural and rural land use, industrialization, economic development and urbanization. Students also learn about the tools and methods which geographers use in their work. This course prepares students for the AP examination in Human Geography given in May.

AP Psychology

38867

Grade Level: 12th only

Prerequisite: Departmental approval (see APPS)

AP Psychology is a standard college introductory psychology course that covers a wide range of topics, including neuroscience, group behavior, perception, child development, learning, personality, and psychological disorders. The course introduces the basis of psychological theory as the study of human and animal behavior, before developing an understanding of behavior and thought as the result of the interaction between biology and the environment, the influence of social situations, and the physical, social, and cognitive development over a lifetime. In addition to preparing students for the AP Psychology examination in May, this course may provide students with an opportunity to perform their own psychological experiments, including a proposal, Institutional Review Board meeting, literature review, and published poster. A strong background in biology and/or human physiology is highly recommended, as many of the concepts covered in this course resemble those seen in high-level biology classes.

AP United States Government & Politics

38417

Grade Level: 11th - 12th

Prerequisite: Departmental approval (see APPS)

*Fulfills departmental course requirement

Greek philosopher Aristotle wrote that man is, "by nature a political animal." For better or worse, Americans are political beings who are ruled under a dynamic and complex system of government. This college-level course explores both general concepts and specific case studies, providing a more thorough understanding of the institutions, groups, and beliefs that make up the nation's political reality.

The curriculum includes: major political theories and actions; the study of the constitutional basis of the U. S. government; the role of political parties, interest groups, and the media; the interaction of the three major branches of national government; the development of civil liberties and civil rights; U.S. public policy from a macro perspective including issues related to taxes and entitlement programs. Current events are a critical part of the class program; each student will choose a story and present each semester during the course of the year on topics related to the AP-required units.

Because this is an Advanced Placement course, the material is meant to be challenging in order to prepare the student for the annual AP examination in May. Likewise, the types of exercises and assignments given are meant to enhance their test-taking skills, enabling the students to approach the exam with both confidence and a high degree of competence.

AP United States History

33070

Grade Level: 10th - 12th

Prerequisite: Departmental approval (see APPS)

*Fulfills departmental course requirement

The Advanced Placement course in U.S. History presents a college-level survey course to secondary school students. It differs from the regular American History course in that students are expected to perform more independently and analytically and be responsible for a heavier reading load. While the basic content and skills are the same, the course examines in greater depth such areas as political philosophy, intellectual and social movements, foreign policy, and historiography. More time is devoted to the study of primary and interpretive sources and the writing of expository essays. The course prepares students for the Advanced Placement examination in American History, given in May.

AP World History

38418

Grade Level: 11th - 12th

Prerequisite: Departmental approval (see APPS)

*Fulfills departmental course requirement

AP World History seeks to provide a solid understanding of the geographical, political, economic, social and cultural developments that have shaped global history from the classical era to the present. The course focuses on the analysis of five overarching themes, which include environmental and demographic trends, the influence of cultural factors such as religion and technology, the significance of state- and empire-building, the development of economic systems, and the evolution of social and gender structures. Truly global in nature, the class will examine the regions of Asia, Africa, Europe and the Americas and adhere to the AP emphasis on comparison, change over time, point of view, and historical context. Student assessments will include periodic tests, projects, and comparative and transitional essays.

FALL SEMESTER COURSES

Abnormal Psychology (f)

38478

Grade Level: 11th - 12th

Prerequisite: None

This elective explores one of the most interesting and important topics in psychology – mental illness. The purpose of this course is to provide an introduction to mental disorders in adolescent and adult humans. By examining case studies through the lens of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), students will explore what it means to be “abnormal” and become familiar with a variety of mental conditions, including depression, anxiety, bipolar, obsessive-compulsive, psychotic and trauma-related disorders. Focus will be on symptoms, epidemiology, etiology (cause for disorder at the cellular level), and treatment options. Students are encouraged to think analytically as a clinical psychologist or psychiatrist would and challenge their pre-existing beliefs regarding abnormal behaviors and personalities. Through classroom discussions and coursework, students will gain an appreciation for the challenges of those experiencing mental illness. The course will also promote a greater awareness and knowledge of psychopathology in hopes that we can reduce the suffering and stigma associated with mental disorders.

Advanced Civil Rights: A Seminar in Kingian Nonviolence Philosophy (f)

36475

Grade Level: 11th - 12th

Prerequisite: US History, US History Civil Rights, or APUS History

This course will examine the philosophy on nonviolence as expressed through the writings and example of Dr. Martin Luther King, Jr. The course will include an introduction to nonviolence and examples of how nonviolence has been applied throughout history. Through a variety of essays and articles we will establish a conceptual framework for the course by considering the extent to which people such as Gandhi and Martin Luther King, Jr. used nonviolence to achieve peace.

An off campus immersion experience is a requirement of this course. Financial aid is available for eligible students.

American Film: Big Screen Cultural Reflections (f)

36404

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

*This course is offered jointly through the history and art departments.

This course will celebrate America's most vivid cultural product, the Big Screen picture. Through readings, screenings and demonstrations, we will examine the craft, meaning and impact of some of the great films of the past 100 years. We will explore the roles of the producer, writer and director in developing the script. We will learn how cinematographers, production designers and editors shape images and sounds. We will look into the varying methods that produce performances that move us. We will discuss the criticism and business practices that define the tension between the art and commerce of moving pictures. Our work will always consider how film impacts and reflects US cultural landmarks of the day. Themes to explore include art versus entertainment, the teenage experience, life during wartime, civil rights, and gender roles. Students will be assessed on content through short written responses and in-class discussions. Final projects, highlighting the confluence of disciplines required to produce a film, will be fulfilled through an in-class presentation or paper.

This class can be taken in conjunction with the spring semester class, "American Film and Beyond," for full year credit, or as a one-semester course in the fall.

Debate I: How to Save Democracy while Winning an Argument with your Parents (f)

39040

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

*Fulfills departmental requirement

This course introduces students to the practice of oral argumentation as a way of further investigating various modern contentious issues. Students come to understand the basic structures and tools of argument construction while addressing problems of the modern world, such as racial inequality in the United States, criminal justice and police action, environmental policy, and biomedical ethics. Debate is a shared journey toward truth that brings debaters closer together, even when they represent opposing sides of an issue or come from vastly different perspectives. There are two primary goals of this course. The first is to teach you how to debate and hone all the skills associated with such a talent, not the least of which is being a confident public speaker. The second is to examine local and global issues of the day through the lens of oral argument, which necessarily requires historical context. In so doing, debate fosters the essential democratic values of free and open discussion. In taking this class you literally might be helping save democracy.

The class may be taken as a single semester in the fall, a single semester in the spring, or both semesters sequentially. In the fall, we begin with a robust foundation of logic, argument formation, and speech before getting into our case study debates. In the spring, we revisit these foundations, albeit from different angles and in slightly more condensed fashion before starting new case study debates. Debate topics change from the fall to spring. Each semester offers an optional opportunity to compete in debates with other schools.

Economics: Entrepreneurship (f)

38404

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

Do you think that someday you would like to be your own boss? Do you have a business idea that you are sure will be a winner? Or maybe you don't have the idea yet, but want to know how to launch your business once you find it? This class will help you answer these questions and possibly avoid being part of the 50% of companies who fail after their first five years. You will learn the same methodology taught by the top business schools in America, such as Stanford and Harvard, called the Lean Startup. Thus, you will develop your own business models, test and revise them, and decide if they are worth pursuing. Also, you will improve your collaboration, presentation and analytical skills by looking at case studies and real-world business start-ups.

Everyday Economics (f)

36471

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

This course is designed to give students a foundation in the most important economic concepts. Topics include the following: how economics makes us better decision makers, the forces behind the prices that we pay for things, the government's role in stabilizing the economy, and the role of innovation and incentives in a free market. All topics will be taught with a focus on the United States economy. Some semester highlights include: spending some time every week looking at Econ in the news and in pop culture, reading selected chapters from the trilogy of the best selling *Freakonomics* books, watching the *Freakonomics* documentary, reading the weekly Sunday *New York Times* "Economic View," and creating our own YouTube videos that will help other students understand important economic concepts. This class will make future Econ courses taken at the college level much easier to digest!

Impact of Technology: An Economic Perspective (f)

38412

Grade Level: 11th - 12th

Prerequisite: None

*This course is offered jointly through the history and science departments.

Technology advances drive commercial growth in the global economy. This course begins with a brief historical review of how major technological advances have impacted our economy. Examples include the transistor/microprocessor, the telephone and the airplane. Each student will explore the economic impact of one of these advances in depth.

A substantial majority of the course looks to the future. Many potential technology advances are likely to have a disruptive impact on our current economic situation. Our objective is to engage students in thinking about the future – and explore how these technologies will influence growth. Students will select a technology of focus, research its potential impact, and present their findings to the class.

Modern Middle East (f)

36413

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

*Fulfills departmental requirement

This semester course provides students with a foundation in the 20th century history of the Middle East and North Africa, in order to explore contemporary events in the region in greater depth. While countries in the Middle East are often the subject of dire headlines, the context for those headlines is often unexplained or misunderstood. To better understand the recent history of Syria, Egypt, Iraq, Turkey and Israel, students engage with film, contemporary art, graffiti, poetry and music. Guest lecturers include writers, artists, and musicians. This class is discussion and project based, with emphasis on critical thinking skills.

Sport Psychology (f)

38479

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

Have you ever wondered what motivates athletes to train? Why do some athletes experience pre-game anxiety and is it normal? What can lead some individuals or teams to choke under pressure, or how can this be prevented? Can mental toughness be developed or are we born with it? What creates positive team cohesion? These are just a few sample questions that we will explore in this introductory course to the field?

Sport Psychology is a field of study in which the principles of psychology are applied in a sport setting, and are often utilized to enhance athletes' individual and team performance. The course is designed to provide students with a basic understanding of the theories and concepts involved in the psychology of sport, while also looking at how past and current research has been applied to propel the field forward.

Some of the concepts that will be covered in this course include achievement motivation, goal-setting, attentional focus, imagery and visualization techniques, self-confidence, team cohesion and group dynamics, and other related topics such as coping with stress in sport, injury, and burnout. We will explore case studies, analyze news articles, engage in discussions about research, create our own sport journals, and even watch some famous sports movies to learn and apply the concepts. The field of sport psychology is still continuing to evolve, so although this course will not cover everything, it will lay a solid foundation for those interested in the course material.

Today in the News (f)

36473

Grade Level: 11th - 12th

Prerequisite: None

In this course we will spend the first part of every period reading a variety of news sources, including but not limited to the New York Times, the Wall Street Journal, the Washington Post, the National Review and the Atlantic. In addition, we will make use of news aggregators like Allsides.com and RealClearPolitics and analysis sites like FiveThirtyEight. The second part of class each day will include analysis and discussion of articles, background research and conversations with faculty members and other guests with relevant expertise. Since it's an election year, we will likely spend part of the fall considering the election and its impact on U.S. politics and policy. However, reading the newspaper also includes reading about the arts, crime, sports, economics and many other topics. Throughout the year, we will likely find ourselves discussing all of these subjects as well as discussing the nature of the press and how something becomes "news" and is treated as news.

Students can expect to write news summaries, opinion-style pieces and occasional research based papers. This class can be taken either as a full-year course or as a one- semester course in either the fall or the spring. This class is open to juniors and seniors.

Today's China and Japan: History, Culture, and Economy (f)

38408

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

*Fulfills departmental requirement

Let's face it, you will more than likely visit China or Japan for leisure or business at some point in time in your life and/or interact with people from these two countries in college or the workplace. This semester course will give you a head start on what's currently going on in these two areas as well as shed some light on their unique cultures and history—an often-shared experience between sometimes bitter rivals.

As the #2 (China) and #3 (Japan) economies in the world and thereby, major trading partners with the U.S., it is vital to get a more thorough and balanced understanding of the region through the distinctive lenses of these two Asian political and commercial powers.

The course content will focus on: basic geography; modern history (including Western attempts at imperialism, World War II, and the Post-WW II era); growth of the modern economy and governmental systems; cultural attributes including: family, schooling, work, religion, art, food, pop culture, and other leisurely pastimes; current tensions and prospects for the future.

SPRING SEMESTER COURSES

A History of Race in the United States (s)

38421

Grade Level: 11th - 12th

Prerequisite: US History and Group X English

*Fulfills departmental requirement

Race is not biological. There is more genetic variation in a flock of penguins than there is in the human species. There is more genetic variation within groups that have come to call themselves races than there is across groups who have come to call themselves races. Race is something we built. But why? And how?

Have people of European ancestry always been considered white? Are people of African descent all black? Is calling Asian Americans a "model minority" a compliment? Does race impact the healthcare we receive? How about where we live? Or who we allocate resources to?

In this course, students will develop a sophisticated conceptual toolkit to make sense of the way race operates in the world around them. We will examine the concept of race through an interdisciplinary lens, blending history, literature, art, and science. We will connect contemporary events to historical processes and individual experiences to institutional systems. Through this course, students will gain the skills to navigate the complexities of an ever-evolving world in a manner that is intentional and empowered. In confronting their own identities, students will grow in their capacity to not only analyze the past, but also transform the status quo.

Abnormal Psychology (s)

38480

Grade Level: 11th - 12th

Prerequisite: None

This elective explores one of the most interesting and important topics in psychology – mental illness. The purpose of this course is to provide an introduction to mental disorders in adolescent and adult humans. By examining case studies through the lens of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), students will explore what it means to be “abnormal” and become familiar with a variety of mental conditions, including depression, anxiety, bipolar, obsessive-compulsive, psychotic and trauma-related disorders. Focus will be on symptoms, epidemiology, etiology (cause for disorder at the cellular level), and treatment options. Students are encouraged to think analytically as a clinical psychologist or psychiatrist would and challenge their pre-existing beliefs regarding abnormal behaviors and personalities. Through classroom discussions and coursework, students will gain an appreciation for the challenges of those experiencing mental illness. The course will also promote a greater awareness and knowledge of psychopathology in hopes that we can reduce the suffering and stigma associated with mental disorders.

American Film and Beyond (s)

36450

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

*This course is offered jointly through the history and art departments.

This course will celebrate the Big Screen picture from Hollywood and beyond. Through readings, screenings and demonstrations, we will examine the craft, meaning and impact of some of the great films of the past 100 years. We will explore the role of the producer, writer and director in developing the script. We will learn how cinematographers, production designers and editors shape images and sounds. We will look into the varying methods that produce performances that move us. We will discuss the criticism and business practices that define the tension between the art and commerce of moving pictures. Our work will always consider how film impacts and reflects relevant cultural landmarks of the day. During each semester we will focus on different themes including art versus entertainment, the teenage experience, life during wartime, civil rights, and gender roles. Students will be assessed on content through short written responses and in-class discussions. Final projects, highlighting the confluence of disciplines required to produce a film, will be fulfilled through an in-class presentation or paper.

This class can be taken in conjunction with the fall semester class, "American Film: Big Screen Cultural Reflections," for full year credit, or as a one-semester course in the spring.

An Introduction to Behavioral Economics (s)

36472

Grade Level: 11th - 12th

Prerequisite: Everyday Economics or taken in conjunction with AP Economics

Behavioral Economics is a fascinating and growing field of economics that incorporates psychology with standard economic theory. Whereas traditional economics assumes we are all rational decision makers, behavioral economics challenges that fundamental tenet. We will explore parts of some recent current best selling books on the subject, like *Predictably Irrational*, *Thinking, Fast and Slow*, and *Nudge*. Students will also design and conduct their own experiment in order to test hypotheses, based on recent findings in the field of Behavioral Economics, on the GA/Brunswick population. There is a reason that this sector of Economics is growing! Experience the excitement for yourself!

Cognitive Psychology (s)

38477

Grade Level: 10th - 12th

Prerequisite: B in Biology

How do we remember things? What is intelligence? How do we learn? How do we get smarter? We go to school to learn about a variety of subjects, from the humanities to the sciences. This course takes a step back and investigates how all this learning occurs. To understand how knowledge is shared and developed in the classroom, we will look at how our minds interpret and make sense of what we hear and what we see. In addition, we will investigate the importance of social interaction to learning. Students will participate in web-based cognition experiments and discussion blogs, create and carry out their own psychological experiments with informed and willing participants, and develop a final research project relevant to the course topics. Finally, this course covers many of the same topics as AP psychology and provides for a great conceptual foundation before taking that course.

Criminal Justice (s)

36470

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

* Fulfills departmental requirement

Why do so many people end up in jail? Look behind the headlines and analyze the foundations of the criminal justice system. Critically review the procedures related to how people end up in court (including police stops, interrogations, arraignments, trials, pleas, and sentencing) and examine Constitutional protections for individuals, case law, statutes, police and court procedures. Delve into differences between state and federal law and how and why "justice" may vary for different individuals. Read Supreme Court decisions in case studies about search and seizure law. Try out the process used by the FBI and Justice Bureau to gather statistics about crimes and victims. Weigh citizens' rights against the tools at the prosecutors' disposal (sentencing guidelines, attempt and conspiracy law) in real life scenarios and cases. Develop your own view about what works or doesn't in our criminal justice system. Students will learn legal terminology, constructs, and procedures. Examination of case studies, courtroom simulations, classroom debates, and analytical and creative writing will be at the center of student led project work.

Debate II: How to Save Democracy while Winning an Argument with your Parents (s)

39041

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

*Fulfills departmental requirement

This course introduces students to the practice of oral argumentation as a way of further investigating various modern contentious issues. Students come to understand the basic structures and tools of argument construction while addressing problems of the modern world, such as racial inequality in the United States, criminal justice and police action, environmental policy, and biomedical ethics. Debate is a shared journey toward truth that brings debaters closer together, even when they represent opposing sides of an issue or come from vastly different perspectives. There are two primary goals of this course. The first is to teach you how to debate and hone all the skills associated with such a talent, not the least of which is being a confident public speaker. The second is to examine local and global issues of the day through the lens of oral argument, which necessarily requires historical context. In so doing, debate fosters the essential democratic values of free and open discussion. In taking this class you literally might be helping save democracy.

The class may be taken as a single semester in the fall, a single semester in the spring, or both semesters sequentially. In the fall, we begin with a robust foundation of logic, argument formation, and speech before getting into our case study debates. In the spring, we revisit these foundations, albeit from different angles and in slightly more condensed fashion before starting new case study debates. Debate topics change from the fall to spring. Each semester offers an optional opportunity to compete in debates with other schools.

Economics: Personal Finance & Investment (s)

38403

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

If you don't want to spend all of your life working for money, learn the skills necessary to make your money work for you. This course will explain the basics of personal financial management. It will begin with an overview of budgeting, borrowing, and saving principles. It will cover personal cash management, mortgages, buying versus leasing, credit scoring, personal income tax issues, and retirement investment opportunities. Students will prepare for a final project by getting an overview of portfolio theory, stock valuation, fixed income investments (including CDs, bonds, and annuities) and mutual funds. The final project will be a presentation of a plan to meet a long-term investment objective through structuring a mix of different investment instruments.

Environmental History (s)

38422

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

*Fulfills departmental requirement

Why are certain landscapes more appealing than others? Are national parks a good idea? What is sustainability? What are the causes and the effects of climate change in the U.S.? These and other related questions will be the focus of Environmental History – an interdisciplinary elective course that explores the connections between people and environments. The course will consist of four units, each of which will focus on a distinct academic discipline and feature guest instruction by a teacher working in that discipline. In the process of reading about the environment, engaging in scientific exploration outside, debating past and present American environmental policy, and traveling to a variety of natural settings, students in Environmental Studies will gain an awareness of the natural and human forces that have formed the world around them.

Leaders, Leadership, and Strategy (s)

38425

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

*Fulfills departmental requirement

What defines a leader? How do leaders create winning teams? How do leaders effectively manage organizations to achieve long term goals and end-states? Students in this semester course will explore the different principles and styles of leadership, using examples from the military, political, business, and sports worlds. We will examine the character traits that contribute to successful leadership, as well as those traits that can cause leaders to fail. In addition, students will learn to understand the nature of strategy and study leaders who have developed and executed successful strategies. We will employ a variety of media, including texts, films, case studies, etc. as we seek to understand the different styles and domains of leadership and strategy. Assessments will include blog and response activities, a research paper analyzing the leadership of a chosen figure, as well as cumulative unit assessments.

Today in the News (s)

36474

Grade Level: 11th - 12th

Prerequisite: None

In this course we will spend the first part of every period reading a variety of news sources, including but not limited to the New York Times, the Wall Street Journal, the Washington Post, the National Review and the Atlantic. In addition, we will make use of news aggregators like Allsides.com and RealClearPolitics and analysis sites like FiveThirtyEight. The second part of class each day will include analysis and discussion of articles, background research and conversations with faculty members and other guests with relevant expertise. Since it's an election year, we will likely spend part of the fall considering the election and its impact on U.S. politics and policy. However, reading the newspaper also includes reading about the arts, crime, sports, economics and many other topics. Throughout the year, we will likely find ourselves discussing all of these subjects as well as discussing the nature of the press and how something becomes "news" and is treated as news.

Students can expect to write news summaries, opinion-style pieces and occasional research based papers. This class can be taken either as a full-year course or as a one- semester course in either the fall or the spring. This class is open to juniors and seniors.

Understanding 9/11: Attack & Aftermath (s)

38419

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: None

*Fulfills departmental requirement

This course will explore the underlying forces that led to the four coordinated attacks in the United States on September 11th, 2001. Through the varied lenses of history and culture, students will study the recent social, political, and economic realities of life in the Middle East. The class will examine the general phenomenon of terrorism and more specifically, the radical ideology of Al Qaeda (the group that engineered the attacks on 9/11) and their former leader Osama bin Laden.

Students will also discover how Americans initially tried to cope emotionally with the horrors of 9/11 and later pushed to permanently memorialize the 2,977 victims of the attacks. Participants will scrutinize the various ways the US government responded to these acts of violence--both on the domestic and international fronts. Specific attention will be given to the creation of the Department of Homeland Security, the imprisonment and interrogation of "enemy combatants" both at Guantanamo Bay, Cuba and various "Dark Sites" across the globe, the passing of and subsequent renewal of the Patriot Act, and the ongoing wars and US troop numbers in both Afghanistan and Iraq--especially from the soldiers' perspective.

Finally, the class will look at America and its allies' overall counter-terrorism strategies in the present-day in dealing with groups like the Taliban, ISIS, Iranian-backed terrorist militias, and other jihadist affiliates in the Middle East & Africa as they try to promote "lone wolf" acts of terror in both the Middle East and the West.

FULL-YEAR ELECTIVES

Honors Humanities and Social Science Research Seminar

36424

Grade Level: 11th - 12th

Prerequisite: 9th and 10th grade history and departmental approval

*Fulfills departmental course requirement

The Humanities and Social Science Honors Research Seminar is a full year course open to juniors and seniors interested in diving deep into a single topic of their choice related to the course theme, “Ideology, Governance and Economics in the 1960s and 1970s.” After World War II, the Cold War created new alliances and imperial opportunities. Looking closely at cases like Chile, Venezuela, Iran, Vietnam, Congo and Brazil, how did ideological, strategic and economic imperatives converge to result in the major regime changes of the 1960s and 1970s? More broadly, what defines a regime, and how does regime change happen?

The course will open with an historical survey of the period using readings, guest lectures, and group research in the fall semester. Then, using that context as a point of departure, each student will generate a project related to the discipline, topic and research methods that are most compelling and relevant, whether it be in history, economics, political science, psychology, geography, sociology or law. Each student will produce a research paper of approximately 5,000 words (~20+ pages) by the end of the year.

Microeconomics and Macroeconomics

38409

Grade Level: 11th - 12th

Prerequisite: None

This full-year course covers both Micro as well as Macro Economic principles. Over the course of the year we will examine the motives behind the economic actions of individuals, firms and governments through the introduction of basic economic theories and concepts, including classical and Keynesian models, budget and trade deficits, unemployment issues, growth and inflation trade-offs, and international capital, money and product flows. Students are introduced to theories about the law of supply and demand, competitive and monopolistic markets, legal structures of firms, stock and bond markets, and personal finance management concepts. Daily discussions about current economic events and participation in a stock market simulation exercise help relate the theoretical to real life situations. Other course requirements include group and individual presentations, quizzes and tests, a major term paper and daily, active class participation.

Native American Studies: History and Literature (Expedition Course)

14051

Grade Level: 11th - 12th

Prerequisite: US History and English X; this course may be taken as a Full Year History elective, or may fulfill the Senior English elective requirement with completion of the Senior Essay

*Fulfills departmental course requirement

This course explores the history, literature, arts, and sociocultural development of Native American peoples. Students will explore life on and off the Native American reservation in texts produced by writers, activists, and historians from a wide variety of indigenous communities in the United States. The course will involve navigating historical and contemporary issues and topics in Native American studies, such as settler colonialism and genocide, indigenous resistance and self-determination, cultural survival, and political and environmental activism. This is an expedition course and we will enrich our interdisciplinary studies with guest lecturers, a unit on indigenous art, a visit to the Pequot Museum, and service and cultural opportunities. Some days the course will feel like a traditional history course; other days we will read and hold conversations more akin to the English classroom. When looking at the topic of national sovereignty (self-determination), for example, we will examine the works of historians Vine Deloria Jr., Roxanne Dunbar-Ortiz, and Donald Grinde, writers M.Scott Nomaday, Sherman Alexie, and Joy Harjo, and contemporary artists Alan Michelson, Nicholas Galanin, and George Longfish. We will draw from both primary and secondary source material in addition to novels, poetry, and film.

May include work from Handsome Lake, Jane Johnston Schoolcraft, M. Scott Nomaday, Leslie Marmon Silko (*Ceremony*), Sherman Alexie (*Indian Killer*, *Blasphemy*), Louise Erdrich (*Round House*), James Welch (*Fools Crow*), as well as selected essays and poetry and excerpts from oral tradition and films.

MATHEMATICS - BRUNSWICK SCHOOL

The goal of the Brunswick Mathematics Department is to develop in every student a firm grounding in the basic facts and skills, to extend these skills to advanced topics, and to encourage the initiative required for the solution of mathematical problems. A wide range of courses is offered in order to accommodate all students, including those who need the challenge of high-level content.

In order to encourage the number sense required in everyday life and to prepare students for the no-calculator sections of future examinations, a substantial amount of pencil-and-paper and mental arithmetic is involved in every course. In addition, technology is used to reinforce concepts and to tackle problems that cannot be solved by other means. Thus, every student is expected to have an approved graphing calculator.

Algebra and Computational Geometry

28100

Prerequisite: PreAlgebra

This course is designed for 9th grade students who have had difficulty in their previous Algebra I courses, or who have not yet taken Algebra I. The traditional Algebra I curriculum will be taught and consolidated during the year. Additionally, several areas from the standard geometry curriculum will be tackled, with students calculating angles, lengths, areas, and volumes using the most important theorems from the course. The aim is to equip the students to be successful in Geometry and Algebra II in their sophomore and junior years. Students will gain familiarity with mathematical notation and language, will further their understanding of the interchange between expressions written in sentence and mathematical forms, and will apply the ideas they are learning in both real-life and theoretical contexts. Most importantly, the inherent *sense* that lies behind all mathematical thought will be constantly reinforced.

Geometry

28099

Prerequisite: Algebra I

In this course students develop a detailed and analytical understanding of the ideas of shape and space to which they have been introduced in their middle school courses. Complex geometric situations are analyzed on a quantitative level and the ideas of a cohesive argument in the form of mathematical proof are included in the course. Also, the students' algebra skills are maintained and developed through application to geometric problems. The topics in this course include parallel lines and angles, polygons, similarity, the Pythagorean Theorem, areas and volumes, and circle theorems.

Accelerated Geometry

28101

Prerequisite: Algebra I and departmental approval

This course offers a more extensive range of topics and a higher level of problem solving than that which is required in Geometry, while covering material less rapidly and to a slightly more accessible level than in the Honors Geometry course. All the topics covered in Geometry are included here, along with higher-level proofs and some more advanced theorems and techniques.

Honors Geometry

28102

Prerequisite: Algebra I and departmental approval

This course includes all the topics covered in Accelerated Geometry, with students frequently encountering more complex problems and proofs. In this way, a foundation in deduction and problem-solving is established for students who wish to do high-level mathematical work in future years.

Quantitative Geometry

28103

Grade Level: 10th

Prerequisite: Algebra and Computational Geometry

This is an accessible course covering the standard range of geometrical topics from a solely computational standpoint. Ample time is devoted to each area of study in order to securely establish the necessary concepts and instill the confidence required for tackling more complex problems. Additionally, essential techniques from Algebra I are reviewed and a substantial number of Algebra II topics are introduced in order to prepare students for that course the following year.

Algebra II with Trigonometry

28200

Prerequisite: Geometry

In this course the algebraic understanding established in Algebra I and in Geometry is extended to more advanced topics. The student develops an understanding of abstract ideas such as the nature of functions and through this enhances his powers of analysis and increases his problem-solving ability. The topics covered include algebraic modeling, functions and graphs, polynomials, exponential and logarithmic functions, trigonometry of right triangles, trigonometrical functions of all angles, sequences and series, and probability.

Accelerated Algebra II with Trigonometry

28205

Prerequisite: Geometry and departmental approval

This course offers a more extensive range of topics and a higher level of problem solving than that which is required in Algebra II, with material being covered less rapidly and to a slightly more accessible level than in the Honors Algebra II course. All the topics covered in Algebra II will be included here, along with a more thorough treatment in several areas, including trigonometry, exponential and logarithmic functions, curve sketching, conic sections, and sequences and series.

Honors Algebra II with Trigonometry

28202

Prerequisite: Accelerated Geometry and departmental approval

This course covers all the topics included in Algebra II and Accelerated Algebra II, with more complex problems being tackled at every stage. Additionally, some topics that are more advanced than those in the regular and Accelerated courses are covered, including trigonometrical equations and identities, exponential and log equations, graphs of rational functions, complex solutions of polynomial equations, equations of circles and other conic sections, and arithmetic and geometric sequences and series. By learning to solve demanding problems and covering the more advanced topics, students extend their minds toward the high level of thinking required in advanced mathematics courses.

Precalculus

28300

Prerequisite: Algebra II

This course offers a comprehensive foundation in the advanced mathematical skills and concepts needed to study calculus. New topics are introduced, and subject areas already encountered in Algebra II are covered in greater detail, with more complex problems being encountered at every stage. The topics covered include functions, trigonometrical equations and identities, polynomials, inequalities, exponential functions, logarithms, complex numbers, matrices, sequences and series, and probability.

Accelerated Precalculus

28301

Prerequisite: Algebra II and departmental approval

This course offers a more extensive scope of material and a higher level of problem solving than that which is required in Precalculus, while offering a greater accessibility and a less demanding range of topics than in the Honors Precalculus course. Students frequently encounter word problems, and at every stage are encouraged to think logically and analytically. Thorough attention is paid to the facts and skills required for the study of calculus.

Honors PreCalculus

28302

Prerequisite: Accelerated Algebra II and departmental approval

This course is designed to provide students with effective preparation for Advanced Placement Calculus and future college-level mathematics and science courses. Throughout the course the development of the student's problem-solving ability is emphasized. The topics covered include functions, graphs, polynomials, exponential functions, logarithms, rational functions, trigonometry, parametric equations, conic sections, polar coordinates, systems of equations and inequalities, vectors (in two and three dimensions), sequences, series, mathematical induction, counting principles, and probability.

Statistics

28431

Grade Level: 12th

Prerequisite: Algebra II

This course is designed for students who have taken math in our regular track and will be pitched at a level accessible to all students who have passed Algebra II. Concepts will be tackled both on a descriptive and a quantitative level, with data sets being summarized using graphs and numerical measures. Statistical quantities will be evaluated both using basic arithmetical operations and using the more direct methods provided by technology. Throughout the course, interpretation of statistical quantities and graphs will be emphasized, and the concepts covered will be directly applied through surveys and other data-collection projects. Topics will include univariate data, correlation and regression, probability, random variables and probability distributions, sampling distributions, and statistical inference.

Applied Calculus

28405

Prerequisite: Precalculus

This course provides students with a practical introduction to calculus. Concepts are presented in an intuitive way and students learn to use advanced problem-solving techniques. The graphing calculator is used to clarify concepts and to produce numerical solutions to calculus problems. Topics include differentiation, applications of the derivative, techniques of differentiation, exponential and logarithmic functions, integration, techniques of integration, and differential equations.

Accelerated Applied Calculus

28299

Prerequisite: Precalculus and departmental approval

This course covers all the topics included in Applied Calculus, with more demanding problems being tackled within those topic areas. Additionally, some topics that are more advanced than those in Applied Calculus are covered. This course offers a strong basis in the ideas required for college courses in calculus and other mathematical disciplines.

AP Calculus AB

28407

Prerequisite: Accelerated Precalculus and departmental approval

An Advanced Placement course in mathematics consists of a full academic year of work in calculus comparable to that undertaken in colleges and universities. Calculators are used for solving equations numerically, evaluating derivatives and integrals, and for demonstration of calculus concepts. The topics covered in the course include functions and graphs, limits and continuity, derivative formulas, the Mean Value Theorem, related rates of change, antiderivatives, differential equations, the Fundamental Theorem of Calculus, the trapezoidal rule, areas between curves, volumes of solids of revolution, and techniques of integration.

AP Calculus BC

28417

Prerequisite: Honors Precalculus and departmental approval

AP Calculus BC is a full-year course in the calculus of functions of a single variable. In addition to all the topics covered in the AP Calculus AB course, the BC course covers derivatives of vector functions and parametrically defined functions, the area bounded by polar curves, logistic growth functions, the length of a path, work as an integral, improper integrals, convergence of sequences and series, power series, and Taylor polynomials.

Honors Math: Multivariable Calculus

28501

Prerequisite: AP Calculus BC and departmental approval

This course is an equivalent of a college Calculus 3 course. The topics covered include functions of several variables, vector-valued functions, partial differentiation, multiple integration including changes of variables, the gradient of a scalar field, the divergence and curl of a vector field, line integrals, surface integrals, Green's theorem, the divergence theorem, and Stokes' theorem.

Honors Math: Linear Algebra

28502

Prerequisite: Multivariable Calculus and departmental approval

This course is equivalent to a college undergraduate Linear Algebra course. The topics covered include solution of systems of linear equations, Gaussian elimination, matrices and their inverses, linear independence and dimension, linear transformations, orthonormal bases, determinants, eigenvalues and eigenvectors, positive definite matrices, and the singular value decomposition.

Honors Discrete Mathematics

28503

Prerequisite: Current placement in a standard honors or AP math course; departmental approval required

Designed for strong Honors/AP students, this course provides an introduction to a number of topics that have been developed specifically for their applicability to STEM fields. The material covered will include functions and set theory, combinatorics, symbolic logic and mathematical proof, sequences and mathematical induction, generating functions, and graph theory (the study of networks).

AP Statistics

28427

Grade Level: 11th - 12th

Prerequisite: Honors/Accelerated Precalculus and departmental approval or A average in Honors Algebra II and departmental approval

This course consists of a full academic year of work in preparation for the Advanced Placement examination. Students study the techniques of data collection and learn how to analyze the results both qualitatively and quantitatively. The graphing calculator is used extensively both for data display and for the precise statistical tests used in business, industry, and science. The topics studied include sampling, experimental design, probability, the normal distribution, the t -distribution, the binomial distribution, the chi-square distribution, the central limit theorem, correlation and regression, confidence intervals, and hypothesis testing.

Stanford Advanced Mathematics

28430

Prerequisite: AP Calculus BC and departmental approval

The Online High School (OHSx) at Stanford University provides mathematics courses in a variety of college-level subjects including multivariable differential calculus, multivariable integral calculus, linear algebra, differential equations, and number theory. All of the courses offered correspond to courses regularly taught to Stanford University undergraduates. Students tackle written assignments topic by topic, and are assessed by means of examinations provided by the Stanford program. In addition to the resources provided by Stanford University, the Brunswick teacher supervising the course provides help with concepts and problem-solving. Those completing OHSx courses may be eligible to receive college credit.

MATHEMATICS - GREENWICH ACADEMY

The department of mathematics at Greenwich Academy is dedicated to helping young women acquire the confidence and the fundamental skills necessary to succeed in mathematics. Students are empowered within the classroom environment to develop literacy and proficiency in mathematics as well as a command of mathematical concepts and problem-solving strategies. With a curriculum grounded in algebra, geometry, calculus and statistics, students develop strong analytical skills that provide a strong foundation for further study in mathematics or math-related courses after high school.

Algebra I

26010

Prerequisite: Departmental approval

Algebra I introduces students to graphical and algebraic exploration of linear, quadratic, rational, and radical functions. Students learn various techniques for simplifying and solving linear, polynomial, rational and radical equations both algebraically and graphically. Applications involving data analysis, geometry and trigonometry are also included.

Geometry

26100

Prerequisite: Algebra I and departmental approval

Geometry helps students develop a strong spatial understanding as they explore two-dimensional shapes in Euclidean and Cartesian coordinate geometry. Parallel lines and planes, congruence, similarity, polygons and quadrilaterals, circles, and right triangle trigonometry are the core topics of this course. Deductive reasoning is motivated by investigation, and Algebra I skills are integrated into all applications of the concepts studied. Completion of this course fulfills the geometry diploma requirement.

Geometry Accelerated

26101

Prerequisite: Algebra I and departmental approval

Geometry Accelerated parallels Geometry, with topics covered in greater depth and at a faster pace. The course emphasizes the traditional elements of Euclidean geometry. Deductive reasoning is motivated by student investigation, done both individually and collaboratively. Students are expected to have strong Algebra skills and will be asked to do some of their learning independently as they test hypotheses and make conclusions based on their work. In addition to Euclidean geometry, students will study coordinate geometry, congruence, similarity, and right triangle trigonometry in depth.

Honors Geometry

26102

Prerequisite: Algebra I and departmental approval

Honors Geometry assumes that students are ready to think and work independently. This course leads students to investigate complex geometric concepts and proofs, and develop a foundation in deduction and problem-solving. In addition to Euclidean geometry, students investigate the Cartesian coordinate plane (linear functions and conic sections), transformations, sets, vectors and right triangle trigonometry.

Algebra II

26200

Prerequisite: Geometry and departmental approval

The development of a strong fundamental understanding of polynomials, rational, radical, and trigonometric functions and expressions is the foundation of Algebra II. Students are expected to gain a working knowledge of polynomial, rational, radical, and trigonometric equations and inequalities, as well as develop a solid understanding and analysis of functions. Among the topics introduced are the basics of trigonometry, logarithmic and exponential functions and equations.

Algebra II Accelerated

26201

Prerequisite: Geometry Accelerated and departmental approval

In this course, the concepts established in Algebra I and Geometry are extended to more advanced topics. The development of a strong fundamental understanding and analysis of functions, with a focus on polynomial, rational, logarithmic, exponential, and trigonometric functions, is the principal objective. Students use algebraic and graphical techniques to obtain numerical solutions to complex equations. The ability to work and learn independently is an integral part of Algebra II Accelerated and is expected for success in this course.

Honors Algebra II

26202

Prerequisite: Honors Geometry and departmental approval

Honors Algebra II exposes students to advanced algebraic concepts and problem solving. Students are expected to work with a great deal of independence as they master algebraic manipulation, graphical applications, and problem solving techniques. A thorough development of the polynomial, rational, trigonometric, and logarithmic functions and their inverses highlights the course. Students completing the course successfully are expected to take the SAT II Level I Subject test.

Precalculus

26300

Prerequisite: Algebra II and departmental approval

Precalculus is designed to give students a solid algebraic and graphic understanding of polynomial, rational, trigonometric, exponential and logarithmic functions. New topics are introduced and subject areas already encountered in Algebra II are covered in greater detail, with more complex problems encountered at every stage. The graphing calculator is an important tool in this process. Upon successful completion of this course, juniors are expected to take the SAT II Level I Subject Test.

Precalculus Accelerated

26302

Prerequisite: Algebra II Accelerated and departmental approval

Precalculus Accelerated continues and further develops the study of functions begun in Algebra II, including polynomial, rational, trigonometric, logarithmic, and exponential functions. In addition, students are exposed to some discrete mathematics, conics, and the basic concepts of the limit, the derivative, and some simple derivative rules. The graphing calculator is an important tool in this process. Students are expected to take the SAT II Level I Subject Test following the completion of the course.

Precalculus with Statistics

26301

Prerequisite: Algebra II or Algebra II Accelerated and departmental approval

The first half of this course provides the student with a solid foundation in traditional precalculus topics including functions, their inverses, and their graphs with a focus on polynomial, rational, logarithmic, exponential, and trigonometric functions and equations. The second semester of this course provides the background for a college level AP statistics course. The topics include methods of data collection and graphical displays. Students learn how to choose appropriate methods for summarizing distributions of univariate data. Juniors are expected to take the SAT II Level I Subject Test upon successful completion of this course.

Honors Precalculus

26303

Prerequisite: Algebra II Honors and departmental approval

This course is designed to prepare students for Advanced Placement Calculus BC as well as further college level study in mathematics. The first semester continues with the study of functions begun in Algebra 2 Honors with an emphasis on the student's problem solving ability. Discrete mathematics is introduced including such topics as polar coordinates, vectors, parametric equations, mathematical induction, matrices, and sequences and series. The second semester focuses on the study of differential calculus including all applications of limits, continuity, differentiation, and related rates of change.

Calculus

26404

Prerequisite: Precalculus and departmental approval

This is a senior elective course that provides an introduction to differential and integral calculus. This course deals with the rules of differentiation, the applications of the derivative to graphing, rates of change, and optimization. Students will investigate techniques of integration, focusing on the Fundamental Theorem of Calculus as applied to areas under the curve, between curves, volumes of solids, and accumulations functions.

Statistics

26405

Prerequisite: Precalculus and departmental approval

The goal of this senior elective is to help students understand numerical information and enable them to make decisions based on their interpretation of this information. This is an activity-based course that introduces statistical concepts and builds a foundation applicable to a wide variety of disciplines. The topics studied include data collection, graphical representation, normal distribution, bivariate data, and inference.

AP Calculus AB

26407

Prerequisite: Precalculus Accelerated and departmental approval

This is a college-level course in calculus requiring considerable time, effort, and motivation. The topics covered include functions and graphs, limits and continuity, derivative formulas, the Mean Value Theorem, related rates of change, antiderivatives, differential equations, the Fundamental Theorem of Calculus, areas between curves, volumes of solids and revolution, and techniques of integration. All students in this course will take the AB Calculus Advanced Placement exam at year's end.

AP Calculus BC

26417

Prerequisite: Precalculus Honors and departmental approval

Calculus BC is a full-year college-level course in the study of calculus of functions of a single variable. Considerable effort and motivation are required for success in this course, as well as an ability to work and learn independently. The course begins with a review of the topics covered in Precalculus honors including all applications of limits, continuity, and differentiation. Integration of polynomial, trigonometric, and logarithmic functions is introduced, and integration and differentiation techniques are applied to vector, polar and parametrically defined functions. The BC course concludes with the study of differential equations, improper integrals, convergence of sequences and series, and Taylor polynomials. All students in this course will take the BC Calculus Advanced Placement Exam at year's end.

AP Statistics

26427

Prerequisite: Precalculus with Statistics and/or departmental approval

This course is a continuation of Precalculus with Statistics completing the AP Statistics curriculum. It is a college-level course in statistics requiring considerable time, effort, and motivation. After a quick review of univariate and bivariate data analysis, students then study simulation, probability, and statistical inference. All students in this course will take the AP Statistics Exam upon successful completion of this course.

AP Statistics (Y)

26428

Prerequisite: A- in Algebra II Acc., B+ in Honors Algebra II, and departmental approval

This course consists of a full academic year of work in preparation for the Advanced Placement examination. Students learn the techniques of data collection, conduct their own experiments and surveys, and learn how to analyze the results both qualitatively and quantitatively. The TI-83 calculator is used extensively both for data display and for the precise statistical tests used in business, industry, and science. The topics studied include sampling, experimental design, probability, the normal distribution, the t -distribution, the binomial distribution, the chi-squared distribution, the central limit theorem, correlation and regression, confidence intervals, and hypothesis testing.

Stanford Advanced Mathematics

26430

Prerequisite: Calculus BC and departmental approval

The Stanford Pre-Collegiate University Level Math & Physics program provides mathematics courses in a variety of college level subjects including linear algebra, multivariable calculus, differential equations, and number theory. Each student works under the supervision of a math department teacher, but the curriculum, problem sets, tutorials, and tests are sent from Stanford University. This is a course for students considering studying higher level mathematics and requires independent study. Note: All courses carry Stanford University Continuing Studies credit and students earn a Stanford University Continuing Studies transcript. (Formerly offered as University-Level EPGY).

COMPUTER SCIENCE - BRUNSWICK SCHOOL

Brunswick School's Computer Science curriculum reflects our philosophy that Computer Science is an extraordinarily important skill that is essential for every students' future success. Studying Computer Science fosters a strong and lasting foundation of critical thinking and problem-solving skills that are transferable across disciplines.

Brunswick has taken a bold initiative to make a semester of CS101: Introduction to Computer Science mandatory as a graduation requirement for the class of '23 onwards. It underlines our recognition that an education built upon Science, Technology, Engineering, and Mathematics is vital for academic success and life beyond high school.

Coding is not only engaging, interesting and fun; it quantifiably improves problem-solving, creativity, perseverance and collaborative skills. By expanding access to high-quality Computer Science coursework in high school, Brunswick is ensuring that our students are better-prepared to support their careers and creative aspirations in the highly competitive employment sectors of our 21st century economy.

FALL SEMESTER COURSES

CS 101: Introduction to Computer Science (f)

78601

Grade Level: 9th - 12th

Prerequisite: None

Note: CS101 is a mandatory graduation requirement for the class of '23 onwards

Behind every mouse click or touch-screen tap, there is a computer program that makes things happen. Brunswick's CS 101 course introduces the fundamental building blocks of programming and teaches you how to write fun and useful programs in Python. Combining a simple syntax with powerful routines for automation, game development, and web-programming, Python is a great choice if you're just starting to learn how to write code.

Using an integrative approach to engage students in compelling, real-world coding challenges, the course will have you writing programs, solving problems, and making things that work in no time. You'll explore basic programming concepts -- such as variables and functions, calculations, if-else statements, loops, lists, tuples, dictionaries, and classes -- and practice effective ways of writing readable, maintainable code through multiple exercises for each topic. You'll also learn how to make your programs interactive and to test your code for crash-resistance. You'll apply computational thinking practices, build your vocabulary, and collaborate to address topics and problems important to you.

The coursework is intended to equip students with a thorough understanding of fundamental computing ideas that transcend particular programming languages or computing technologies. Our overriding objective is to teach computational thinking – not just how to code – so students become better thinkers and communicators, while honing their critical-thinking and problem-solving skills.

STEAM 101: The Coding Palette (f)

78610

Grade Level: 9th - 12th

Prerequisite: None

Positioned squarely at the intersection of Computer Science and Visual Arts, the Coding Palette class is designed to promote software literacy within the visual arts, and visual literacy within technology. The class will carefully blend problem-solving ability with creativity, showing students not only how to code and solve problem sets, but prioritizing the artistic expressions they can create with these digital tools.

Extensively project-based and focused on collaborative team-work, the class will enable students from both disciplines to explore technology's contemporary interaction with arts, communication and design, while guiding them to find their own interpretation of those common threads.

The class will leverage MIT Media Lab's open-source Processing software language. Processing is a flexible software sketchbook and a language for learning how to code within the context of the visual arts. Quite similar but simpler than the Java programming language, Processing provides a graphical user interface for simplifying compilation and execution of projects. Computer Science and Studio Art students will have an opportunity to learn the basics of Processing language, and work together to create visual projections of their work.

Starting with theoretical lectures to teach programming, the class will seamlessly transition to practical studio time, where students will learn to prototype, develop and showcase their digital arts projects using algorithms, constantly tweaking and updating them to arrive at the most pleasing visual results.

Write Code! Make Art!

SPRING SEMESTER COURSES

CS 101: Introduction to Computer Science (s)

78602

Grade Level: 9th - 12th

Prerequisite: None

Note: CS101 is a mandatory graduation requirement for the class of '23 onwards

Behind every mouse click or touch-screen tap, there is a computer program that makes things happen. Brunswick's CS 101 course introduces the fundamental building blocks of programming and teaches you how to write fun and useful programs in Python. Combining a simple syntax with powerful routines for automation, game development, and web-programming, Python is a great choice if you're just starting to learn how to write code.

Using an integrative approach to engage students in compelling, real-world coding challenges, the course will have you writing programs, solving problems, and making things that work in no time. You'll explore basic programming concepts -- such as variables and functions, calculations, if-else statements, loops, lists, tuples, dictionaries, and classes -- and practice effective ways of writing readable, maintainable code through multiple exercises for each topic. You'll also learn how to make your programs interactive and to test your code for crash-resistance. You'll apply computational thinking practices, build your vocabulary, and collaborate to address topics and problems important to you.

The coursework is intended to equip students with a thorough understanding of fundamental computing ideas that transcend particular programming languages or computing technologies. Our overriding objective is to teach computational thinking – not just how to code – so students become better thinkers and communicators, while honing their critical-thinking and problem-solving skills.

CS 200: Advanced Programming with Java (s)

78615

Grade Level: 9th - 12th

Prerequisite: None

Note: CS 200 meets the requirement of a semester of Computer Science for the class of '23 onwards

This hands on course introduces "newbies" as well as experienced Python programmers to Java™ technology and Java programming techniques. The Java platform provides an object-oriented, portable and robust framework for application development, making it one of the most in-demand programming languages and the foundation of the Android operating system.

The interactive curriculum offers a scaffolded approach to learning, starting with the basics of computing and progressing to fairly sophisticated problem solving. Students will learn to formulate algorithms, solve problems computationally, and to implement those solutions with a Java program that employs objects and classes. They will be introduced to object-oriented design, applications and applets, fundamental data types, variables, flow control with conditionals and loops using iterations and decisions, class construction, methods and message passing arrays, string processing, file processing, and some event-handling and Graphical User Interface programming.

The focus is on developing high quality, working software that solves real problems, emphasizing object-oriented programming and modular code design. It includes coverage of fundamental I/O, and exception handling to detect and correct common programming errors at compile time and runtime.

This class can meet the requirement of a semester of Computer Science, besides serving as a stepping stone for those aspiring to take AP Computer Science in the fall.

FULL YEAR COURSES

CS 201: AP Computer Science Principles

78605

Grade Level: 9th - 12th

Prerequisite: CS 101: Introduction to Computer Science.

Departmental approval required.

AP Computer Science Principles is a college-level Computer Science course that seamlessly builds upon the learning curve of students taking Introduction to Computer Science. The curriculum of AP CSP is based on the syllabus developed by the College Board, and offers an easier alternative to the AP Computer Science A course. It introduces students to the foundational concepts of Computer Science and challenges them to explore how computing and technology can impact the world.

The coursework is extensively project-based, providing students from a wide range of backgrounds the opportunity to understand and participate in the dramatic changes to our lives brought about by computing. AP CSP is rich in computational content and designed to foster critical-thinking skills and engage students in the creative aspects of the field, without being focused solely on programming.

AP CSP introduces students to the "big ideas" of Computer Science: creativity, programming, abstraction, algorithms, large data sets, the Internet, cybersecurity concerns, and the global impact of computing. It gives students the opportunity to use technology to address real-world problems and build relevant solutions. The course is unique in its focus on encouraging students to think creatively in developing computational artifacts and a digital portfolio using simulations to explore questions that interest them, using an iterative process similar to what artists, writers, computer scientists, and engineers use to bring ideas to life.

CS 202: AP Computer Science A

78606

Grade Level: 10th - 12th

Prerequisite: CS 101: Introduction to Computer Science or CS 201 AP Computer Science Principles.

Departmental approval required.

AP Computer Science A coursework covers object-oriented programming using Java programming language and is meant to be the equivalent of a first semester, college-level course in Computer Science. It emphasizes problem solving and algorithmic development, using hands-on experiences and examples so that students can apply programming tools to develop iterative solutions that can scale up from small, simple problems to large and complex scenarios.

Basic and advanced features of the Java programming language are explored, including designing and building applications such as web applets. Core topics include variables, algorithms, decision statements, loops, strings, arrays, ArrayLists, methods, inheritance, abstract classes, interfaces, recursion, searching, and sorting. Students are also introduced to standard Java libraries and features such as error handling, threads, networking, and designing and building graphical user interface using AWT and Swing libraries. Much of the course is project based, to prepare students to take the College Board AP Computer Science A Exam in May, with assignments stressing the design of classes and algorithms appropriate to a problem.

CS 301: Advanced Honors Seminar: Data Science & Machine Learning

78607

Grade Level: 11th - 12th

Prerequisite: CS 201: AP Computer Science Principles or CS 202 AP Computer Science A.

Departmental approval required.

It's a universal truth that modern businesses are awash with data. However, it becomes an asset only when data scientists can tease actionable insights out of it, such as mitigating risk and fraud (by analyzing spending patterns), delivering relevant products (by collating feedback), reducing costs (by optimizing supply chain logistics), or personalizing customer experiences.

One of the hottest fields in tech, Data Science has virtually limitless potential - spanning across industries, roles and functions. Data science provides a set of methods and tools for assembling, scrubbing, analyzing and extracting insights from big data sets which may be highly structured or unstructured. Unlike computer programming, which is usually task oriented with specific functionality in mind, Data Science is more discovery oriented, involved in sourcing, mapping and transforming raw data into a clean data set for analyzing, visualizing and extracting new knowledge.

This course aims to provide a comprehensive introduction to Data Science and Machine Learning using Python. After covering the basics of Python programming language, the course transitions to leveraging it for Data Science using statistical modeling techniques such as linear & logistic regression, decision trees and random forests. The curriculum is designed to enhance computational and inferential thinking, while emphasizing collaborative teamwork for building projects that are based on real-life Data Science problems. The class will explore what Data Science and Machine Learning is, it's diverse applications; common terminologies; popular Python libraries like Pandas and NumPy; Core, descriptive and inferential Statistics; Correlation; Hypothesis testing; Confidence intervals & margin of error; Pattern recognition via supervised and unsupervised learning, and much, much more!

Students will build their own portfolio of open-source GitHub projects on clustering methods; scraping websites and extracting information; data cleaning and data visualizations, ending with learning how to design neural networks.

ENGINEERING AND COMPUTER SCIENCE GREENWICH ACADEMY

The GA Upper School Engineering and Computer Science Department works to build on the foundation of creating, designing, and computing that students developed during their time in our Lower and Middle Schools. The studies of engineering and computer science invoke problem solving, designing with a purpose, building to specification, and algorithmic thinking, all while promoting both collaborative work and independent resourcefulness. We aim to provide our students with an understanding of how these tools can be used in the real world and believe that possessing the ability to design objects and software, and to write software prepares students for the problems and opportunities of the 21st century. We provide courses for those who are new to writing code and the process of physical computing so they can not only understand foundational engineering principles and computer science but also become better thinkers. We also offer coursework for those who would like to pursue advanced work through the AP curriculum and beyond.

The fall semester *Introduction to Computer Science* course serves as the entry point to all the more advanced Computer Science courses offered at Greenwich Academy.

FALL SEMESTER COURSES

Introduction to Computer Science (GA)

76601

Grade Level: 9th - 12th

Prerequisite: Group 9: concurrently enrolled in Accelerated Geometry or above

This course serves as the entry point to all more advanced Computer Science courses offered at GA, including the AP Computer Science Principles, AP Computer Science A, and Honors Engineering Principles and Computing.

This single semester course is designed for students with little or no programming experience and serves as an introduction to the field of computer science and programming. Students will learn the fundamentals of programming while beefing up their problem solving skills. They will learn to think like a computer scientist through applying logic and creativity to the design of programs for a variety of problems. They will learn to dismantle problems and approach them systematically on their own and in a collaborative environment - two essential skills. While this course is a springboard for the future study of computer science and engineering, its lessons will be applicable to a much broader set of fields.

Note: At the end of this course students may continue on to Computer Science Principles in the spring with department approval.

SPRING SEMESTER COURSES

AP Computer Science Principles (GA)

76610

Grade Level: 9th - 12th

Prerequisite: Introduction to Computer Science (GA course) and Departmental Approval

For those students who took the introductory course during fall semester, this course continues where they left off, but with a broader focus. AP Computer Science Principles focuses on a much more diverse set of issues than the introductory course, including the use of programs to analyze data, the internet, the impact of technology on society, and a more in-depth discussion of algorithms. These topics allow students to engage with technology in an entirely different way than they are used to!

FULL YEAR COURSES

Honors Engineering Principles and Computing (GA)

76605

Grade Level: 10th - 12th

Prerequisite: AP Computer Science A and Departmental Approval

This class is designed for students who enjoys their math and science courses, or students who have enjoyed their time in the Engineering & Design lab. This year-long, heavily project-based course will focus on applying skills students have gained in the introductory course to a variety of engineering topics. The course will feature four modules, each beginning with a traditional lecture component, followed by a series of guided and independent projects. Topics will include image and/or audio processing, physical computing, machine learning, and linear algebra and each module will introduce students to a fundamental engineering concept.

Honors Engineering and Design I (GA): Inventor's Workshop

36402

Grade Level: 11th - 12th

Prerequisite: Departmental approval and pre-course survey

*This course is offered jointly through the Engineering & Computer Science and Visual Arts departments and will be listed under both departments

While Inventor's Workshop focuses on design, building, digital fabrication, creative coding, programming microcontrollers, and electronics, it is not your typical engineering course. In this course you will be able to bring your wacky, alternative, design and engineering ideas to life. Held in GA's E+D Lab and built around a collection of core projects, this course is designed to bring out the creative potential in every student. Our lab work is grounded in experimentation, possibilities, and documenting the process, as students narrow down their ideas towards a finished product. This honors level course will prepare students with all of the technical tools and problem solving skills needed for Engineering and Design II, as well as advanced design, interactive, and new media possibilities in the visual arts.

Honors Engineering and Design II (GA): Inventions That Make Life Better

36403

Grade Level: 11th - 12th

Prerequisite: Honors Engineering and Design I (GA)

*This course is offered jointly through the Computer Science and Engineering and Visual Arts departments and will be listed under both departments.

This course is designed for students who have experience working with 2D and 3D design, digital fabrication, electronics and microcontrollers and would like to apply these skills to engineering problems of their design. Students will engage with the cyclical engineering design process to come up with solutions. Greenwich Academy's Engineering and Design Lab offers state-of-the art fabrication machines and tools for building and prototyping their designs. The class will culminate in a presentation of projects and prototypes to a panel.

AP Computer Science A (GA)

76600

Grade Level: 10th - 12th

Prerequisite: Departmental Approval and satisfy one of the following: complete the GA Introduction to Computer Science course (A- or better), or concurrent enrollment in BC Calculus.

GA's AP Computer Science course is for the student who likes to think about and tackle problems. The curriculum for AP Computer Science is based on the syllabus developed by the College Board. Our focus is on problem solving and algorithm development using the AP Java Language Subset as our tool kit. You will study programming methodology, algorithms, data structures, procedural and data abstraction, and object orientation.

Students will leave the course with a solid understanding of computer science as a field of study, the skills to write programs in Java and significant experience with problem solving and debugging. All essential skills for the 21st century no matter what you decide to study!

Honors Engineering & CS Seminar (GA)

76602

Grade Level: 11th - 12th

Prerequisite: AP Computer Science A and Departmental Approval

This is an advanced topics course for those who love programming (or maybe just like it a lot), have completed AP Computer Science A and are interested in going further. Students enrolled in this course will tackle a variety of topics to build their problem solving skills and their knowledge of JavaScript, Java, and/or Python. Topics will change year to year, including data structures and iOS Programming.

SCIENCE

Students are urged to study science during each of their Upper School years and required to complete work in the basic sciences of biology, chemistry, and physics prior to graduation. The goal is to create and inspire students to become scientifically literate and critical thinkers. Through interactive, investigative study students learn to use the scientific method to answer questions which further serves to promote and develop creative problem solving applicable across all disciplines. The program seeks to develop skills in scientific observation, data collection, analysis, and the drawing of conclusions as well as to provide opportunities for students to explore their own scientific interests through a wide offering of science electives and independent studies. Our offerings serve to foster a sense of curiosity, show the applicability of science in daily life, and provide students with the background needed to make informed decisions in a world increasingly affected by science and technology.

Biology

51000

Grade Level: 9th

Prerequisite: None

This course will help to develop an appreciation for the beauty, complexity, and diversity of living systems. The focus of the course is on both the juxtaposition and similarity of the physiological processes present in all living things and how these connections help us understand natural selection and other evolutionary processes. The course is taught as a unified subject rather than disconnected units, and through classroom and laboratory experiences, students will accumulate a set of concrete proficiencies from which they can draw in future science courses.

Honors Biology

51020

Grade Level: 9th

Prerequisite: Science: A- in 8th Grade Science AND

Math: Honors Math or Accelerated Math concurrently

Departmental approval is necessary in all cases.

This course offers a comprehensive investigation of high school biology. Although the course strives to develop an appreciation for the beauty, complexity, and diversity of living systems, each topic is explored in-depth. Students are exposed to significantly more vocabulary and detailed processes, and an emphasis is put on the development of scientific-inquiry skills that will enable students to become more sophisticated in conducting investigations and explaining their findings. Topics include: ecology, evolution, genetics, biochemistry, cell biology, and animal and plant physiology.

Honors Expedition Biology - A Molecular Approach

51022

Grade Level: 9th

Prerequisite: Science: A- in 8th Grade Science AND

Math: Honors Math or Accelerated Math concurrently

Departmental approval is necessary in all cases.

*Signed commitment regarding required expedition study tour is required

This course examines many of the major topics of the biological sciences through a molecular lens. Using a laboratory-based approach to learning, the curriculum will investigate such concepts as the chemistry of biological molecules, cell biology, genetics, biotechnology, population genetics, and human anatomy and physiology. Students will become skillful with a variety of molecular biology-based laboratory techniques. The course aims to mirror authentic laboratory settings as students will become familiar with experimental design, data collection and analysis, and the presentation of their findings. A required research expedition will augment this course- financial aid is available for eligible students.

Research Expedition

(Dates TBD, expedition will take place during the 2020-2021 school year)

Students will travel together to a research location (TBD) in order to take part in an ongoing research effort. Students will work alongside principal investigators, post-docs, and graduate students, and their work will be in an authentic research setting- implementing methods learned throughout the course. Throughout the expedition, students will rotate around various research projects to gain hands-on experience, and will also enjoy a series of lecture and discussion sessions.

Chemistry

52000

Grade Level: 10th - 12th

Prerequisite: Biology

Students will have an overview of the fundamental principles of Chemistry. The course examines the composition of various substances and the changes they can undergo. Major topics are introduced via both classroom work and laboratory experiments and include atomic theory, chemical bonding, stoichiometry, properties of solutions, gas laws, thermodynamics, redox, equilibrium, and acid-base reactions. The course features both qualitative and quantitative analyses of the relationships between variables associated with chemical reactions. Inquiry based laboratory experiences are included throughout the year.

Honors Chemistry

52020

Grade Level: 10th - 12th

Prerequisite: Science: B in Honors Biology AND

Math: B+ in Honors Geometry, or A- in Accel. Geometry, or B in any level Algebra II

Departmental approval is necessary in all cases.

This course offers a more comprehensive introduction to the fundamental principles of Chemistry. Topics include atomic theory, chemical bonding, stoichiometry, properties of solutions, gas laws, thermodynamics, redox, equilibrium, and acid-base reactions. These topics are covered through both classroom work and laboratory experiments. The course stresses a more quantitative approach to the major topics covered. Upon completion of the course, the student is well positioned for more advanced courses within the discipline. Inquiry based laboratory experiences are included throughout the year.

Physics

53000

Grade Level: 10th - 12th

Prerequisite: Biology

This course presents students with an overview of the fundamental principles of Physics. The course examines the physical world around us and how it works. Major topics include mechanics, thermodynamics, electricity, electromagnetism, sound and light. The course leans more toward the quantitative analysis to show mathematical relationships between variables of the equations. This course is designed to be a hands-on approach with emphasis on practical application on the concepts and theories. Laboratory experiments are an integral part of the course.

Honors Physics

53020

Grade Level: 10th - 12th

Prerequisite: Science: B in Honors Biology or A in Biology and/or B in Honors Chemistry, or A in Chemistry

Math: Honors or Accelerated Math

Departmental approval is necessary in all cases.

Honors Physics is a full-year foundations class designed to prepare students for more advanced work in physics. The course content centers around the basic core topics in physics, including but not limited to kinematics, Newton's Laws, sound, light, electricity, and magnetism. Each topic is accompanied by a lab exercise(s) and demonstration(s) meant to exhibit and reinforce the math and concepts covered. Both the class content and lab work require strong algebra skills and some trigonometry. The goal of the combination of class and lab is to foster the necessary analytical skills required at this level as well as permitting advancement in the subject.

AP Biology

51070

Grade Level: 10th - 12th

Prerequisite: Science: B+ in Honors Biology or A- in Biology and B in Honors Chemistry or B+ in Chemistry; Rising 10th graders must have A in Honors Biology and take Honors Chemistry concurrently.

Departmental approval is necessary in all cases.

This is a rigorous survey course covering major biological topics, including biochemistry, cell biology, genetics, molecular biology, animals and evolution. Emphasis is placed on thematic relationships between the major topic areas. Sophisticated, college-level laboratory experiences are an integral part of the course. This course prepares students for the AP Biology exam taken in May.

AP Chemistry

52070

Grade Level: 11th - 12th

Prerequisite: Science: B+ in Honors Chemistry

Math: B in Honors Algebra II, or B+ in Accel. Algebra II or A- in Algebra II, or B+ in any level Pre-Calc

Departmental approval is necessary in all cases.

This intensive college level course pursues in greater depth those topics studied in first year chemistry. In addition, quantitative analysis is included as a significant segment of the full year laboratory program. This course prepares students for the AP Chemistry exam taken in May.

AP Environmental Science

58178

Grade Level: 10th - 12th

Prerequisite: Science: B in Honors Biology or B+ in Biology and B in Honors Chemistry or B+ in Chemistry, or Honors Chemistry concurrently

Departmental approval is necessary in all cases.

This AP course is designed to give college level treatment to the understanding of interrelationships within the natural world, to identify and analyze environmental problems and their relative risks, and to examine potential solutions. Topics include: ecosystem structure and function, population dynamics, renewable and nonrenewable resources, and air, water, and soil pollution. The course is designed to prepare for the AP Environmental Studies exam.

AP Physics 1

58171

Grade Level: 11th - 12th

Prerequisite: Science: B+ in Honors Chemistry, or A in Chemistry

Math: B in Honors Algebra II, or B+ in Accel. Algebra II, or A- in Algebra II, or B+ in any level Pre-Calc

Departmental approval is necessary in all cases.

AP Physics 1 is an algebra-based, full-year physics course and is the equivalent of a first-semester college course in algebra-based physics. The course is organized around seven foundational big ideas in physics: Newtonian mechanics (including rotational dynamics and angular momentum), work, energy, and power, and mechanical waves and sound. It will also introduce electric circuits. The ability to develop and use physics knowledge by applying it to the practice of scientific inquiry and reasoning through increased experimentation and analysis is the core of this course. It will be an engaging and rigorous experience.

AP Physics 2

58172

Grade Level: 11th - 12th

Prerequisite: Science: B in AP Physics 1

Math : B in Honors Algebra II, or B+ in Accel. Algebra II, or A- in Algebra II, or B+ in any level Pre-Calc

Departmental approval is necessary in all cases.

AP Physics 2 is an algebra-based, full-year physics course and is the equivalent of a second-semester college course in algebra-based physics. This class should be taken as a second-year course by students who have already completed AP Physics 1. The course is organized around seven foundational big ideas in physics and covers fluid mechanics, thermodynamics, electricity and magnetism, optics, and atomic and nuclear physics. As with AP Physics 1, the ability to develop and use physics knowledge by applying it to the practice of scientific inquiry and reasoning through increased experimentation and analysis is the core of this course. It is another challenging, lab-based physics class for those students who enjoy the study of physics.

AP Physics C

58170

Grade Level: 11th - 12th

Prerequisite: Science: A- in Honors Physics or B AP Physics 1

Math: B in A.P. Calculus or AP Calculus concurrently

Departmental approval is necessary in all cases.

This is actually two one-semester courses, culminating in a separate AP exam for each at the end of the year: Mechanics, and Electricity and Magnetism. Both semesters employ introductory calculus in problem solving and are designed to build on and expand on some of the topics covered in Honors Physics. Topics in Mechanics include kinematics, conservation of energy, rotational dynamics, and angular momentum. Second semester topics include electric fields, Gauss's Law, electric potentials, magnetism and electromagnetic induction. Upon completion of the course, students will be prepared for both AP Physics C exams as well as having the foundations for engineering in college.

AP Psychology

38867

Grade Level: 12th only

Prerequisite: Departmental approval (see APPS)

This course is a standard college introductory psychology course, and it prepares the student for the AP Psychology examination in May. Topics include perception, learning, child development, personality, and group behavior. The course features much lab work, a range of computer simulations, and a chance for students to design and perform their own psychological experiments. A strong background in biology and/ or human physiology is highly recommended--many of the concepts covered in this course resemble those seen in high-level biology classes.

Honors Research Seminar - Greenwich Academy

56037

Grade Level: 11th - 12th

Prerequisite: Departmental approval is necessary in all cases.

The objective of this course is to train students in designing and executing a research project. The classroom is actually a research lab, and the class is a research group. The focus of the research is the isolation and initial characterization of soil microbes that exhibit antimicrobial properties. We have partnered with The Small World Initiative/Tiny Earth, organizations that are focused on the search for new antibiotics through the methods we will use in this course. Each student will be the director of their individual project while at the same time contributing to the understanding and work of the entire group. Students will be assessed on their understanding of the project, their work related to the broader goal, as well as the underlying microbiology concepts and techniques they are performing.

Honors Science Research - Brunswick School

59100

Grade Level: 10th and 11th (10th graders must take concurrently with a core science course)

Prerequisite: Science: A- in Biology

Departmental approval is necessary in all cases.

This course is designed to expose students to a variety of laboratory techniques, as well as teach students how to conduct scientific research. Over the course of two years students will investigate and experiment with lab techniques used in various science disciplines using both traditional and state-of-the-art protocols. Students will also be taught the process of research by exploring topics of interest, designing an original project, completing that project with an accompanying paper, and submitting that project to a scientific competition. Student work will be published in Brunswick's Journal of Scientific Research. It is expected/required that each student enrolled in the class will also participate in summer science work as an intern, a scholar/participant in a reputable college summer science program, or attend a two-week, field-research trip with the class. Summer placement is instructor-assisted and individualized based on student commitments.

FALL SEMESTER COURSES

Abnormal Psychology (f)

38478

Grade Level: 11th - 12th

Prerequisite: None

This elective explores one of the most interesting and important topics in psychology – mental illness. The purpose of this course is to provide an introduction to mental disorders in adolescent and adult humans. By examining case studies through the lens of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), students will explore what it means to be “abnormal” and become familiar with a variety of mental conditions, including depression, anxiety, bipolar, obsessive-compulsive, psychotic and trauma-related disorders. Focus will be on symptoms, epidemiology, etiology (cause for disorder at the cellular level), and treatment options. Students are encouraged to think analytically as a clinical psychologist or psychiatrist would and challenge their pre-existing beliefs regarding abnormal behaviors and personalities. Through classroom discussions and coursework, students will gain an appreciation for the challenges of those experiencing mental illness. The course will also promote a greater awareness and knowledge of psychopathology in hopes that we can reduce the suffering and stigma associated with mental disorders.

Biology of Human Health (f)

58036

Grade Level: 10th – 12th (10th graders must take concurrently with core science course)

Placement preference will be given to rising Juniors and Seniors.

Prerequisite: Science: Biology

What are opioids, how do they affect the body, and what are we doing, as a society, about the current opioid epidemic? How does your immune system protect you from various bacterial and viral infections? How do antibiotics and vaccines aid your body’s fight against these pathogens? Should vaccines be mandated by the government? Biology of Human Health will investigate these modern health issues in addition to discussing the science behind cancer, neurological disorders, and the current research being done to help understand and fight these diseases. Coursework includes case studies, research presentations, laboratory exercises, and debates.

Engineering and Robotics I (f)

58039

Grade Level: 11th - 12th

Prerequisite: Science: Two years of science

This course will introduce students to the practical application of science through the completion of various engineering-build projects. Student will improve critical thinking skills through project-based challenges while learning about basic engineering disciplines and various software programs, and by utilizing the fabrication machines and tools within the engineering shop. Students will be required to work in groups and demonstrate strong teamwork and communication skills. This course will allow students to be creative and innovative while applying math and science concepts to solve specific challenges.

Food Science (f)

56032

Grade Level: 11th - 12th

Prerequisite: Science: B in Honors Chemistry or A in Chemistry

Departmental approval required in all cases

This semester course is designed to study the chemistry of molecules that are the basis for life, and what makes up the food we eat. Have you ever wondered what artificial sweeteners such as aspartame or sucralose are? What is the meaning of modified starch, and how is it that Easy Mac can be prepared so fast just by microwaving? The course work encompasses both classroom and laboratory components, some of which are going to be edible! Topics include the structures and metabolism of carbohydrates, lipids, and proteins.

Genetics (f)

56040

Grade Level: 10th – 12th (10th graders must take concurrently with core science course)

Placement preference will be given to rising Juniors and Seniors.

Prerequisite: Science: B in Biology and two years of science (second year can be concurrent)

How can modern techniques be used to diagnose and treat human genetic diseases? What are the bioethical implications of personal genetics? This semester-long, project-based course will explore the cause and effect of human diseases with known genetic influences. It will use case studies and different disease models to investigate the topics of classical genetics, DNA, and protein structure and function. In the lab, students will utilize current methods for diagnosing and treating genetic diseases, especially ones with no known cures.

Human Physiology I (f)

58030

Grade Level: 11th - 12th

Prerequisite: Science: B in Biology

The overall theme of this course is the human body, its organization, and its physiology. This course is designed as a further study of biology and biochemistry for those students wishing to expand their biological experience and who are possibly considering a pre-medical course of study in college. Beginning with a re-introduction to the body, a navigation of the basic biochemistry of cells and tissues is undertaken to lay a foundation for studying the various systems of the body individually. Systems to be studied include the integumentary, musculoskeletal, nervous (including special senses) and cardiovascular. This is a laboratory course with experiments and experiences using students themselves as laboratories in addition to dissection opportunities.

Impact of Technology: An Economic Perspective (f)

38412

Grade Level: 11th - 12th

Prerequisite: None

*This course is offered jointly through the history and arts departments.

Technology advances drive commercial growth in the global economy. This course begins with a brief historical review of how major technological advances have impacted our economy. Examples include the transistor/microprocessor, the telephone and the airplane. Each student will explore the economic impact of one of these advances in depth.

A substantial majority of the course looks to the future. Many potential technology advances are likely to have a disruptive impact on our current economic situation. Our objective is to engage students in thinking about the future – and explore how these technologies will influence growth. Students will select a technology of focus, research its potential impact, and present their findings to the class.

Marine Biology (f)

58038

Grade Level: 10th – 12th (10th graders must take concurrently with core science course)

Placement preference will be given to rising Juniors and Seniors.

Prerequisite: Science: B in Biology and two years of science (second year can be concurrent)

This one semester course provides an introduction to oceanography and marine biology. During the first part of the course students will investigate oceanography including units on marine research, the sea floor, chemical and physical properties of seawater, and the world's oceans. During the second part of the course students will learn about marine organisms including prokaryotes, those that photosynthesize, multicellular invertebrates, and a brief survey of marine vertebrates. Evolution and marine ecology will be emphasized in each unit. Students will be assessed on content, varied lab experiences, and a major presentation. Sophomores are able to register for this course, but must take chemistry or honors chemistry concurrently.

Sport Psychology (f)

38479

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course)

Prerequisite: None

This course will serve as an introduction to the field of sport psychology. It is designed to provide students with a basic understanding of the theories and concepts involved in the psychology of sport, while also looking at some of the past and current research.

Sport Psychology is a field of study in which the principles of psychology are applied in a sport setting, and are often utilized to enhance athletes' individual and team performance. Some of the concepts that will be covered in this course include achievement motivation, goal-setting, attentional focus, imagery and visualization techniques, self-confidence, leadership in sport, team cohesion and group dynamics, and other related topics such as coping with stress in sport, addictive behaviours, and burnout. The field of sport psychology is still continuing to evolve, so although this course will not cover everything, it will lay a solid foundation for those interested in the course material.

SPRING SEMESTER COURSES

Abnormal Psychology (s)

38480

Grade Level: 11th - 12th

Prerequisite: None

This elective explores one of the most interesting and important topics in psychology – mental illness. The purpose of this course is to provide an introduction to mental disorders in adolescent and adult humans. By examining case studies through the lens of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), students will explore what it means to be “abnormal” and become familiar with a variety of mental conditions, including depression, anxiety, bipolar, obsessive-compulsive, psychotic and trauma-related disorders. Focus will be on symptoms, epidemiology, etiology (cause for disorder at the cellular level), and treatment options. Students are encouraged to think analytically as a clinical psychologist or psychiatrist would and challenge their pre-existing beliefs regarding abnormal behaviors and personalities. Through classroom discussions and coursework, students will gain an appreciation for the challenges of those experiencing mental illness. The course will also promote a greater awareness and knowledge of psychopathology in hopes that we can reduce the suffering and stigma associated with mental disorders.

Astrophysics (s)

58173

Grade Level: 10th – 12th (10th graders must take concurrently with core science course)

Placement preference will be given to rising Juniors and Seniors.

Prerequisite: Math: Algebra II prior or concurrently

This course will dive into current topics in cosmology while using physics as a background. All of the necessary physics will be taught within the course, and will not require math beyond algebra II. Topics will include the nature of light and gravity, and how those topics link to most everything we know about our universe. We will discuss stellar formation, energy generation, and lifecycles. We will introduce relativity and other more modern topics in astronomy including (but not limited to) dark matter and energy, the physics of the big bang, and extrasolar planets. We will also spend time learning the nuts and bolts of observational astronomy.

Cognitive Psychology (s)

38477

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)

Prerequisite: B in Biology

How do we remember things? What is intelligence? How do we learn? How do we get smarter? We go to school to learn about a variety of subjects, from the humanities to the sciences. This course takes a step back and investigates how all this learning occurs. To understand how knowledge is shared and developed in the classroom, we will look at how our minds interpret and make sense of what we hear and what we see. In addition, we will investigate the importance of social interaction to learning. Students will participate in web-based cognition experiments and discussion blogs, create and carry out their own psychological experiments with informed and willing participants, and develop a final research project relevant to the course topics. Finally, this course covers many of the same topics as AP psychology and provides for a great conceptual foundation before taking that course.

Engineering and Robotics II (s)

58040

Grade Level: 11th - 12th

Prerequisite: Two years of science

This course will introduce students to the practical application of science through the completion of various engineering-build projects. Student will improve critical thinking skills through project-based challenges while learning about basic engineering disciplines and various software programs, and by utilizing the fabrication machines and tools within the engineering shop. Students will be required to work in groups and demonstrate strong teamwork and communication skills. This course will allow students to be creative and innovative while applying math and science concepts to solve specific challenges.

Environmental Science and Sustainability (s)

58042

Grade Level: 10th-12th (10th graders must take concurrently with a lab course)

Prerequisite: Biology (current or past APES students are not eligible for this course, but APES is potentially an option after the completion of this course)

This course (modeled after an academic major at Cornell University) seeks to advance students' ability to understand and address real world environmental problems, manage social ecological systems in a sustainable manner, and affect decisions involving environmental policy, resource management, and biodiversity conservation. Although categorized as an environmental science, this course delivers an interdisciplinary and integrated experience that provides both breadth and depth about the causes, consequences, and management or remediation of environmental problems ranging from local to global. Although challenging, the curriculum leaves students flexibility to pursue greater depth in specific areas of environmental science and sustainability, and to expand their knowledge outside of a core curricular course.

Forensic Science & Investigation (s)

58033

Grade Level: 10th – 12th (10th graders must take concurrently with core science course)

Placement preference will be given to rising Juniors and Seniors.

Prerequisite: Science: Biology

Beginning with a historical look at the development of forensics and modern techniques, we will learn the basis for forensic study and tools as well as utilizing the methods ourselves in laboratory investigations. Topics that we will cover include, but are not limited to, fingerprinting, blood analysis, direct and microscopic investigation of crime scenes, DNA collection and analysis, ballistics and toxicology. Famous cases and famous forensic investigators are studied as a backdrop for learning the scientific steps beyond modern forensic advancements.

Human Physiology II (s)

58031

Grade Level: 11th - 12th

Prerequisite: Science: B in Biology

Human Physiology I is NOT a prerequisite for this course.

The overall theme of this course is the human body, its organization, and its physiology. This course is designed as a further study of biology and biochemistry for those students wishing to expand their biological experience and who are possibly considering a pre-medical course of study in college. Beginning with a re-introduction to the body, a navigation of the basic biochemistry of cells and tissues is undertaken to lay a foundation for studying the various systems of the body individually. Systems to be studied include the respiratory, urinary, digestion, immune and endocrine. This is a laboratory course with experiments and experiences using students themselves as laboratories in addition to dissection opportunities.

Infectious Diseases (s)

58043

Grade Level: 11th - 12th

Prerequisite: Science: Biology and Chemistry

Not so long ago, it was almost guaranteed that you would die of an infectious disease. In fact, about 150 years ago, your chances of dying of one before you started kindergarten would have been extremely high. Since then, science has come a long way in understanding these diseases - what they are, how they spread, and how they can be prevented. Infectious diseases are a constant threat to public health with teams of specialists dedicated to controlling them. In addition, the bugs responsible for these diseases are evolving. Antibiotics, our most influential weapon against bacterial infections, are decreasing in power because the bacteria are becoming resistant.

In this course, we'll explore the major infectious diseases, such as Influenza, Tuberculosis, Zika, SARS, Ebola, HIV/AIDS and others, by focusing on the biology, epidemiology and control of them. It will present the necessary skills to analyze the connections between human host, pathogen, and environment - how diseases can spread from you to your friends to your friends' friends, and so on. We will touch upon bioterrorism, vaccinations and the comebacks of childhood diseases like measles and whooping cough, once considered almost eradicated. Coursework will include participation on the class discussion board while completing interactive, project and research-based assessments.

Organic Chemistry (s)

56033

Grade Level: 11th - 12th

Prerequisite: Science: B in Honors Chemistry or A in Chemistry

Departmental approval is necessary in all cases.

This semester course is centered on the study of the chemistry of carbon and its compounds through a varied approach using problem-solving skills and laboratory experiments. Emphasis will be on the application of principles governing the reactions of carbon compounds. Topics will include bonding, isomerism, hydrocarbons' structures and reactions, and the derivatives of hydrocarbons.

WORLD LANGUAGES

In the modern language classroom emphasis is placed on developing communication skills and cultural competence. In accordance with national standards, all classes are conducted primarily in the target language; use of English is kept to a minimum. Students learn to interact linguistically and culturally with native speakers at the highest level of proficiency. Additionally, we provide our students with a strong foundation so that they can pursue their study of language in college and beyond.

Students learn to listen, speak, read, and write by exploring thematic units and interacting with authentic materials. Multi-media resources are used frequently in the classroom throughout the program to strengthen students' language skills, to provide them with practical experiences, and to promote cultural understanding. Classes are intended to provide optimal learning experiences for all students.

Upon completion of Level III or III honors as required at GA or three years of Upper School study as required at BWK, students are encouraged to pursue their language studies through more advanced courses. Students may elect to study more than one language on either campus. Students who wish to advance to an honors-level course must earn an A at end of year, have the recommendation of the teacher, and complete summer work with the approval of the department. The department makes the final decision about the placement of students.

Brunswick School and Greenwich Academy sponsor a variety of study abroad options, which give students the opportunity to discover new cultures and, in most cases, speak the foreign language they study in full immersion with homestay programs. The Brunswick Summer School is also an option for those wishing to gauge their interest in a new language. Please consult the schools' websites for more information on these exciting educational opportunities.

Advanced Placement

Advanced Placement classes in the modern languages are highly demanding. Admission to these courses is dependent upon approval of both the Greenwich Academy and Brunswick Language Departments.

Minimum grade requirements are as follows:

Current Level IV Honors students, maintaining at least a B+, may proceed to the AP level.

Students enrolled in Level III Honors, maintaining grades of at least A or above, may petition to enter the AP language course by completing an application and sitting for a formal assessment, which is administered in the spring.

For these students, a committee evaluates these forms, analyzing both their quantitative and qualitative merits. The criteria for acceptance include the following: the recommendation of the student's most recent language teacher and their language grades over the past two years. The student's total academic and co-curricular commitments will also be taken into consideration. The final decision to admit is contingent upon continued success in the student's current language course. Department chairs communicate with the students at the end of the process. Some summer work may be required.

ARABIC

Arabic I

49100

Grade Level: 9th - 11th

Prerequisite: None

This beginning course is an introduction to Modern Standard Arabic, using a curriculum based on Al-Kitaab series. Students learn the fundamentals of Arabic such as the alphabet, handwriting, and correct pronunciation of Arabic letters. Students become familiar and comfortable with the sounds and the structure of the language and later are introduced to the ancient art of Arabic calligraphy. A variety of activities are used to develop the four language skills: listening, speaking, reading and writing. Cultural aspects are presented through authentic materials such as articles, videos and Internet materials.

Arabic II

49200

Prerequisite: Arabic I and departmental approval

Students in this course continue to develop their foundational skills in Modern Standard Arabic. More complex aspects of the language are introduced by developing listening and reading comprehension and building oral proficiency skills. In addition to using the textbook, students are introduced to a variety of Arabic language resources such as videos, radio programs, newspapers, and Internet sites allowing for greater cultural understanding of the different aspects of the Arab world.

Arabic II Honors

49201

Prerequisite: Minimum grade of A- in Arabic I and departmental approval

This fast paced course continues to develop the students foundational skills in Modern Standard Arabic. While studying topics related to daily life communicative skills, students progress in their oral and written proficiency. They experience real-life situations through interdisciplinary and cross-cultural classes with distinct schools in the U. S. and abroad. Units on Arabic culture, as well as additional audio and video clips in modern standard Arabic and colloquial, are incorporated in the lessons to help students develop a broader insight into the region and an appreciation for their study of the Arabic language.

Arabic III

49300

Prerequisite: Arabic II and departmental approval

This course expands the students' foundation of the Arabic language and culture as they continue to develop their oral proficiency and reading/listening comprehension. Students apply more complicated language structures in Modern Standard Arabic to a variety of topics related to a real-life situation, and develop their ability to write in Arabic with an introduction to modern and classic Arabic poetry. Students also gain a deeper understanding of the world around them by using social, environmental, and historical issues to further their Arabic language and culture studies.

Arabic III Honors

49301

Prerequisite: Minimum grade of B+ in Arabic II Honors and departmental approval

Students continue to develop and refine their proficiency in all four language skills, with an emphasis on developing fluency in speaking and in writing. Students apply new complex language structures in Modern Standard Arabic to a variety of topics related to a real-life situation, and develop the ability to move from concrete to abstract concepts. At this level, students comprehend the main ideas of authentic materials that they read and listen to, while also identifying salient details. Students learn a deeper understanding of the world around them, using social, environmental, economic and historical issues to further their Arabic language and culture studies.

Arabic IV

49400

Prerequisite: Arabic III and departmental approval

Students continue to develop and refine their proficiency in all four language skills, with an emphasis on developing fluency in speaking and in writing. Students apply new complex language structures in Modern Standard Arabic to a variety of topics related to a real-life situation, and develop the ability to move from concrete to abstract concepts. At this level, students comprehend the main ideas of authentic materials that they read and listen to, while also identifying salient details. Students learn a deeper understanding of the world around them, using social, environmental, economic and historical issues to further their Arabic language and culture studies.

Arabic IV Honors

49401

Prerequisite: Minimum grade of B+ in Arabic III Honors and departmental approval

The aim of this advanced course is to improve students' overall language ability in Arabic while honing on their critical thinking skills. Students solidify their knowledge of spoken and written Arabic, both in colloquial and Modern Standard Arabic through interactive lessons with distinct schools in the U.S. and abroad. They compare and contrast problems and solutions to issues in the Arab world versus their own surroundings and they engage in the three modes of communication (interpretative, interpersonal, and presentational) to develop cultural competencies through hands-on theme-based instruction. The students continue to improve their language proficiency while enhancing their understanding of the cultural nuances as well as current socio-economic, scientific and environmental issues. The curriculum covered in this class prepares students to enter the NEWL Arabic Language and Culture class.

NEWL Arabic Language and Culture

49420

Prerequisite: Minimum grade of B+ in Arabic IV Honors and departmental approval
(See Advanced Placement Prerequisite Statement at the beginning of the World Languages section)

The NEWL Arabic Language and Culture course conforms to the standards and expectations of an intermediate mid to high university Arabic language course. It is designed to provide students with ongoing and varied opportunities to further develop their proficiency skills for active communication within the cultural framework of the Arabic language and the many cultures that speak it. This course uses authentic texts to develop vocabulary and grammar and to introduce them to frequently used colloquial language. This proficiency-based exam is designed to assess students' skill in the Arabic language deemed critical by government and business in the 21st century. Students enrolled in this course take the NEWL exam which is targeted for traditional foreign language learners and heritage learners. The NEWL exam produces AP style score reports and students can use it to apply for college credit and/or placement. This examination is administered in the spring.

CHINESE

Chinese I

47100

Grade Level: 9th - 11th

Prerequisite: None

This course is an introduction to Chinese language and culture. Students learn proper pronunciation and tones, the foundation of spoken Mandarin, and basic strokes, stroke order, radical and phonemes, the foundation of written Chinese. Vocabulary, basic sentence patterns and other fundamentals of listening, speaking, reading, and writing are all taught within the context of practical communication, using primarily simplified Chinese characters; the pinyin Romanization tool is also taught and employed as an aid to developing speaking and reading skills. Students learn to write approximately 250 words and to read an additional 250 characters by the end of the year. This course is designed for students with no previous background in Chinese.

Chinese II

47200

Prerequisite: Chinese I and departmental approval

This course aims at further developing the skills that were established in Chinese I. Basic material is reviewed and expanded upon, enabling students to advance their knowledge of Chinese grammar in the cultural context of daily life in China. Speaking and listening skills continue to be stressed, and writing in Chinese characters is now mandatory. Chinese word processing enables students to read and express themselves in writing in Chinese.

Chinese II Honors

47201

Prerequisite: Minimum grade of A- in Chinese I and departmental approval

This rigorous course is for linguistically strong students who are ready and eager to develop their Chinese language skills at an accelerated pace. New grammar and vocabulary are introduced using a wide variety of instructional techniques and material. Speaking, listening, reading and writing skills are solidified as students develop their interpretive, interpersonal, and presentational communication skills. With contemporary Chinese societies serving as a cultural backdrop, reading and writing skills are developed to provide students with insights into the rich diversity of the Chinese-speaking world. As their level of Chinese language sophistication increases, the students produce incrementally more complex projects on the cultures they study.

Chinese III

47300

Prerequisite: Chinese II and departmental approval

This course expands and refines the students' foundation in Chinese language and culture. New grammar, vocabulary and characters are introduced and then extensively practiced in class, using a wide variety of instructional techniques and materials. The continued use of word processing in Chinese provides students with a useful tool to express themselves with greater ease when preparing written assignments. The development of stronger listening and speaking skills remains a priority.

Chinese III Honors

47301

Prerequisite: Minimum grade of B+ in Chinese II Honors and departmental approval

This course gives students the vocabulary and structures they need to enable them to further advance their knowledge of spoken and written Chinese. Students develop reading strategies to comprehend and discuss materials composed in formal written Chinese and develop enough independence in the language to write some guided stories. Authentic resources including newspapers, magazines and television programs are used throughout the course. Deeper insights into Chinese culture are fostered through the use of Chinese films.

Chinese IV

47303

Prerequisite: Chinese III and departmental approval

This course enables students to solidify their foundation as they move forward expanding their knowledge of Chinese language and culture. By working with varied vocabulary and more complex structures students will be able to use the language in more complex situations. The textbook is supplemented with authentic materials, such as newspapers and magazines, to provide a springboard for listening, speaking, reading and writing activities. Insight into Chinese culture, an integral part of the course, is additionally fostered by the use of Chinese films.

Chinese IV Honors

47401

Prerequisite: Minimum grade of B+ in Chinese III honors and departmental approval

In this accelerated course, linguistically strong students are encouraged to hone their reading, writing, word processing, listening and speaking skills in Chinese. Writing assignments involving both writing and typing are given frequently in order to help students communicate constructively and creatively. Previously learned concepts and textbook materials are significantly expanded through introductory expository speaking that begins the process of mastering new grammar patterns and creative ways of describing realistic situations, people, character, locations, etc. Varied aspects of Chinese culture and history are used as topics for reading and class discussion.

Chinese V

47502

Prerequisite: Chinese IV and departmental approval

This course aims at further developing the skills that were established in intermediate Chinese. Students advance their knowledge of Chinese grammar within the cultural context of daily life in China. Emphasis is placed on the spoken language. Students discuss practical, social and cultural topics with the aid of spoken language materials such as Chinese movies, plays, daily news, etc. More conversational strategies and the stylistic features of conversation are explored.

AP Chinese Language and Culture

47602

Prerequisite: Minimum grade of B+ in Chinese IV Honors and department approval
(See Advanced Placement Prerequisite Statement at the beginning of the World Languages section)

This course conforms to the standards and expectations as described in the College Board curriculum for AP Chinese Language and Culture. Its aim is to provide students with ongoing and varied opportunities to further develop their proficiencies across the full range of language skills within a cultural frame of reference reflecting the richness of Chinese language and culture. The course introduces students to frequently used formal and idiomatic expressions as well as popular and colloquial phrases. Students study Chinese poetry and prose, and they experience culture through the study of Chinese history, art, traditions, newspaper articles, and current events. They also prepare essays on a wide range of topics. This course culminates in the Advanced Placement Chinese and Culture Exam given in May, which must be taken by all students enrolled in this class.

AP Chinese Language and Culture - Expedition Course

47603

Prerequisite: Minimum grade of B+ in Chinese IV Honors and department approval
(See Advanced Placement Prerequisite Statement at the beginning of the World Languages section)

This course conforms to the standards and expectations as described in the College Board curriculum for AP Chinese Language and Culture. Its aim is to provide students with ongoing and varied opportunities to further develop their proficiencies across the full range of language skills within a cultural frame of reference reflecting the richness of the Chinese language and culture. The course introduces students to frequently used formal and idiomatic expressions as well as popular colloquial phrases. Students study Chinese poetry and prose, and they experience culture through the study of Chinese history, religion and art. They read newspaper articles and discuss current events, and write on a wide range of topics. This course culminates in the Advanced Placement Chinese and Culture Exam given in May, which must be taken by all students enrolled in the class. A required Expedition will augment this course—financial aid is available for eligible students.

Language and Culture Expedition

(Dates TBD, expedition will take place during the 2020-2021 school year)

As part of the course students will travel to China. During the expedition component of the course students will have many opportunities for real life practice with the language. They also will have many opportunities to gain first hand knowledge of Chinese cultural practices, products and perspectives, especially as related to the AP topics that they will be exploring in this course: global challenges, science and technology, contemporary life in China, personal and public identities, family and communities, and beauty and aesthetics.

FRENCH

French I

44100

Grade Level: 9th - 11th

Prerequisite: None

This course is for those students who wish to begin their study of French in the Upper School. It is designed to provide students with foundational skills in reading, writing, speaking and understanding spoken French. A basal text provides grammar and cultural studies, while reading and writing skills are developed through the use of a variety of documents (poems, surveys, and passages from magazines and newspapers) and media (videos, short clips, and movies).

French II

44201

Prerequisite: French I and departmental approval

Students in this course continue to develop their foundational skills in French. New grammar and vocabulary are presented then extensively practiced in class, using a wide variety of instructional techniques and material. Speaking, listening, reading and writing skills are solidified as students develop their interpretive, interpersonal, and presentational communication skills. Additionally, reading and writing skills are developed in contexts that provide students with insights into the richly varied cultures of the French-speaking world.

French II Honors

44202

Prerequisite: Minimum grade of A- in French I and departmental approval

This rigorous course builds upon the skills established in French I. It is for linguistically strong students who are ready and eager to work at an accelerated pace. New grammar and vocabulary are introduced using a wide variety of instructional techniques and material. Speaking, listening, reading and writing skills are solidified as students develop their interpretive, interpersonal, and presentational communication skills. Additionally, reading and writing skills are developed in contexts that provide students with insights into the rich diversity of the French-speaking world. As their level of French language sophistication increases, the students are asked to produce incrementally more complex projects on the Francophone cultures they study.

French III

44300

Prerequisite: French II and departmental approval

This course expands and refines the students' foundation in French language and Francophone culture. New grammar and vocabulary are introduced then extensively practiced in class, using a wide variety of instructional techniques and material. Speaking, listening, reading and writing skills are solidified as students role play, do group work, prepare oral presentations or work with on-line or local digital resources, and read short stories and/or articles on current events. In addition to the language, students will study customs, traditions and histories of French-speaking nations and regions so that their knowledge of French is embedded in cultural understanding.

French III Honors

44301

Prerequisite: Minimum grade of B+ in French II Honors and departmental approval

This course is designed to begin perfecting the language skills necessary for highly proficient oral and written communication. The finer points of grammar are reviewed, strengthened and clarified. Discussions and compositions, which provide opportunities for self-expression, are based on Francophone current events and literature through a range of possibilities: on-line and local digital resources, newspaper articles, extracts, short stories, and the like. Students develop their listening and speaking skills through the frequent use of recorded activities as well as through a wide variety of class activities. Students further broaden their cultural foundation through Internet projects and exploration.

Exploring French Through Global Engagement

44510

Prerequisite: French III and departmental approval

This student-driven course explores global trends in the francophone world while continuing to develop cultural and communicative competence in French. Authentic materials such as songs, films, video clips, and short stories will provide the basis for vocabulary expansion and class discussions. A key factor to success in this highly interactive course is the student's commitment to full engagement in their learning experience.

French IV Honors

44402

Prerequisite: Minimum grade of B+ in French III Honors and departmental approval

In this pre-AP language course, the finer points of French grammar are reviewed, strengthened and clarified. Students discuss examples of contemporary Francophone cultural and social issues. Discussions and compositions based on current publications provide the students with opportunities for independent self-expression. Students develop their listening skills through the frequent use of taped activities. Students make recordings and do a wide variety of class exercises to improve their speaking ability. Films and on-line or local digital resources enhance listening skills and culture study.

AP French Language & Culture

44607

Prerequisite: Minimum grade of B+ in French IV Honors or A in French III Honors and departmental approval (See Advanced Placement Prerequisite Statement at the beginning of the World Languages section)

The goals of this course conform to the standards and expectations described in the College Board curriculum for Advanced Placement French Language and Culture. Students will be prepared to demonstrate their level of proficiency in French across three communicative modes (interpersonal, interpretive and presentational) and the five goal areas outlined in the *Standards for Foreign Language Learning in the 21st Century* (communication, cultures, connections, comparisons and communities). Films, literature, articles on current issues, and Internet based activities serve as a springboard for discussions, debates, compositions and presentations. Students also endeavor to broaden their active vocabulary and to become comfortable using a variety of tenses and idiomatic expressions both when writing and speaking in a variety of contexts. This course culminates in the Advanced Placement French Language Exam given in May, which must be taken by all students enrolled in this class.

Honors French Seminar

44617

Grade Level: 11th - 12th

Prerequisite: Departmental approval

This discussion-based course is designed as a seminar for students with a high proficiency in French, who want to continue to explore and discuss cultural themes throughout the French-speaking world. This challenging class is conducted in French to further improve fluency and comprehension. Students will work with authentic materials such as current event articles as well as literature, movies, and art that develop the overall understanding of the francophone world. This course is designed to be interactive, with frequent instructor feedback about student presentations, debates, and written responses and provides a venue for students to become life-long learners of French.

ITALIAN

Italian I

42100

Grade Level: 9th - 11th

Prerequisite: None

This course is for those students who wish to begin their study of Italian. Students make use of a complete program, supported by audio, video and computer resources, that enables them to develop a strong foundation in the language and culture of Italy. Meaningful communication and the establishment of a strong grammatical foundation in Italian are the goals of this course. Additionally, reading and writing skills are developed in contexts that provide students with insights into Italian culture.

Italian II

42200

Prerequisite: Italian I and departmental approval

Students in this course continue to develop their foundational skills in Italian. New grammar and vocabulary are presented then extensively practiced in class, using a wide variety of instructional techniques and material. Speaking, listening, reading and writing skills are solidified as students develop their interpretive, interpersonal, and presentational communication skills. Additionally, reading and writing skills are developed in contexts that provide students with insights into the richly varied cultures of the Italian-speaking world.

Italian II Honors

42201

Prerequisite: Minimum grade of A- in Italian I and departmental approval

This rigorous course builds upon Italian I. It is for students who have strong linguistic ability and who are eager to work at a rapid pace. The goal of the program is to develop their communication skills with conversation, role-plays, written assignments, readings and listening comprehension exercises to enable the student to develop strong skills. The relationship between Italian language and culture is integral to the course.

Italian III

42300

Prerequisite: Italian II and departmental approval

This course expands and refines the students' foundation in Italian language and culture. New grammar and vocabulary are introduced then extensively practiced in class, using a wide variety of instructional techniques and material. Speaking, listening, reading and writing skills are solidified as students role-play, do group work, prepare oral presentations using on-line or local digital resources, and read short stories and/or articles on current events. In addition to the language, students will study specific customs, traditions and history of Italy so that their knowledge of Italian is embedded in cultural understanding.

Italian III Honors

42301

Prerequisite: Minimum grade of B+ in Italian II Honors and departmental approval

This course is designed to begin perfecting the language skills necessary for highly proficient oral and written communication. The finer points of grammar are reviewed, strengthened and clarified. Discussions and compositions, which provide opportunities for self-expression, are based on Italian current events and literature through a range of possibilities: on-line and local digital resources newspaper articles, extracts, short stories, and the like. Students develop their listening and speaking skills through the frequent use of taped and recorded activities as well as through a wide variety of class activities. Students further broaden their cultural foundation through Internet projects and exploration.

Italian IV: Language & Culture

42400

Prerequisite: Italian III and departmental approval

This is a conversation and culture course. Communication skills are developed via the exploration of the rich Italian culture. Films, on-line and local digital resources, short stories and other documents all provide the basis for vocabulary expansion and class discussions. The core curriculum concerning grammar review and expansion is augmented by a wide variety of topics relevant to Italy - past and present. A key factor to success in this highly interactive course is the student's commitment to active participation in all class activities.

Italian IV Honors

42401

Prerequisite: Minimum grade of B+ in Italian III Honors and departmental approval

In this advanced language course, the finer points of Italian grammar are reviewed, strengthened and clarified. Students discuss contemporary cultural and social issues in Italy basing that work on current publications and media. Students develop their listening skills through the frequent use of taped activities. Students make recordings and do a wide variety of class exercises to improve their speaking ability. Films, on-line and local digital resources enhance listening skills and culture study.

AP Italian Language & Culture

42500

Prerequisite: Minimum grade of B+ in Italian IV Honors or A in Italian III Honors and departmental approval (See Advanced Placement Prerequisite Statement at the beginning of the World Languages section)

The goals of this course conform to the standards and expectations described in the College Board curriculum for AP Italian Language and Culture. Students will be prepared to demonstrate their level of Italian proficiency across three communicative modes (interpersonal, interpretive and presentational) and the five goal areas outlined in the *Standards for Foreign Language Learning in the 21st Century* (communication, cultures, connections, comparisons and communities). Films, literature, articles on current issues, and Internet based activities serve as a springboard for discussions, debates, compositions and presentations. Students also endeavor to broaden their active vocabulary and to become comfortable using a variety of tenses and idiomatic expressions both when writing and speaking in a variety of contexts. This course culminates in the Advanced Placement Italian Language and Culture Exam given in May, which must be taken by all students enrolled in this class.

SPANISH

Foundations of Spanish

43150

Grade Level: 9th

Prerequisite: Limited or no previous exposure to Spanish and departmental approval

This course is designed for 9th grade students who have not studied Spanish previously or have little exposure to Spanish. Instruction is focused on providing, with reliable reinforcement, the basics of the language as well as its grammar and vocabulary foundations for success in future Spanish courses. Students will be exposed, at an appropriate pace, to all four skills (listening, speaking, reading and writing) and to cultural concepts of the Spanish-speaking world. In addition to developing their understanding of the basic grammatical structures, students will develop the necessary skills to ensure communication at a novice level, according to national standards (ACTFL). Students successful in this course will go on to take Spanish I, followed by Spanish II, in their language requirement sequence. They will not be eligible to study in an Honors class after the Foundations class.

Spanish I

43100

Grade Level: 9th - 11th

Prerequisite: None

This course is for those students who wish to begin their study of Spanish in the Upper School. Students make use of multi-media resources, as well as the textbook, to explore general cultural themes to learn basic grammar and vocabulary. These first steps in the Spanish language are supported by a variety of written and oral-aural exercises. Meaningful communication is the natural goal of the course, with strong emphasis on the mastery of basic grammar needed to progress in the language. Reading and writing are developed in contexts that provide students with insights into the cultures of the Spanish-speaking world.

Spanish II

43200

Prerequisite: Spanish I and departmental approval

Students in this course continue to develop their foundational skills in Spanish. New grammar and vocabulary are introduced then extensively practiced in class, using a wide variety of instructional techniques and material. Speaking, listening, reading and writing skills are solidified as students develop their interpretive, interpersonal, and presentational communication skills. Additionally, thematic lessons provide students with insights into the cultural richness of the Hispanic world.

Spanish II Honors

43201

Prerequisite: Minimum grade of A- in Spanish I and departmental approval

This rigorous course builds upon the skills established in Spanish I. It is for linguistically strong students who are ready and eager to work at an accelerated pace. The program continues to introduce new grammar and vocabulary through a wide variety of instructional techniques and material. Speaking, listening, reading and writing skills are solidified as students develop their interpretive, interpersonal, and presentational communication skills. Additionally, thematic lessons provide students with insights into the rich cultural tapestry of the Spanish-speaking world. As their level of Spanish language sophistication increases, the students are asked to produce incrementally more complex projects on the cultures they study.

Spanish III

43300

Prerequisite: Spanish II and departmental approval

This course expands and refines the students' foundation in Spanish language and Hispanic culture. The first quarter is a review of material studied in the first two years. New grammar and vocabulary are introduced thematically then extensively practiced in class, using a wide variety of instructional techniques and material. Speaking, listening, reading and writing skills are solidified as students develop their interpretive, interpersonal, and presentational communication skills. Additionally, thematic lessons help students to explore the written language through level-appropriate literary selections and newspaper articles. In addition to the language, students will study customs, traditions, and histories of Spanish-speaking nations and regions so that their knowledge of Spanish is embedded in cultural understanding.

Spanish III Honors

43301

Prerequisite: Minimum grade of B+ in Spanish II Honors and departmental approval

This course is designed to begin perfecting the language skills necessary for highly proficient oral and written communication through the exploration of cultural themes. The finer points of grammar are reviewed, strengthened and clarified. Discussions and compositions, which provide opportunities for self-expression, are based on current events, short films, and literature from the Hispanic world through sources such as on-line and local digital resources, newspaper articles, extracts, and short stories. Students develop their listening and speaking skills through the frequent use of multi-media sources as well as through a wide variety of class activities. Students further broaden their cultural foundation through Internet projects and exploration.

Spanish IV

43401

Prerequisite: Spanish III and departmental approval

This is a conversation and culture course. Earlier language skills are reviewed and expanded with renewed emphasis on broad cultural themes within the Spanish-speaking world. Films, Podcasts, research on the Internet, short stories and other documents all provide the basis for vocabulary expansion and class discussions. The core curriculum concerning grammar review and expansion is augmented by a wide variety of topics relevant to the Spanish-speaking world. A key factor to success in this highly interactive course is the student's commitment to active participation in all class activities.

Spanish IV Honors

43402

Prerequisite: Minimum grade of B+ in Spanish III Honors and departmental approval

In this Pre-AP course, students are encouraged to delve into issues such as science, politics, contemporary life, and history. In addition, they examine how art and literature reflect these themes. Speaking, listening, reading, and writing skills are solidified as students develop their interpretive, interpersonal, and presentational communication skills. We study a range of literary texts as well as film and music. The curriculum covered in this class prepares students to enter either the AP Spanish Language and Culture class or the AP Spanish Literature class.

AP Spanish Language & Culture

43507

Prerequisite: Minimum grade of B+ in Spanish IV Honors or A in Spanish III Honors and departmental approval (See Advanced Placement Prerequisite Statement at the beginning of the World Languages section)

The goals of this course conform to the standards and expectations described in the College Board curriculum for AP Spanish Language and Culture. Students will be prepared to demonstrate their level of proficiency in Spanish across three communicative modes (interpersonal, interpretive and presentational) and the five goal areas outlined in the *Standards for Foreign Language Learning in the 21st Century* (communication, cultures, connections, comparisons and communities). Films, literature, articles on current issues, and Internet based activities serve as a springboard for discussions, debates, compositions and presentations. Students also endeavor to broaden their active vocabulary and to become comfortable using a variety of tenses and idiomatic expressions both when writing and speaking in a variety of contexts. This course culminates in the Advanced Placement Spanish Language Exam given in May, which must be taken by all students enrolled in this class.

AP Spanish Literature & Culture

43517

Prerequisite: Minimum grade of B+ in Spanish IV Honors or A.P. Spanish Language and departmental approval (See Advanced Placement Prerequisite Statement at the beginning of the World Languages section)

Following the prescribed Advanced Placement syllabus, this course offers the advanced Spanish student a remarkable overview of Spanish and Hispanic literature from medieval times through present day. The list of approximately 40 works from more than 35 authors, containing poems, plays, short stories and novels, is demanding. Students are required to participate in active class discussions as well as write frequent essays in literary analysis, comparisons between literature and art or music, and cultural connections between the history of the Hispanic world and its interpretations in literature. Students in this course are required to take the AP Spanish Literature and Culture Exam given in the spring.

FALL SEMESTER COURSES

Español en vivo—Spanish in the Community (f)

43505

Grade Level: 10th - 12th

Prerequisite: Spanish III, Spanish IIIH or above. Heritage speakers may take this course with departmental approval.

Take advantage of this opportunity to show how relevant your study of Spanish truly is! This community-based class takes you out of the classroom and into the Spanish speaking community. This course emphasizes independent and group work, conversation, journal writing, language skill building, and community outreach through local agencies. Every student is required to attend 3-4 community outings and one service project. Preparation for and visits to different agencies takes place during class time and helps to develop your communication skills.

Spanish Language and Culture through the Performing Arts (f)

43521

Grade Level: 10th - 12th

Prerequisite: Completion of Spanish III, Spanish IIIH or above. Heritage speakers may take this course with the approval of the department chair.

This semester elective is intended to expose the students to Spanish language and culture through the music, theater, visual arts, and the architecture of Spain and Hispano America. This is a hands-on class, based on the active work and projects of students. Class activities range from reading, and even performing, selections of dramatic pieces such as Zorilla's *Don Juan* or Lorca's *La casa de Bernarda Alba*; the recitation of Spanish monologues or poetry; the studying of Hispanic music, including the listening and performing of Spanish musical pieces; the writing of commercials or short scripts and the subsequent filming of the project; and the exploration of Hispanic film, art, and architecture. Students can choose to take this semester elective regardless of whether they are taking any other language class.

SPRING SEMESTER COURSES

Español de negocios—Business Spanish (s)

43506

Grade Level: 10th - 12th

Prerequisite: Completion of Spanish III, Spanish IIIH or above. Heritage speakers may take this course with the approval of the department chair.

This course will familiarize students with the world of finance in the Hispanic world, including a survey of the culture and the basic vocabulary used in business, through hands-on work and projects that look to a direct application of the students' language skills. Themes to be studied include marketing and advertising in the Hispanic world; issues of international leadership; the metric system and foreign exchange; and matters of transportation and foreign travel.

The goal of the course is to enrich students' awareness and understanding of the social and political issues currently confronting Latin-America. With that in mind, the students will do research on various aspects of the economy of the Spanish-speaking world; follow news that pertains to economics and policy; and discuss economic relations between Latin America and the USA.

Hispanos en el Caribe (s)

43520

Grade Level: 10th - 12th

Prerequisite: Completion of Spanish III, Spanish IIIH or above. Heritage speakers may take this course with the approval of the department chair.

Have you ever listened to reggaeton music or eaten “ropa vieja” and wondered where it came from? To what extent has the Caribbean influenced US culture? This course will focus primarily on the history, art and culture of three Caribbean countries - Puerto Rico, Cuba and the Dominican Republic-- and their relationship to the United States. We will begin with colonialism at its roots and bring this concept to the present political status in these three places. A focus of this course looks at how indigenous African, and European influences impact the world of music, literature, food, and politics in the Caribbean world. As part of the semester's study, we have a service trip, which will include a cultural sojourn in the spring to either one of these islands or communities in the US.

CLASSICS

In Levels I through Advanced Placement, the goal is to encourage Latin and Greek students to become involved first-hand with the Classics by acquiring the ability to read standard Latin and Greek authors with competence and appreciation. Understanding of the social and political history of the ancient Romans, along with related topics in Greco-Roman mythology, religion, and literature, is developed. The Classics Department promotes the additional benefits gained from the study of Latin and Greek, such as a sharper insight into the grammar of other languages including English, and the acquisition of English vocabulary.

The Classics program emphasizes a reading approach to the study of the language: students begin reading simple Latin or Greek passages immediately upon starting the first year. Continuous attention to derivatives enables students to develop their vocabulary. Due emphasis on grammar, memorization of forms, and word study equips the students with the necessary tools to understand and appreciate classical literature. As their facility with the syntax and vocabulary of the language increases, they read authentic pieces of Latin or Greek literature of increasing complexity.

LATIN

Latin I

45100

Grade Level: 9th - 11th

Prerequisite: None

This course is a standard introductory course to Latin. The emphasis will be on learning basic forms and grammatical concepts. There will be applications of what is learned in grammar to translation of simple passages from Latin to English. An introduction to Latin composition will round out the course.

Latin II

45200

Prerequisite: Latin I and departmental approval

This course has two primary objectives: first, to solidify the student's foundation of Latin grammar; and second, to build upon it a broader structure for the reading of Latin authors. Advanced grammatical concepts to be introduced in this course include indirect statement and the forms and uses of both participles and the subjunctive. Continued emphasis is placed on the enhancement of sight translation skills and the development of an awareness of the historical context for the language itself. Throughout the year, students will use this knowledge to read adapted passages of Latin prose and poetry.

Latin II Honors

45201

Prerequisite: Minimum grade of A- in Latin I and departmental approval

This rigorous course builds upon the skills established in Latin I. It is for students ready and eager to work at an accelerated pace. New grammar and vocabulary are introduced and solidified as students develop their interpretive and analytical skills in Latin. The spring is devoted to advanced grammar topics and reading in Caesar's Gallic War.

Latin III

45300

Prerequisite: Latin II and departmental approval

This course expands and solidifies the student's understanding of the Latin language through grammar and syntax reviews and by providing the foundation for the students to read a variety of classical authors such as Caesar and Sallust. In addition to discussion of meaning and writing style, students also learn about Roman history and culture. They are encouraged to explore political, philosophical, and ethical issues at play and relate them to issues that face the modern world.

Latin III Honors

45302

Prerequisite: Minimum grade of B+ in Latin II Honors and departmental approval

This rigorous pre-AP Latin course focuses on developing and expanding students' translation skills, using classical Latin authors such as Cicero, Catullus, Ovid, Apuleius, and Horace. In addition to translating, students are introduced to textual, stylistic, and metrical analysis. Discussions of translations always include aspects of Roman culture and history and their influence on the intellectual history of the West. The curriculum of this course prepares students to enter the AP Latin course the following year.

Latin IV

45400

Prerequisite: Latin III and departmental approval

This course is for students who want to continue their study of Latin but who are not ready for the demands, requirements and time schedule of the AP Latin course. The readings will vary from year to year and will include the Classical Tradition as well as the literature of later Latin. The class discussions of the ideas presented in the readings form an integral part of this course, especially as these ideas relate to the humanistic culture of the West. Grammar review of special topics is also included in the course.

AP Latin

45602

Prerequisite: Minimum grade of B+ in Latin III Honors or A in Latin IV and departmental approval

AP Latin is a rigorous course that promotes reading Latin poetry and prose with historical and literary sensitivity. Students are encouraged to develop linguistic skills by engaging in multiple activities, including translating poetry and prose precisely and literally; reading passages of poetry and prose with comprehension; and analyzing literary texts in clear, coherent written arguments, supported by textual examples. The course focuses upon selections from Caesar's *De Bello Gallico* and Vergil's *Aeneid*, but includes other classical authors of prose and poetry.

Honors Latin Studies

45505

Prerequisite: Departmental approval

Honors Latin Studies is a fourth year Latin course for those who have successfully completed an AP Latin course. Readings from several Latin authors will make up the text of the course with a concentration on Classical authors such as Cicero, Catullus and Tacitus while also drawing from medieval and renaissance texts. In addition to tests and exams, seminar presentations and a major paper will be required. Entrance into this course requires the recommendation of the student's AP instructor.

FALL SEMESTER COURSES

Classical Culture and History (f)

45801

Grade Level: 11th - 12th

Prerequisite: For Classical Language credit: Latin 3 or above and departmental approval.

For non-Classical Language students: Departmental approval

This semester-elective is designed to be an interdisciplinary class integrating classical languages and the history of the Greek and Roman civilizations. The first part of a non-sequential series, the course promotes critical thinking and the exploration of universal issues relevant to the Greeks and the Romans. Through readings of literary texts and the analysis of historical events, hands-on projects, and research, students perform a survey of the Greco-Roman cultural, literary, and historical foundations of the Western world. A vast array of topics will be covered, from Homer and the heights of classical Athens to the political and social structure of the Roman Empire.

In particular, this independent semester course will be interesting to rising Seniors who have completed Latin 3H or Latin 4; Juniors and Seniors with no previous study of the Classics, but who are interested in studying the Classics and Classical history; Juniors who have completed Latin 3 and are taking the two electives as a substitute to fulfill their Latin 4 requirement.

Note: For students who have completed Latin 3, and are taking the two electives as a substitute for Latin 4 language requirement, some linguistic instruction and further testing will be required.

War, Literature & Popular Culture: From Homer to the War on Terror (f)

38416

Grade Level: 10th - 12th

Prerequisite: None

Why do Hollywood movies like *Troy*, *300*, or *The Hurt Locker* fascinate contemporary audiences? Why is war a recurring topic in Western literature through the ages—from Homer to contemporary memoirs of American soldiers who served in Iraq and Afghanistan? Why have videogames exploring facets of war, like *Call of Duty*, reached such a high degree of popularity?

This course will explore first the continuity of the phenomenon of war from classical to contemporary times. Second, it will investigate the classical roots of Western culture. (For instance, a discussion of Livy's Second Punic War narrative, Rome's war against Hannibal, explains how the Romans set the basis for the concept of "nation" and "citizenship" that we cherish in the United States.) Finally, it will take a closer look at artistic manifestations of war, namely in literature and film, but also in the popular culture of our 21st century, "globalized" world.

This is an interdisciplinary class involving English, the Classics, and History and will be team-taught by two faculty members. Readings may range from passages in translation of classical authors such as Homer, Herodotus, or Vergil, to 20th century writers like poet Wilfred Owen or novelist Ernest Hemingway. Knowledge of Latin is not a requirement, however, students with a Classics background will be able to integrate translation skills into the course.

SPRING SEMESTER COURSES

Classical Culture and History (s)

45802

Grade Level: 11th - 12th

Prerequisite: For Classical Language credit: Latin 3 or above and departmental approval.

For non-Classical Language students: Departmental approval

This semester-elective is designed as an interdisciplinary class, integrating the classical languages and the history of the Greek and Roman civilizations. The second part of this non-sequential series, the course promotes critical thinking and the exploration of universal issues relevant to the Greeks and the Romans. Through readings of literary texts and the analysis of historical events, hands-on projects, and research, students complete a survey of the Greco-Roman cultural, literary, and historical foundations of the Western world. A vast array of topics will be covered, from Homer and the heights of classical Athens to the political and social structure of the Roman Empire.

In particular, this independent semester course will be interesting to rising Seniors who have completed Latin 3H or Latin 4; Juniors and Seniors with no previous study of the Classics, but who are interested in studying the Classics and Classical history; Juniors who have completed Latin 3 and are taking the two electives as a substitute to fulfill their Latin 4 requirement.

Note: For students who have completed Latin 3, and are taking the two electives as a substitute for Latin 4 language requirement, some linguistic instruction and further testing will be required.

GREEK

Greek I

45700

Prerequisite: Departmental approval

This class is a standard introductory course to classical Greek. It will combine a study of basic Attic grammar and syntax with efforts to gain a reasonable facility in reading Greek prose and in translating from English to Greek. By springtime, students will gradually come to read adapted excerpts from Greek prose (namely Herodotus and Xenophon).

Greek II

45702

Prerequisite: Greek I and departmental approval

This course builds upon the grammatical foundation and basic translation skills learned in Greek I. It will expand the study of basic Attic grammar and syntax. In the fall students will read selections from Herodotus and Xenophon. In the spring students will read selections from Plato's dialogues. Throughout the year students will learn an appreciation for the cultural, moral, and artistic values that distinguish the ancient Greek culture and literature.

Greek II Honors

45704

Prerequisite: Minimum grade of B+- in Greek I and departmental approval

This rigorous course builds upon the grammatical foundation and translation skills learned in Greek I. It will seek to reinforce important and increasingly sophisticated grammatical and syntactical principles. In the fall students will read selections from Xenophon's *Anabasis* and *Memorabilia*. In the spring students will read selections from Plato's *Apology* and *Crito*. Throughout the year students will learn an appreciation for the cultural, moral, and artistic values that distinguish the ancient Greek culture and literature.

Greek III

45703

Prerequisite: Greek II and departmental approval

The third year of the Regular Greek track presupposes an acceptable grasp of all the essentials of Attic morphology, syntax, and vocabulary. Building on this foundation, it takes as its primary author Homer, who stands at the very beginning of western literature. Students will read at least 500 lines of Homer's poetry, and will develop a familiarity with the syntactic and morphological peculiarities of the epic dialect, while at the same time immersing themselves in the culture and philosophy of Homer's heroic world. Time permitting, Greek texts of other periods and genres will be studied, including history, philosophy, drama, and the New Testament.

Greek III Honors

45705

Prerequisite: Minimum grade of B+ in Greek II Honors and departmental approval

The third year of the Honors Greek track presupposes a firm grasp of all the essentials of Attic morphology, syntax, and vocabulary. Building on this foundation, it takes as its primary author Homer, who stands at the very beginning of western literature. Students will read well over 1,000 lines of Homer's poetry, and will develop a strong control over the syntactic and morphological peculiarities of the epic dialect, while at the same time immersing themselves in the culture and philosophy of Homer's heroic world. Time permitting, Greek texts of other periods and genres will be studied, including history, philosophy, drama, and the New Testament.

VISUAL AND PERFORMING ARTS

Participation in the Arts encourages us to react to, record and share our impressions of the world. The goal of the Arts Departments of Brunswick School and Greenwich Academy is to enable students to experience, understand, and enjoy the Visual and Performing Arts, including studio art, dance, music and theater.

The program encourages individual creative expression, the development of specific skills in each area, communication with the public through exhibitions and performances, and appreciation of all art forms. Courses provide recognition of the role of the Arts in history and in the culture of our world.

The departments require of all students a minimum of one year's participation in any of the Arts areas. In addition, students are welcome to participate in a variety of co-curricular dance, music and theater performances, and arts clubs.

VISUAL ARTS

In studio art classes, students are guided to fulfill their individual potential by acquiring and developing skills and techniques in a variety of media, including the resources of new kinds of technology, while solving problems and thinking creatively. They learn to communicate their ideas and emotions in an original, personal style. Aesthetics, art history, art criticism, and contemporary developments are introduced in classes and through field trips, visiting artists, and exhibitions by professionals or by the students themselves.

Art I

61000

Grade Level: 9th

Prerequisite: None

The course emphasizes the fundamentals of fine art techniques including drawing, painting, printmaking, computer graphics, ceramics and sculpture. Important art concepts as composition, perspective, and color theory are introduced. The course challenges each student to think critically and creatively, be original, and to experiment with a variety of materials. Students work from observation, memory, imagination, and personal expression toward styles that express their own vision. They are exposed to historical and contemporary art through visits to museums and galleries, slide presentations, and visits from professional guest artists. A sketchbook for developing designs and a portfolio review are part of the course. Students who have successfully completed this course will be approved for an AP course the following year.

Honors Art II

68400

Grade Level: 10th - 11th

Prerequisite: Art I or departmental approval

This course offers a varied development of broad range art techniques and processes. The course covers all the major disciplines in art which may include drawing, design, painting, computer graphics, ceramics, textiles, printmaking, and a wide range of sculptural techniques. The projects and themes are very open, leaving as much scope for individual learning as possible. Students are encouraged to develop their own personal themes and topics. A sketchbook for developing design ideas, guest artists and a portfolio review are important aspects of the course. Students will develop works in this course that may be included in the Advanced Placement 2D Design and Drawing portfolios.

Honors Art III: Open Studio (GA)

66602

Grade Level: 11th - 12th

Prerequisite: Honors Art II and departmental approval or A.P. Studio

This course is designed for advanced students to further their exploration in making Art. The course provides the student with a wide berth of flexibility, allowing for skills to be honed, unique ideas to be developed, and experimentation with materials to be expanded. Students will pursue their individual projects under the guidance of the Visual Arts faculty and will participate in the Honors Slide Show in May.

AP Studio Art: 2-D Design Portfolio (BR)

68505

Grade Level: 10th - 12th

Prerequisite: Departmental approval

The two-dimensional design portfolio is intended to address a very broad interpretation of two-dimensional (2-D) design issues. This type of design involves purposeful decision-making about how to use the elements and principles of art in an integrative way. The elements of design (line, shape, illusion of space, illusion of motion, pattern, texture, value and color) are like a palette of possibilities that artists use to express themselves. The principles of design help guide artists in making decisions about how to organize the elements on a picture plane in order to communicate content. In addition to general work in 2-D design, a concentration is required for the course. A sustained investigation is a body of related works based on an individual's interest in a particular idea expressed visually. It focuses on a process of investigation, growth and discovery. This portfolio can include the use of advanced technology, digital photography, computer art, computer graphics, graphic design, collage, typography, product design, fabric design, weaving, illustration, drawing, painting, printmaking, etc.

AP Studio Art: 2-D Design Portfolio (GA)

66490

Grade Level: 10th - 12th

Prerequisite: Departmental approval

At Greenwich Academy, individual ideas are prized and all methods and materials are acceptable in making art for the AP 2-D Design portfolio. Students pose a personal question and then answer it through visual means. There is no preferred content or style. Students generate questions related to their experiences. They select materials, processes, and ideas to investigate, guided by their questions. They make work through practice, experimentation, and revision using selected components, developing skills in connecting materials, processes, and ideas within their work.

Methods and materials cover the gamut of art making. Everything from graphic design, digital imaging, photography, collage, fabric design, weaving, painting and printmaking are among the possibilities for portfolio submission.

AP Studio Art: Drawing Portfolio (BR)

68500

Grade Level: 10th - 12th

Prerequisite: Departmental approval

The drawing portfolio is designed to address a broad interpretation of drawing issues and media. Light and shade, line quality, rendering of form, composition, surface manipulation and illusion of depth are drawing issues that can be addressed through a variety of means. Many works of painting, printmaking and mixed media as well as abstract, observations and inventive works may qualify. The goal of the class is to address drawing issues, and also to develop a concentration, which is a body of related works based on an individual's interest in a particular idea expressed visually. It focuses on a process of investigation, growth, and discovery.

AP Studio Art: Drawing Portfolio (GA)

66500

Grade Level: 10th - 12th

Prerequisite: Departmental approval

At Greenwich Academy, individual ideas are prized and all methods and materials are acceptable in making art for the AP Drawing portfolio. Students pose a personal question and then answer it through visual means. There is no preferred content or style. Students generate questions related to their experiences. They select materials, processes, and ideas to investigate, guided by their questions. They make work through practice, experimentation, and revision using selected components, developing skills in connecting materials, processes, and ideas within their work.

The AP Drawing course focuses on the use of mark-making to render ideas. Students will use a variety of mark-making techniques, lines, textures, surface, space, light and shade and composition using all the drawing materials and processes that are available. There is no preferred content or style. Drawing, painting, printmaking and mixed media work are all acceptable methods of making art.

Students will create a portfolio of work for submission.

AP Studio Art: 3-D Design Portfolio (BR)

68510

Grade Level: 10th - 12th

Prerequisite: Departmental approval

The three-dimensional design portfolio is intended to address a broad interpretation of sculptural issues in depth and space. These may include mass, volume, form, plane, light, and texture. Such elements and concepts may be articulated through additive, subtractive, and/or fabrication processes. A variety of approaches to representation, abstraction, and expression may be part of the student's portfolio. These might include traditional sculpture, laser cut design sculpture, architectural models, ceramics, three-dimensional fiber arts or metal work, among others. A sustained investigation of works based on an individual's interest in a particular idea expressed visually is required.

AP Studio Art: 3-D Design Portfolio (GA)

66489

Grade Level: 10th - 12th

Prerequisite: Departmental approval

This portfolio is designed for work that focuses on the use of three-dimensional (3-D) elements and principles of art and how the artwork expresses these concepts in various forms.

A variety of approaches may include traditional sculpture, architectural models, ceramics (functional and abstract), fiber, and metal work, among others. A concentration of visual work is required, which is based on the student's interests. Experimentation and development of technique and expertise with materials is important.

Students consider how materials, processes, and ideas can be used to make work that involves space and form. Each student will have an original and unique body of work for portfolio submission.

Ceramics I

62000

Grade Level: 9th - 12th

Prerequisite: None

The course offers an interesting, varied, and exciting introduction to one of the oldest art forms known to the artist, ceramics. Clay has a unique plastic quality that changes dramatically when exposed to heat. This course is designed to introduce the student to a broad range of ceramic techniques and processes, including throwing and hand building processes, slips, glazes and decoration styles, and firing. We encourage students to develop themes and topics for themselves. A sketchbook for developing design ideas, a museum visit, and a portfolio review are all part of the course. Students who have successfully completed this course will be approved for an AP course the following year.

Honors Ceramics II: Ceramic Sculpture (BR)

68142

Grade Level: 10th - 12th

Prerequisite: Art I, Ceramics I or departmental approval

This course is designed for second-year Ceramics students to advance their range of ceramic techniques and processes, including throwing and hand building, slips, glazes and decoration styles, and firing. They also explore working with different mediums like wire, wood, and plaster with their clay elements. The students are asked to be more independent in the choosing of the themes and topics of the works. The course is built as a lead-in to the Advanced Placement studio courses. Assessment is based on the breadth and quality of the portfolio.

Honors Ceramics II: Form & Function (GA)

66402

Grade Level: 10th - 12th

Prerequisite: Art I, Ceramics I or departmental approval

The course offers a wide variety of clay-building methods, such as pinch, coil, slab and wheel throwing, to be used in functional and sculptural pieces. Other materials will be used to develop three-dimensional forms and craft items such as jewelry, tiles and decorative art pieces. Students are encouraged to develop a personal style and direction. Work in this course can be used in the Breadth Section of the AP Portfolio in Three-Dimensional Design the following year.

Computer Graphics I

68150

Grade Level: 9th - 12th

Prerequisite: None

This course offers the opportunity for students to develop and explore the unlimited design and visual communication possibilities that computers have to offer. The class will cover the use of computers and cameras as tools of the artist, photographer, graphic designer, product designer, and web designer. The goal of the class is to explore computer technology and use it to foster creative thinking as an artist's tool and as a way to enhance the visual clarity and style of any design work. Students will be working with a variety of modern design software, and will adapt to the frequent changes occurring in the fields of computers and interactive media. Hardware includes computers, slide and flatbed scanners, digital cameras, color laser printers and the Internet. There may be some cross-curricular exploration with other arts classes as well. Students who have successfully completed this course will be approved for an AP course the following year.

Honors Computer Graphics II

68250

Grade Level: 10th - 12th

Prerequisite: Computer Graphics I

This course offers the opportunity for students who have already taken the computer graphics class to explore this art form at a more advanced level. Students will be working with a variety of modern design software and will adapt to the frequent changes occurring in the fields of computers and interactive media. The class will cover the use of computers and cameras as tools of the artist, photographer, graphic designer, product designer, and web designer. Hardware includes computers, slide and flatbed scanners, digital cameras, color laser printers and the Internet. There may be some cross-curricular exploration with other arts classes as well. By the end of this class, students will be expected to produce work meant for a college portfolio or an Advanced Placement concentration. The concentration is a focused body of work exploring a personal, central interest as intensively as possible.

Film Production I

66501

Grade Level: 9th - 12th

Prerequisite: None

This course focuses on the development of introductory film production skills. Students will work collaboratively through a series of creative challenges and assignment prompts to develop strong creative problem-solving skills in the film studio. They will learn to write, storyboard, shoot, and edit footage; creating several short films over the course of the year. Students will produce work using digital cameras (Canon HD XA10's) and edit in Final Cut Pro. Discussion and application of techniques such as camera frame, continuity, coverage, and montage will be addressed. We will also explore new and emerging technology and experimental camera apps. Both feature and short films will be screened as related to assignments.

Honors Film Production II

66502

Grade Level: 10th - 12th

Prerequisite: Film Production I

The Film Production II class offers students the opportunity to further develop their film creation, production and editing skills while exploring new genres and techniques of filmmaking. The focus will be on more advanced levels of editing within Final Cut Pro. Additional time will be spent exploring the range of manual operations on the camera including white balance, exposure and shutter speed. Students will develop, script and produce several short films each semester. We will also explore new and emerging technology and experimental camera apps. Both feature and short films will be screened as related to assignments.

Honors Film Production III (BR)

68520

Grade Level: 10th - 12th

Prerequisite: Honors Film Production II or departmental approval

As a continuation from the build blocks set forth in Film I & II, students will take a more independent journey into video production. Stylistic freedom will be given to the Honors student in the evolution of their content, from conceptual ideas, production advancement, to the final film rendering. Peer groups will be formed to assess and edit ideas as a final script is formed. Students will determine their own shooting schedules and will be assessed weekly on the content they create. Both student and teacher evaluations will be conducted throughout the production process. Collaboration with the Recording Studio and Acting classes will also take place for cross-curricular amelioration. Students will work with DSLR cameras to maximize the quality of their shoots and will edit in Final Cut Pro X. Student's will also view and critique professional and independent films in the journey to better understand their own work.

Honors Film Production III (GA)

66504

Grade Level: 10th - 12th

Prerequisite: Honors Film Production II or departmental approval

This class will provide an opportunity for students who are serious about filmmaking to continue to produce work at a higher and more personal level. Each student will determine the direction, production calendar, and goals for his/her individual creative pursuit. Students will produce work on Canon 5D Mark III cameras and edit in Final Cut Pro. They will be required to assist each other in writer's room, during critiques, while screening professional and festival films, and as crew for each other during production blocks. Time will be dedicated to developing script arcs, beat sheets, storyboarding, and ultimately translating ideas to screen. Preparation of individual film reels for college review will be ongoing throughout the year.

Honors Film Production IV (GA)

66506

Grade Level: 12th

Prerequisite: Honors Film Production III

In this class, students will be given the opportunity to conceive, develop, and produce completely independent, upper-level film projects. Students' work can be created as either single, long form films, or as a series of shorts sharing ideas, focus, or content. Students may work individually or in collaborative teams pending teacher approval. Screenings, critiques, and new equipment workshops will be used throughout the year. This is a highly self-driven, process and product based, upper-level, creative class.

Honors Engineering and Design I (GA): Inventor's Workshop

36402

Grade Level: 11th - 12th

Prerequisite: Departmental approval and pre-course survey

*This course is offered jointly through the Engineering & Computer Science and Visual Arts departments and will be listed under both departments

While Inventor's Workshop focuses on design, building, digital fabrication, creative coding, programming microcontrollers, and electronics, it is not your typical engineering course. In this course you will be able to bring your wacky, alternative, design and engineering ideas to life. Held in GA's E+D Lab and built around a collection of core projects, this course is designed to bring out the creative potential in every student. Our lab work is grounded in experimentation, possibilities, and documenting the process, as students narrow down their ideas towards a finished product. This honors level course will prepare students with all of the technical tools and problem solving skills needed for Engineering and Design II, as well as advanced design, interactive, and new media possibilities in the visual arts.

Honors Engineering and Design II (GA): Inventions That Make Life Better

36403

Grade Level: 11th - 12th

Prerequisite: Honors Engineering and Design I (GA)

*This course is offered jointly through the Computer Science and Engineering and Visual Arts departments and will be listed under both departments.

This course is designed for students who have experience working with 2D and 3D design, digital fabrication, electronics and microcontrollers and would like to apply these skills to engineering problems of their design. Students will engage with the cyclical engineering design process to come up with solutions. Greenwich Academy's Engineering and Design Lab offers state-of-the-art fabrication machines and tools for building and prototyping their designs. The class will culminate in a presentation of projects and prototypes to a panel.

AP Art History

36467

Grade Level: 11th - 12th

Prerequisite: Departmental approval (see APPS)

This course explores the global history of art from the Prehistoric period to the present and prepares students for the AP Art History exam in May. Art historians study works of art in their specific cultural contexts and analyze the role of art in society. The AP Art History course explores the political, economic, religious, intellectual, and social conditions that account for artistic production. We examine artifacts from Europe, the Near East, Asia (China, Japan, India), Africa, the Americas, and the Pacific region. The course is interdisciplinary in nature, including considerations of archeology, patronage, materials, and conservation. We begin with the question of what constitutes "art," then move from a study of ancient Egyptian pyramids, Greek temples, and Renaissance painting to an examination of African sculptures, Mayan pyramids, and Chinese bronzes. Expansive in scope and time, the course concludes with a study of global contemporary art. Students engage in analytical writing, public speaking through Power Point and Podcasts, and a variety of creative projects. Field trips to the Metropolitan Museum of Art, the Museum of Modern Art, and other museums and galleries complement the curriculum.

Note: AP Art History fulfills Arts Requirement at Brunswick School and Greenwich Academy.

FALL SEMESTER COURSES

American Film: Big Screen Cultural Reflections (f)

36404

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course)

Prerequisite: None

*This course is offered jointly through the history and arts departments.

This course will celebrate America's most vivid cultural product, the Big Screen picture. Through readings, screenings and demonstrations, we will examine the craft, meaning and impact of some of the great films of the past 100 years. We will explore the roles of the producer, writer and director in developing the script. We will learn how cinematographers, production designers and editors shape images and sounds. We will look into the varying methods that produce performances that move us. We will discuss the criticism and business practices that define the tension between the art and commerce of moving pictures. Our work will always consider how film impacts and reflects US cultural landmarks of the day. Themes to explore include art versus entertainment, the teenage experience, life during wartime, civil rights, and gender roles. Students will be assessed on content through short written responses and in-class discussions. Final projects, highlighting the confluence of disciplines required to produce a film, will be fulfilled through an in-class presentation or paper.

This class can be taken in conjunction with the spring semester class, "American Film and Beyond," for full year credit, or as a one-semester course in the fall.

Architectural Space & Design Elements I (f)

68144

Grade Level: 10th - 12th

Prerequisite: Architecture & Design I, Architecture & Design II or departmental approval

This is an introductory course to architectural design and examines the relationship between interior and exterior spaces. Students will involve themselves with the development of an idea from concept to construction using a series of problem solving and design techniques. Students will use a variety of media to develop their ideas and construct their concepts. Students will be introduced to the computer program, Google *SketchUp*, which will allow the development of design ideas and presentation. This course is a complement to Architecture and Design I.

Architecture & Design I (f)

68143

Grade Level: 9th - 10th

Prerequisite: None

This is an introductory course in which basic fundamentals of architectural design are examined and perfected. Using a combination of problem solving, drawing, and construction techniques students will be introduced to how an idea develops from concept to construction. Students will be introduced to the computer program Google *SketchUp* which allows the development of design ideas and presentation. This course culminates with a series of three-dimensional explorations using a variety of materials and techniques.

Art and Design I (f)

68147

Grade Level: 9th - 12th

Prerequisite: None

The course emphasizes the fundamentals of fine art techniques including drawing, painting, printmaking, computer graphics, ceramics and sculpture. Important art concepts as composition, perspective, and color theory are introduced. The course challenges each student to think critically and creatively, be original, and to experiment with a variety of materials. Students work from observation, memory, imagination, and personal expression toward styles that express their own vision. They are exposed to historical and contemporary art through visits to museums and galleries, slide presentations, and visits from professional guest artists. Students who have successfully completed this course will be approved for an AP course the following year.

Ceramics: Intermediate (f)

66405

Grade Level: 10th - 12th

Prerequisite: None

The course can be taken for a half-year (Fall or Spring) or the full year. The class offers students and opportunity to explore the basic techniques of clay building as well as experience on the potter's wheel. Aside from clay, other materials will be used to develop sculptural forms. The class is also open to those students who are building their AP 3D portfolio.

CTM: 3D Modeling and Printing (f)

66612

Grade Level: 9th - 12th

Prerequisite: None

Do you love building, technology, and making art? Put on your "thinkering" cap and discover the possibilities for making art in GA's Engineering and Design Lab. In this class, you will invent projects that use advanced mechanical tools, that often are intended for specific functions, to create open-ended, art-based finished work. Students will dive into 3D modeling and design, 3D fabrication and new media art forms in this course.

Introduction to Drawing (f)

66630

Grade Level: 9th - 12th

Prerequisite: None

The goal of this course is to develop basic drawing skills that will be your foundation for taking AP Drawing the next year. The class will cover rendering gesture, contour, mass, form, conveying light and dark, line quality and a wide variety of mark-making and composition ideas, as well as imaginative drawing. A wide variety of drawing media and tools will be used, including pencil, charcoal, pen, pastels, watercolors, printmaking and more.

STEAM 101: The Coding Palette (f)

78610

Grade Level: 9th - 12th

Prerequisite: None

Positioned squarely at the intersection of Computer Science and Visual Arts, the Coding Palette class is designed to promote software literacy within the visual arts, and visual literacy within technology. The class will carefully blend problem-solving ability with creativity, showing students not only how to code and solve problem sets, but prioritizing the artistic expressions they can create with these digital tools.

Extensively project-based and focused on collaborative team-work, the class will enable students from both disciplines to explore technology's contemporary interaction with arts, communication and design, while guiding them to find their own interpretation of those common threads.

The class will leverage MIT Media Lab's open-source Processing software language. Processing is a flexible software sketchbook and a language for learning how to code within the context of the visual arts. Quite similar but simpler than the Java programming language, Processing provides a graphical user interface for simplifying compilation and execution of projects. Computer Science and Studio Art students will have an opportunity to learn the basics of Processing language, and work together to create visual projections of their work.

Starting with theoretical lectures to teach programming, the class will seamlessly transition to practical studio time, where students will learn to prototype, develop and showcase their digital arts projects using algorithms, constantly tweaking and updating them to arrive at the most pleasing visual results.

Write Code! Make Art!

SPRING SEMESTER COURSES

American Film and Beyond (s)

36450

Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course)

Prerequisite: None

*This course is offered jointly through the history and arts departments.

This course will celebrate the Big Screen picture from Hollywood and beyond. Through readings, screenings and demonstrations, we will examine the craft, meaning and impact of some of the great films of the past 100 years. We will explore the role of the producer, writer and director in developing the script. We will learn how cinematographers, production designers and editors shape images and sounds. We will look into the varying methods that produce performances that move us. We will discuss the criticism and business practices that define the tension between the art and commerce of moving pictures. Our work will always consider how film impacts and reflects relevant cultural landmarks of the day. During each semester we will focus on different themes including art versus entertainment, the teenage experience, life during wartime, civil rights, and gender roles. Students will be assessed on content through short written responses and in-class discussions. Final projects, highlighting the confluence of disciplines required to produce a film, will be fulfilled through an in-class presentation or paper.

This class can be taken in conjunction with the fall semester class, "American Film: Big Screen Cultural Reflections," for full year credit, or as a one-semester course in the spring.

Architectural Space & Design Elements II (s)

68146

Grade Level: 10th - 12th

Prerequisite: Architecture & Design I, Architecture & Design II or departmental approval

Architects envision, design, and process ideas through a variety of different media. They record concepts, test scenarios, and resolve problems for spaces. This course will concentrate on the designing and making of functional and/or sculptural elements for an architectural space. Using a combination of problem solving design techniques students will involve themselves with the understanding of an idea from concept to construction. Using state-of-the-art equipment and our shop space, students will learn how to design and construct. This course is a complement to the other architecture classes, which concentrates on the exterior of architectural spaces. This course focuses on the design of interior space.

Architecture & Design II (s)

68145

Grade Level: 9th - 10th

Prerequisite: None

This course is a practical look at architecture through drawing, design, and construction using a variety of different media. It is structured to develop an understanding and ability to use representational media to visualize, document, investigate, and present intentions within the graphic language of architectural communication. Students will be introduced to computer programs *AutoCad and Rhino*, which will allow for the development of design ideas and presentation. This course culminates with a series of three-dimensional explorations.

Art and Design I (s)

68148

Grade Level: 9th - 12th

Prerequisite: None

The course emphasizes the fundamentals of fine art techniques including drawing, painting, printmaking, computer graphics, ceramics and sculpture. Important art concepts as composition, perspective, and color theory are introduced. The course challenges each student to think critically and creatively, be original, and to experiment with a variety of materials. Students work from observation, memory, imagination, and personal expression toward styles that express their own vision. They are exposed to historical and contemporary art through visits to museums and galleries, slide presentations, and visits from professional guest artists. Students who have successfully completed this course will be approved for an AP course the following year.

Ceramics: Intermediate (s)

66406

Grade Level: 10th - 12th

Prerequisite: None

The course can be taken for a half-year (Fall or Spring) or the full year. The class offers students and opportunity to explore the basic techniques of clay building as well as experience on the potter's wheel. Aside from clay, other materials will be used to develop sculptural forms. The class is also open to those students who are building their AP 3D portfolio.

CTM: New Media and 3D Worlds (s)

66613

Grade Level: 9th - 12th

Prerequisite: None

Do you love art and code? In this class, you will think about digital art in new and creative ways. Data and pixels will be the materials for making as students design, code, and create interactive works on screens, in browsers, and in virtual reality.

Intermediate Drawing (s)

66631

Grade Level: 9th - 12th

Prerequisite: Introduction to Drawing (f)

This course is designed to address personal ideas and imaginative concepts through continued exploration of drawing techniques. The course will include sustained investigation of personal art ideas. These techniques will continue to build a drawing portfolio that can be used as the foundation for the AP Drawing course.

PERFORMING ARTS

The Music Departments of Brunswick School and Greenwich Academy offer students the opportunity to perform in a variety of ensembles, both choral and instrumental. Non-performance classes are also available, including A.P. Music Theory and Recording Studio.

INSTRUMENTAL MUSIC

There are a number of opportunities for instrumental musicians at the Academy and Brunswick. Brass, woodwind, guitar and percussion students may play in large and small ensembles, from chamber music to auditioned jazz groups such as the Blue Notes. Private lessons are offered on all instruments as well as in piano and voice.

Band I

68352

Grade Level: 9th

Prerequisite: None

This course is designed for all incoming 9th graders who wish to continue playing an instrument in an ensemble. This class offers varied instruction to all levels. It is open to all instrumentation including, brass, woodwinds, percussion, drum kit, bass (upright or electric), guitar (acoustic or electric), keyboard and strings. The primary goal is to foster a love of music and proficiency on their instrument. Students will learn music theory and improvisational skills through studying a varied repertoire of artists and styles including pop, rock, funk, blues, jazz, etc. This course will also help prepare each student for upper level ensembles.

Guitar I

68149

Grade Level: 9th - 12th

Prerequisite: None

This course is designed to help students increase their guitar playing knowledge and ability. Students will also learn how to play in a group setting. Students will cover a variety of styles including rock, classical and popular music songs. We will also be covering basic chords, (barre and open) notes on the guitar neck and reading notes and rhythm. This class will perform at our three major concerts in the fall, winter and spring.

Recording Studio I

68154

Grade Level: 9th - 12th

Prerequisite: None

This course teaches students how to use the recording, mixing and engineering program, Logic Pro. Students need no prior experience or other music courses to participate in this class. During the year, students will learn the basic techniques necessary to record instruments and vocals. They will also learn basic piano theory along with rhythmic studies. Programming loops and original drum beats will help them in the composition of their own projects. There are also numerous opportunities for collaborative projects. Students will be able to present their work to the school community several times throughout the year.

Honors Band II

68353

Grade Level: 10th

Prerequisite: None

Band 2 is open to all instrumentation, including brass, woodwinds, percussion, electric bass and guitar, keyboard and strings. This course will further the student's knowledge of chord structure, scale usage, rhythm and form by studying various jazz styles and genres such as the blues, R&B, funk, swing, Latin and pop. Members of this band will continue to develop their own musical vocabulary and become more skilled at applying them to improvised solos and jazz technique.

Honors Guitar II

68249

Grade Level: 10th - 12th

Prerequisite: Guitar Ensemble I or departmental approval

Guitar II is offered to students on both campuses who wish to increase their guitar playing skills beyond what is learned in Guitar I. Instruction includes advanced chords, power chords, finger-style picking, and reading tablature. All students will have the opportunity to learn to play bass guitar along with improving techniques and skills on electric guitar and acoustic guitar.

Honors Recording Studio II

68254

Grade Level: 10th - 12th

Prerequisite: Recording Studio I

This course is a continuation of the skills and techniques learned in Recording Studio I. This course will offer a number of project opportunities for students, such as recording CDs, creating background music and sounds for movie and theatrical productions, recording and engineering CDs for fellow classmates and becoming more advanced in the technical knowledge in this cutting edge technological field. Previous recording experience (or Recording Studio) is a prerequisite for this course.

Honors Music Improv I

68157

Grade Level: 10th - 12th

Prerequisite: Band I or departmental approval

Popular Music Education is becoming more and more popular in schools around the world because it provides the musician with a number of skills necessary to understand and directly apply musical concepts in a collaborative environment. At Brunswick, our Music Improv classes provide just that. Students work together with their instructor to pick repertoire that best showcases their abilities and talent. Through learning a varied repertoire of songs, students will better understand how to apply their knowledge of diatonic harmony and improvisational skills. All instrumentation are welcome! Students will have the opportunity to perform at all major concerts and functions throughout the year.

Honors Music Improv II

68357

Grade Level: 11th - 12th

Prerequisite: Audition or departmental approval

Honors Music Improv II builds on the same foundation as Honors Music Improv I but explores repertoire that is slightly more demanding in terms of musical complexity. Students will have a better grasp on soloing and understand how to use modes as a springboard to improvisation. Rhythm sections will “lock” and groove with greater ease. Our Honors Music Improv bands are featured both in and out of school. They have been asked on several occasions to play at The Greenwich Town Party, sharing the bill with Eric Clapton and Santana to name a few.

The Blue Notes

68351

Grade Level: 10th - 12th

Prerequisite: Audition or departmental approval

The Blue Notes provides an opportunity for students to perform in a traditional jazz big band. Strong sight-reading skills play a major role in this class. Students will develop the skills necessary to perform a varied repertoire with a focus on jazz. This group employs the traditional instrumentation of four trumpets, four trombones, five saxophones, piano, bass and drums. Members of the band will learn about the history of jazz as well as explore the melodic, harmonic and rhythmic concepts used to “speak” the language. Frequent playing tests (both individually and as a section) are used to measure the success of each member and section. Auditions are held in the spring for the following school year.

VOCAL/CHORAL MUSIC

In the choral groups the goal is to educate students in the rudiments of music in order to be literate and proficient in reading and performing from various historical periods and musical styles. The vast choral repertoire for male, female and mixed voices is explored.

Gospel Choir

66201

Grade Level: 9th - 12th

Prerequisite: None

Gospel choir is open to students in both Brunswick and Greenwich Academy. Participating members will receive one half-credit for the year towards their arts requirement. Students will have the opportunity to explore the various styles of gospel music, both contemporary and traditional. Emphasis will be placed on strengthening vocal technique and part singing ability. Singers will perform as an ensemble with solo opportunities throughout the school year. No audition is necessary. Rehearsals are held during the Clubs time on Fridays with some additional rehearsals scheduled as needed.

Men of Brunswick Chorus

68321

Grade Level: 9th - 12th

Prerequisite: Audition

Men of Brunswick Chorus is an audition-based class designed for singers that are able to recognize pitch, tone color and rhythms by hearing, and then demonstrating that through singing and performance. In this advanced choir, students will learn advanced skills of singing and reading music. Students will sing advanced repertoire from various eras of musical history and from a variety of music styles: including gospel, musical theater, pop, and classical. Students will have the opportunity to perform at all major concerts and functions throughout the year. This is a full year course that meets during the academic day the same as all arts courses.

Morning M.O.B.

68320

Grade Level: 9th - 12th

Prerequisite: None

This outstanding group meets three mornings each week from 7:00 – 7:40 am for rehearsal and receives a full arts credit. This course is designed to help chorus students learn to use their voice as an instrument. In addition to working on vocal technique, students will also learn sight singing and performance skills. This performance-based class offers opportunities for students to develop team building and leadership skills. Students will perform at our three major concerts in the fall, winter, spring also including football games and various events throughout the school year.

Bel Canto

66100

Grade Level: 9th - 10th

Prerequisite: None

This course is open to all girls who are interested in singing. The focus of the class is to build a healthy vocal technique for each singer, whether her goal is to perform in school musicals or audition for Madrigal Singers. Singers will perform as an ensemble in school concerts throughout the year, studying treble literature of all styles, from classical to popular music. *Bel Canto* (from the Italian, *beautiful singing*) is a style that emphasizes beauty of tone throughout the full range of the voice. Students will also concentrate on improving sight-singing skills through solfege study and basic music theory.

Bel Canto is a prerequisite course for Madrigal Singers.

Madrigal Honors Ensemble

66300

Grade Level: 10th - 12th

Prerequisite: Bel Canto; audition required

This course is designed to offer the most advanced level of choral music training at the Academy. The Madrigal Singers study treble literature of all periods, from the Renaissance through contemporary music. Their schedule includes several performances a year for school and community events and an international tour every two years.

Musical excellence is achieved by emphasis on ear training, vocal/choral techniques, and study of the highest quality literature written for women's voices. Solfege is the foundation of sight-reading using the Oxford Folk Song Sight Singing Series and other methodologies. Students are assessed through regular singing tests in solfege and in the performance repertoire. Auditions are held in the spring for the following school year. Students with other choral experience or voice training may audition with permission of instructor.

As part of the course, Madrigals participate in an international tour every two years. The next tour is scheduled for June of 2021.

MUSIC THEORY

AP Music Theory

66445

Grade Level: 9th - 12th

Prerequisite: Intro to Music Theory or departmental approval

In AP Music Theory we will study the basic building blocks of music (i.e. notes, intervals, chords, melody, and harmony) by examining music from the Baroque period (17th century) through today's pop songs. By the end of this course you will be able to listen to a piece of music and not only write down the melody, but comprehend and reproduce its underlying harmonies and formal structure. In addition, we will incorporate sight singing, arranging, and composition techniques to develop a deeper musical fluency. The course culminates in the AP Music Theory exam and a final composition/arranging project.

FALL SEMESTER COURSES

Music History Survey (f)

66448

Grade Level: 9th - 12th

Prerequisite: None

This is a one-semester course which covers the history of music from the medieval period to the contemporary music of today. Students will listen to and study works from the major historical periods of music. The course will also provide opportunities to understand the relationships of musical works, composers, forms and styles with the political and social events of their historical periods.

SPRING SEMESTER COURSES

Intro to Music Theory and Composition (s)

66446

Grade Level: 9th - 12th

Prerequisite: None

A one-semester course, Music Theory and Composition is designed to equip students for further musical pursuits. In particular, this class would be excellent preparation for the AP music theory course. Emphasis will be on the development of skills in sight-reading, ear training, and keyboard. Music composition will be an important part of this course with students developing their own composition projects by the end of the semester.

THEATER

The Theater Arts Department offers classes in both performance and technical studies. The program is structured for students who are serious about their craft as well as those who want to take a class for the joy of it. With creativity and collaboration students learn the process of bringing a production from conception through performance. By heightening individual skills, students become a part of the collective whole. Theater students are encouraged to supplement their class work by participating in any of the numerous productions mounted each year.

Acting I

68410

Grade Level: 9th - 10th

Prerequisite: None

This course is designed for anyone who is interested in acting. Students will develop essential performance skills, including strong diction, confident stage presence, and the ability to portray a character effectively. Actors will learn to tackle a wide variety of material, from mastering challenging Shakespeare monologues to performing truthfully in contemporary scenes from modern plays and films. In addition to our in-class stage performances, we will work in collaboration with the film class to create short, filmed scenes. The course will be taught jointly by faculty from Greenwich Academy and Brunswick with classes being held on both campuses.

Honors Acting II

68430

Grade Level: 10th - 12th

Prerequisite: Acting I or departmental approval

Students will explore a variety of different acting techniques through vocal and movement exercises and in depth scene study. We will work to find the acting techniques that resonate best with each individual student by looking at some of theatre's most influential figures, such as Stanislavski, Meisner, Strasberg, Brecht, and Suzuki. The ways in which theatre has questioned and challenged cultural norms of each generation will also be explored. The course will be taught jointly by faculty from Greenwich Academy and Brunswick with classes being held on both campuses.

Honors Acting III

68433

Grade Level: 11th - 12th

Prerequisite: Honors Acting II and departmental approval

This course, for both the actor and director, investigates tools to create a character on stage. Students will take turns between acting and directing scenes after a thorough analysis of the material. Through advanced scene study students will focus on process as well as product. Course projects will include showing one's work as both actor and director to an audience.

Playwriting and Directing

66424

Grade Level: 11th - 12th

Prerequisite: Honors Acting or departmental approval

This course gives students the opportunity to write their own short scenes and one-act plays and develop them into a theatrical production. Members of the class serve as actors and directors for one another. Students will help bring original student works to life by providing input from these different perspectives so that everyone can experience the advantage of thoughtful collaboration in the creation of a new play. Each student's final script will be entered in the Stamford Young Playwright competition.

Theatrical Design and Stage Craft I

68421

Grade Level: 9th - 12th

Prerequisite: None

Students are introduced to the elements of basic stagecraft in this open-level course. Utilizing the state-of-the-art resources in the Baker and Black Box Theaters, students focus on the professional conventions used today in set construction, scene painting, costumes, lighting, and sound. Students have the opportunity to learn experientially using cutting-edge stage, lighting, and sound equipment as crew members for the various productions that happen throughout the year.

Theatrical Design and Stage Craft II

68423

Grade Level: 10th - 12th

Prerequisite: Theatrical Design and Stage Craft I or departmental approval

Students continue their education in stage technology and design in this second year course. Advanced study in set construction, lighting, and sound combines with an introduction to the Color Kinetics LED lighting system in the Baker Theater. Students also continue study in set, lighting, and sound design principles through a partnership with the Acting II class wherein they will plan, design, and execute small theater projects. Technical design using the computer drafting program AutoCAD, basic set design sketching, lighting plot design, and sound design principles are also introduced.

Honors Design and Stage Craft

68424

Grade Level: 10th - 12th

Prerequisite: Theatrical Design and Stage Craft II or departmental approval

Requiring the foundational skills gained through Theatrical Design and Stage Craft II, this class focuses coursework on one to two chosen areas of specialized study within the technical theater realm. Honors students may elect to pursue advanced projects in the following areas: set design/construction, light design/electrics, sound design/audio engineering, and/or technical direction. Practicums are required for various concerts and special events during the academic year. These experiential projects are used as training exercises in anticipation of Brunswick's fall play, winter musical, and spring comedy, for which students will be assigned management-level production posts in their chosen area(s).

Costume Design I

66411

Grade Level: 9th - 12th

Prerequisite: None

Students will be introduced to the fundamentals of costume design in this open-level course. They will have the opportunity to learn every element from initial design concept to the final garment, while gaining hands-on experience. Students will explore styles (including wig, make up and accessory design) and their historical contexts ranging from two thousand years ago to present day. Show budgeting and basic sewing skills will be taught throughout the course with a culminating project, designing the Group V play.

Honors Costume Design II

66413

Grade Level: 10th - 12th

Prerequisite: Costume Design I

This course offers opportunity for students to further develop skills learned in Costume Design I. Students will experience new approaches to the art of Costume design with the use of 3D printers and laser cutters in the engineering and design labs. In addition, students will continue to build on their knowledge of historical styles, budgeting, and garment construction. In the culminating project, students will design costumes for the Group VII play beginning with the initial concept to the finished garments.

DANCE

The goal of the dance program is to provide an artistic, technical and creative physical outlet for our students. Dance classes (which are offered as an alternative to PE) and the performing companies at GA emphasize sophisticated, versatile training through exposure to a variety of contemporary and classical dance forms with professional faculty and visiting guest artists. Options exist for students ranging in experience from advanced dancers to those who have never formally studied dance before. A balanced emphasis on technique and composition ensures a unique opportunity for our students to develop as dancers and choreographers.

Junior Dance Corps

66361

Grade Level: 9th - 12th

Prerequisite: Audition

Junior Dance Corps is the preparatory company for the Greenwich Academy Dance Corps. Once selected from an audition process during pre-season, JDC members are invited to participate for the duration of their time at the Academy, or they may wish to audition again for admittance to Dance Corps. JDC is comprised of students in grades 9-12 who have exhibited a love of dance and a desire to build upon their creative and technical abilities. JDC meets every Thursday after school in the PAC. Members are required to participate in dance at least one trimester per year and perform in both Winterfest and the Spring Dance Concert. JDC members may be invited to showcase their choreography during their time in the company.

Dance Corps

66360

Grade Level: 9th - 12th

Prerequisite: Audition

The Greenwich Academy Dance Corps is our resident dance company comprised of students from grades 9-12 who have been selected for their technical ability, interest in creative expression and commitment to dance. Once selected from an audition process during pre-season, Dance Corps members are invited to participate for the duration of their time at the Academy. **Dance Corps members must take dance class as an alternative to P.E. at least two trimesters during the school year. A commitment to Dance Corps includes rehearsal on Monday evenings and most Sunday afternoons to prepare for *Winterfest* and the *Spring Dance Concert*.** These concerts are comprised of pieces choreographed primarily by Dance Corps members, incorporating a range of styles. Dance Corps members also have the privilege of working with professional faculty and guest choreographers as part of our Upper School dance residency—an experience which broadens their understanding of movement and of the dance field.

GLOBAL ONLINE ACADEMY

2020-2021 Student Course Catalog

The mission of Global Online Academy (GOA) is to reimagine learning to enable students to thrive in a globally networked society. GOA provides a positive, interactive, and academically rigorous environment for students to learn. We offer courses that connect students to topics they care about, and we offer a network that connects students to peers as passionate as they are.

As GOA learners, our students also develop a specific set of skills, skills that might not be exercised as often in a bricks-and-mortar environment. Based on our research, student surveys, and feedback from our faculty, we have identified the following six core competencies that our students develop in practical, hands-on ways, no matter which GOA course they take:

1. Collaborate with people who don't share your location.
2. Communicate and empathize with people who have perspectives different from your own.
3. Curate and create content relevant to real-world issues.
4. Reflect on and take responsibility for your learning and that of others.
5. Organize your time and tasks to learn independently.
6. Leverage digital tools to support and show your learning.

To build these skills, GOA courses are:

- **Globally connected:** Even though our courses are online, students get to know their teachers and classmates by learning how to use technology to build relationships. Our small classes have students from many different schools, led by expert teachers. Students log in multiple times a week to engage in discussions, collaborate on projects, and share ideas.
- **Challenging:** GOA courses are designed to be as rigorous as any course at a home school. Students spend 5-7 hours a week on their courses. GOA courses are mostly asynchronous: students do not show up on certain days at certain times. Instead, teachers publish a calendar of activities, and within that framework, students work on their own schedules, gaining critical independent learning skills along the way.
- **Relevant:** We want students to pursue their passions. Our courses offer practical, hands-on experience in how these ideas can be applied to the world outside of school. Students have a voice and choice in the work they do and the ideas they explore.

Students in grades 10-12 may enroll in a GOA course. These courses are semester electives that are offered as part of a student's regular schedule. Students should register for GOA courses through the described process at GA (see Mr. Schwartz) or Brunswick (see Mr. Booth) and consider the following guidelines:

- GOA courses are elective offerings and are not intended to fulfill or replace core requirements.
- Students may not register for a GOA course that is determined (by the Head of Upper School) to conflict or overlap with a course currently offered at GA or Brunswick.
- The GOA course cannot be a seventh course for GA students.
- GOA course grades are listed and reported on student transcripts.
- Students must request GOA courses during GA/BR registration with Mr. Schwartz at GA or Mr. Booth at Brunswick.
- GOA adheres to strict drop/add policies and requires that students drop or add classes within the first two weeks of the GOA semester.

GOA Academic Calendar for 2020-2021

- Semester 1: September 2 – December 18, 2020
 - September 11 (5pm PST): Last day to add or drop a GOA course
- Semester 2: January 13 – April 30, 2021
 - January 22 (5pm PST): Last day to add or drop a GOA course

ART, MEDIA, AND DESIGN - SEMESTER 1

CREATIVE NONFICTION WRITING: Tell your own stories and the stories of the world around you! This course centers on the art of shaping real experiences into powerful narratives while growing foundational writing skills. Participants will read, examine, and write diverse works of creative nonfiction including personal narratives, podcasts, opinion editorials, profile pieces, and more. Emphasizing process over product, this writing workshop provides opportunities to create in new ways. Students will practice essential craft elements (e.g., voice, style, structure) while reflecting on stories from their own lives, communities, and interests. They will also build a personalized library of inspiring mentor texts, consider opportunities for publication, and develop sustainable writing habits. Both in real-time video chats and online discussion spaces, students will support one another intentionally. Feedback is an essential component of this course, and students will gain experience in the workshop model, actively participating in a thriving, global writing community. Creative nonfiction has never been as popular as it is today; participants will experience its relevance in their own lives as they collaboratively explore this dynamic genre.

(NEW!) DATA VISUALIZATION* : Through today's fog of overwhelming data, visualizations provide meaning. This course trains students to collect, organize, interpret, and communicate massive amounts of information. Students will begin wrangling data into spreadsheets, learning the basic ways professionals translate information into comprehensible formats. They will explore charts, distinguishing between effective and misleading visualizations. Employing principles from information graphics, graphic design, visual art, and cognitive science, students will then create their own stunning and informative visualizations. From spreadsheets to graphics, students in this course will practice the crucial skills of using data to decide, inform, and convince. *There is no computer science, math or statistics prerequisite for this course*, though students with backgrounds in those areas will certainly find avenues to flex their knowledge in this course.

FILMMAKING: This course is for students interested in developing their skills as filmmakers and creative problem-solvers. It is also a forum for screening the work of their peers and providing constructive feedback for revisions and future projects, while helping develop critical thinking skills. The course works from a set of specific exercises based on self-directed research and culminates in a series of short experimental films that challenge students on both a technical and creative level. Throughout, we will increasingly focus on helping students express their personal outlooks and develop unique styles as filmmakers. We will review and reference short films online and discuss how students might find inspiration and apply what they find to their own works. *Prerequisite: Students must have access to an HD video camera, tripod or other stabilizing equipment, and editing software such as iMovie, Premiere Pro, etc.*

GRAPHIC DESIGN: What makes a message persuasive and compelling? What helps audiences and viewers sort and make sense of information? This course explores the relationship between information and influence from a graphic design perspective. Using an integrated case study and design-based approach, this course aims to deepen students' design, visual, and information literacies. Students are empowered to design and prototype passion-driven communication projects. Topics include: principles of design and visual communication, infographics, digital search skills, networks and social media, persuasion and storytelling with multimedia, and social activism on the internet. Student work will include individual and collaborative group projects, graphic design, content curation, analytical and creative writing, peer review and critiques, and online presentations.

POETRY WRITING: Poetry teaches us our humanity. Through writing weekly drafts and reading a wide range of poets, you will learn more about yourself and what captures the attention of poets. Whether you are an experienced writer or an adventurous spirit willing to give poetry a try— this course will help you to increase facility with language, imagination, and the writing process. Using discussion threads, spoken word, and video conferencing, we will create a trusting community of writers willing to explore authentic subjects. The weekly experience includes poetry drafts and a workshop format where you will hone your skills in giving and receiving positive feedback. You'll also read a range of texts (printed and media) to become familiar with important poets working today and their influences. By the end of the course, you'll have a portfolio of revised, publishable poems for a class book and international journals. Previous GOA students have published in *Aerie International*, *Repentino*, *Teen Ink*, *Teen Vogue*, *Hanging Loose*, and earned both regional and national Scholastic Writing Awards.

ART, MEDIA, AND DESIGN - SEMESTER 2

ARCHITECTURE: In this course, students build an understanding of and apply skills in various aspects of architectural design. While gaining key insights into the roles of architectural analysis, materials, 3D design, and spatial awareness, students develop proficiency in architectural visual communication. We begin by learning the basic elements of architectural design to help analyze and understand architectural solutions. Through digital and physical media, students develop an understanding of the impact building materials have on design. At each stage of the course, students interact with peers from around the globe, learning and sharing how changes in materials, technology, and construction techniques lead to the evolution of contemporary architectural style and visual culture. The course culminates with a final project in which each aspiring architect will have the opportunity to work towards a personal presentation for the GOA Catalyst Conference. Students will, through a variety of outcomes, present an architectural intervention that they have proposed as a solution to an identified need, one emanating from or focused within their own community. Throughout the course, students will refer to the design process and will use journaling techniques to track, reflect, and evidence their understanding of architecture.

COMPUTER SCIENCE II: GAME DESIGN AND DEVELOPMENT*: In this course, students design and develop games through hands-on practice. Comprised of a series of "game jams," the course asks students to solve problems and create content, developing the design and technical skills necessary to build their own games. The first month of the course is dedicated to understanding game design through game designer Jesse Schell's "lenses": different ways of looking at the same problem and answering questions that provide direction and refinement of a game's theme and structure. During this time, students also learn how to use Unity, a professional game development tool, and become familiar with the methodologies of constructing a game using such assets as graphics, sounds, and effects, and controlling events and behavior within the game using the C# programming language. Throughout the remainder of the course, students will work in teams to brainstorm and develop new games in response to a theme or challenge. Students will develop their skills in communication, project and time management, and creative problem-solving while focusing on different aspects of asset creation, design, and coding. *Prerequisites: Computer Science I: Computational Thinking or its equivalent.*

DIGITAL PHOTOGRAPHY: In an era where everyone has become a photographer obsessed with documenting most aspects of life, we swim in a sea of images posted on Instagram, Facebook, Snapchat, Pinterest, and other digital media. To that end, why is learning how to use a digital camera important and what does taking a powerful and persuasive photo with a 35mm digital single lens reflex (DSLR) camera require? Digital photography explores this question in a variety of ways, beginning with the technical aspects of using and taking advantage of a powerful camera and then moving to a host of creative questions and opportunities. Technical topics such as aperture, shutter, white balance, and resolution get ample coverage in the first half of the course, yet each is pursued with the goal of enabling students to leverage the possibilities that come with manual image capture. Once confident about technical basics, students apply their skills when pursuing creative questions such as how to understand and use light, how to consider composition, and how to take compelling portraits. Throughout the course, students tackle projects that enable sharing their local and diverse settings, ideally creating global perspectives through doing so. Additionally, students interact with each other often through critique sessions and collaborative exploration of the work of many noteworthy professional photographers whose images serve to inspire and suggest the diverse ways that photography tells visual stories. *Prerequisite: Students must have daily access to a DSLR camera.*

FICTION WRITING: This course connects students interested in creative writing (primarily short fiction) and provides a space for supportive and constructive feedback. Students gain experience in the workshop model, learning how to effectively critique and discuss one another's writing in an online environment. In addition to developing skills as readers within a workshop setting, students strive to develop their own writing identities through a variety of exercises. The course capitalizes on the geographic diversity of the students by eliciting stories that shed light on both the commonalities and differences of life experiences in different locations. Additionally, we read and discuss the work of authors from around the globe. Students' essential responsibilities are twofold: to engage in the class as readers and writers and to focus on their development as readers and writers. Both require participation in discussions of various formats within our online community, as well as dedicated time outside of class reading and providing feedback on one another's work and writing original pieces for the workshop.

iOS APP DESIGN*: Learn how to design and build apps for the iPhone and iPad and prepare to publish them in the App Store. Students will work much like a small startup: collaborating as a team, sharing designs, and learning to communicate with each other throughout the course. Students will learn the valuable skills of creativity, collaboration, and communication as they create something amazing, challenging, and worthwhile. Coding experience is NOT required and does not play a significant role in this course. *Prerequisite: For this course, it is required that students have access to a computer running the most current Mac or Windows operating system. An iOS device that can run apps (iPod Touch, iPhone, or iPad) is also highly recommended.*

MATHEMATICS AND TECHNOLOGY - OFFERED IN SEMESTERS 1 AND 2

COMPUTER SCIENCE I: COMPUTATIONAL THINKING: *This course (or its equivalent) is a prerequisite to all Computer Science II classes at GOA.* Computational thinking centers on solving problems, designing systems, and understanding human behavior. It has applications not only in computer science, but also myriad other fields of study. This introductory level course focuses on thinking like a computer scientist, especially understanding how computer scientists define and solve problems. Students begin the course by developing an understanding of what computer science is, how it can be used by people who are not programmers, and why it's a useful skill for all people to cultivate. Within this context, students are exposed to the power and limits of computational thinking. Students are introduced to entry level programming constructs that will help them apply their knowledge of computational thinking in practical ways. They will learn how to read code and pseudocode as well as begin to develop strategies for debugging programs. By developing computational thinking and programming skills, students will have the core knowledge to define and solve problems in future computer science courses. While this course would be beneficial for any student without formal training as a programmer or computer scientist, it is intended for those with no programming experience.

GAME THEORY: Do you play games? Do you ever wonder if you're using the "right" strategy? What makes one strategy better than another? In this course, we explore a branch of mathematics known as game theory, which answers these questions and many more. Game theory has many applications as we face dilemmas and conflicts every day, most of which we can treat as mathematical games. We consider significant global events from fields like diplomacy, political science, anthropology, philosophy, economics, and popular culture. Specific topics include two-person zero-sum games, two person non-zero-sum games, sequential games, multiplayer games, linear optimization, as well as voting and power theory.

NUMBER THEORY: Once thought of as the purest but least applicable part of mathematics, number theory is now by far the most commonly applied: every one of the millions of secure internet transmissions occurring each second is encrypted using ideas from number theory. This course covers the fundamentals of this classical, elegant, yet supremely relevant subject. It provides a foundation for further study of number theory, but even more, it develops the skills of mathematical reasoning and proof in a concrete and intuitive way and is necessary preparation for any future course in upper-level college mathematics or theoretical computer science. We progressively develop the tools needed to understand the RSA algorithm, the most common encryption scheme used worldwide. Along the way we invent some encryption schemes of our own and discover how to play games using number theory. We also get a taste of the history of the subject, which involves the most famous mathematicians from antiquity to the present day, and we see parts of the story of Fermat's Last Theorem, a 350-year-old statement that was fully proven only twenty years ago. While most calculations will be simple enough to do by hand, we will sometimes use the computer to see how the fundamental ideas can be applied to the huge numbers needed for modern applications. *Prerequisite: A strong background in precalculus and above, as well as a desire to do rigorous mathematics and proofs.*

MATHEMATICS AND TECHNOLOGY – SEMESTER 1

(NEW!) CYBER SECURITY: Cyber criminals leverage technology and human behavior to attack our online security. This course explores the fundamentals of and vulnerabilities in the design of computers, networks, and the internet. Course content includes the basics of computer components, connectivity, virtualization, and hardening. Students will learn about network design, Domain Name Services, and TCP/IP. They will understand switching, routing and access control for internet devices, and how denial of service, spoofing and flood attacks work. Basic programming introduced in the course will inform hashing strategies, while an introduction to ciphers and cryptography will show how shared-key encryption works for HTTPS and TLS traffic. Students will also explore the fundamentals of data forensics and incident response protocols. The course includes analysis of current threats and best practice modelling for cyber defense, including password complexity, security, management, breach analysis, and hash cracking. Computational thinking and programming skills developed in this course will help students solve a variety of cyber security issues. *There is no computer science prerequisite for this course*, though students with some background will certainly find avenues to flex their knowledge in this course.

(NEW!) DATA VISUALIZATION* : Through today's fog of overwhelming data, visualizations provide meaning. This course trains students to collect, organize, interpret, and communicate massive amounts of information. Students will begin wrangling data into spreadsheets, learning the basic ways professionals translate information into comprehensible formats. They will explore charts, distinguishing between effective and misleading visualizations. Employing principles from information graphics, graphic design, visual art, and cognitive science, students will then create their own stunning and informative visualizations. From spreadsheets to graphics, students in this course will practice the crucial skills of using data to decide, inform, and convince. *There is no computer science, math or statistics prerequisite for this course*, though students with backgrounds in those areas will certainly find avenues to flex their knowledge in this course.

PROBLEM SOLVING WITH ENGINEERING AND DESIGN*: This course investigates various topics in science, technology, engineering, and mathematics using a series of projects and problems that are both meaningful and relevant to the students' lives. Students will develop engineering skills, including design principles, modeling, and presentations, using a variety of computer hardware and software applications to complete assignments and projects. This is a course that focuses on practical applications of science and mathematics to solve real-world issues. Project based learning, working in collaborative teams, and designing prototypes are essential components of the course. Throughout the program, students step into the varied roles engineers play in our society, solve problems in their homes and communities, discover new career paths and possibilities, and develop engineering knowledge and skills. There are no particular math or science prerequisites for this course, just an interest in using STEM to solve problems and a desire to learn!

MATHEMATICS AND TECHNOLOGY – SEMESTER 2

COMPUTER SCIENCE II: GAME DESIGN AND DEVELOPMENT*: In this course, students design and develop games through hands-on practice. Comprised of a series of "game jams," the course asks students to solve problems and create content, developing the design and technical skills necessary to build their own games. The first month of the course is dedicated to understanding game design through game designer Jesse Schell's "lenses": different ways of looking at the same problem and answering questions that provide direction and refinement of a game's theme and structure. During this time, students also learn how to use Unity, a professional game development tool, and become familiar with the methodologies of constructing a game using such assets as graphics, sounds, and effects, and controlling events and behavior within the game using the C# programming language. Throughout the remainder of the course, students will work in teams to brainstorm and develop new games in response to a theme or challenge. Students will develop their skills in communication, project and time management, and creative problem-solving while focusing on different aspects of asset creation, design, and coding. *Prerequisites: Computer Science I: Computational Thinking or its equivalent.*

COMPUTER SCIENCE II: JAVA: This course teaches students how to write programs in the Java programming language. Java is the backbone of many web applications, especially eCommerce and government sites. It is also the foundational code of the Android operating system and many tools of the financial sector. Students learn the major syntactical elements of the Java language through object-oriented design. The emphasis in the course will be on creating intelligent systems through the fundamentals of Computer Science. Students will write working programs through short lab assignments and more extended projects that incorporate graphics and animation. *Prerequisite: Computer Science I: Computational Thinking or its equivalent.*

COMPUTER SCIENCE II: PYTHON: In this course, students utilize the Python programming language to read, analyze, and visualize data. The course emphasizes using real-world datasets, which are often large, messy, and inconsistent. Because of the powerful data structures and clear syntax of Python, it is one of the most widely used programming languages in scientific computing. Students explore the multitude of practical applications of Python in fields like biology, engineering, and statistics. *Prerequisite: Computer Science I: Computational Thinking or its equivalent.*

iOS APP DESIGN*: Learn how to design and build apps for the iPhone and iPad and prepare to publish them in the App Store. Students will work much like a small startup: collaborating as a team, sharing designs, and learning to communicate with each other throughout the course. Students will learn the valuable skills of creativity, collaboration, and communication as they create something amazing, challenging, and worthwhile. Coding experience is NOT required and does not play a significant role in this course. *Prerequisite: For this course, it is required that students have access to a computer running the most current Mac or Windows operating system. An iOS device that can run apps (iPod Touch, iPhone, or iPad) is also highly recommended.*

SCIENCE AND HEALTH - OFFERED IN SEMESTERS 1 AND 2

ABNORMAL PSYCHOLOGY: This course focuses on psychiatric disorders such as schizophrenia, eating disorders, anxiety disorders, substance abuse, and depression. While students examine these and other disorders, they will learn about the symptoms, diagnoses, and treatments. Students will also deepen their understanding of the social stigmas associated with mental illnesses. This course may be taken as a continuation of Introduction to Psychology, although doing so is not required.

BIOETHICS: Ethics is the study of what one should do as an individual and as a member of society. Bioethics refers to the subset of this field that focuses on medicine, public health, and the life sciences. In this course, students explore contemporary, pressing issues in bioethics, including the “right to die, policies around vaccination and organ transplantation, competence to consent to care, human experimentation and animal research, and genetic technologies. Through reading, writing, research, and discussion, students will explore the fundamental concepts and questions in bioethics, deepen their understanding of biological concepts, strengthen their critical-reasoning skills, and learn to engage in respectful dialogue with people whose views may differ from their own. The course culminates with a student-driven exploration into a particular bioethical issue, recognizing the unique role that bioethics plays within the field of ethics.

INTRODUCTION TO PSYCHOLOGY: What does it mean to think like a psychologist? In Introduction to Psychology, students explore three central psychological perspectives—the behavioral, the cognitive, and the sociocultural—in order to develop a multi-faceted understanding of what thinking like a psychologist encompasses. The additional question of “How do psychologists put what they know into practice?” informs study of the research methods in psychology, the ethics surrounding them, and the application of those methods to practice. During the first five units of the course, students gather essential information that they apply during a group project on the unique characteristics of adolescent psychology. Students similarly envision a case study on depression, which enables application of understandings from the first five units. The course concludes with a unit on positive psychology, which features current positive psychology research on living mentally healthy lives. Throughout the course, students collaborate on a variety of activities and assessments, which often enable learning about each other’s unique perspectives while building their research and critical thinking skills in service of understanding the complex field of psychology.

MEDICAL PROBLEM SOLVING I: In this course, students collaboratively solve medical mystery cases, similar to the approach used in many medical schools. Students enhance their critical thinking skills as they examine data, draw conclusions, diagnose, and identify appropriate treatment for patients. Students use problem-solving techniques in order to understand and appreciate relevant medical/biological facts as they confront the principles and practices of medicine. Students explore anatomy and physiology pertaining to medical scenarios and gain an understanding of the disease process, demographics of disease, and pharmacology. Additional learning experiences include studying current issues in health and medicine, building a community-service action plan, interviewing a patient, and creating a new mystery case.

NEUROPSYCHOLOGY: This course is an exploration of the neurological basis of behavior. It covers basic brain anatomy and function as well as cognitive and behavioral disorders from a neurobiological perspective. Additionally, students explore current neuroscience research as well as the process of funding that research. Examples of illnesses that may be covered include: Alzheimer's disease, traumatic brain injury, and stroke. In addition, we explore diagnostic and treatment issues (including behavioral and pharmaceutical management) as well as attention, learning, memory, sleep, consciousness and emotional intelligence. Students conclude the course by developing a fundraising campaign to support research and/or patient care initiatives related to a specific neurological condition and nonprofit foundation.

POSITIVE PSYCHOLOGY: What is a meaningful, happy, and fulfilling life? The focus of psychology has long been the study of human suffering, diagnosis, and pathology, but in recent years, however, positive psychologists have explored what's missing from the mental health equation, taking up research on topics such as love, creativity, humor, and mindfulness. In this course, we will dive into what positive psychology research tells us about the formula for a meaningful life, the ingredients of fulfilling relationships, and changes that occur in the brain when inspired by music, visual art, physical activity, and more. We will also seek out and lean on knowledge from positive psychology research and experts, such as Martin Seligman's well being theory, Mihaly Csikszentmihalyi's idea of flow, and Angela Lee Duckworth's concept of grit. In exploring such theories and concepts, students will imagine and create real-world measurements using themselves and willing peers and family members as research subjects. As part of the learning studio format of the course, students will also imagine, research, design, and create projects that they will share with a larger community. Throughout the development of these projects, students will collaborate with each other and seek ways to make their work experiential and hands-on. Students will leave the class with not only some answers to the question of what makes life meaningful, happy, and fulfilling, but also the inspiration to continue responding to this question for many years to come.

SOCIAL PSYCHOLOGY: Are you thinking and acting freely of your own accord or is what you think, feel, and do a result of influences by the people around you? Social psychology is the scientific study of how and why the actual, imagined, or implied presence of others influences our thoughts, feelings, and behavior. The principles of social psychology help explain everything from why we stop at stop signs when there is no one around to why we buy certain products, why in some situations we help others and in some we don't, and what leads to more dramatic (and catastrophic) events such as mass suicides or extreme prejudice and discrimination. As we take up these topics and questions, students will build and engage in a community of inquiry, aimed primarily at learning how to analyze human behavior through the lens of a social psychologist. Social Psychology invites students to explore, plan, investigate, experiment, and apply concepts of prejudice, persuasion, conformity, altruism, relationships and groups, and the self that bring the "social" to psychology. The course culminates in a public exhibition of a student-designed investigation of a social psychological topic of their choice. This course uses a competency-based learning approach in which students build GOA core competencies that transcend the discipline and learn how to think like a social psychologist. Much of the course is self-paced; throughout the semester, students are assessed solely in relation to outcomes tied to the competencies.

SCIENCE AND HEALTH - SEMESTER 1

GLOBAL HEALTH: What makes people sick? What social and political factors lead to the health disparities we see both within our own communities and on a global scale? What are the biggest challenges in global health and how might they be met? Using an interdisciplinary approach to address these questions, this course improves students' health literacy through an examination of the most significant public-health challenges facing today's global population. Topics addressed include the biology of infectious disease, the statistics and quantitative measures associated with health issues, the social determinants of health, and the role of organizations (public and private) in shaping the landscape of global health policy. Throughout the course, students use illness as a lens through which to critically examine such social issues as poverty, gender, and race. Student work includes analytical writing, research and curating sources around particular topics, readings and discussions exploring a variety of sources, and online presentations, created both on their own and with peers.

PROBLEM SOLVING WITH ENGINEERING AND DESIGN*: This course investigates various topics in science, technology, engineering, and mathematics using a series of projects and problems that are both meaningful and relevant to the students' lives. Students will develop engineering skills, including design principles, modeling, and presentations, using a variety of computer hardware and software applications to complete assignments and projects. This is a course that focuses on practical applications of science and mathematics to solve real-world issues. Project based learning, working in collaborative teams, and designing prototypes are essential components of the course. Throughout the program, students step into the varied roles engineers play in our society, solve problems in their homes and communities, discover new career paths and possibilities, and develop engineering knowledge and skills. There are no particular math or science prerequisites for this course, just an interest in using STEM to solve problems and a desire to learn!

SCIENCE AND HEALTH - SEMESTER 2

MEDICAL PROBLEM SOLVING II: Medical Problem Solving II is an extension of the problem-based approach in Medical Problem Solving I. While collaborative examination of medical case studies remain at the center of the course, MPSII approaches medical cases through the perspectives of global medicine, medical ethics, and social justice. The course examines cases not only from around the world but also in students' local communities. Additionally, the course addresses the challenges patients face because of a lack of access to health care, often a result of systemic discrimination and inequity along with more general variability of health care resources in different parts of the world. All students in MPS II participate in the Catalyst Conference, a GOA-wide conference near the end of the semester where students from many GOA courses create and publish presentations on course-specific topics. For their projects, students use all of the lenses from the earlier parts of the course to choose and research a local topic of high interest. Further, their topics enable identifying a local medical problem, using local sources, and generating ideas for promoting change. *Prerequisite: Medical Problem Solving I.*

SOCIAL SCIENCES - OFFERED IN SEMESTERS 1 AND 2

CLIMATE CHANGE AND GLOBAL INEQUALITY: Nowhere is the face of global inequality more obvious than in climate change, where stories of climate-driven tragedies and the populations hit hardest by these disasters surface in every news cycle. In this course, students will interrogate the causes and effects of climate change, and the public policy debates surrounding it. In case studies, we will research global, regional, and local policies and practices along with the choices of decision makers and what they mean to the populations they serve. Who benefits, who suffers, and how might we change this equation? Following the Learning Studio model, in the second half of the course, students will work with their teacher to design their own independent projects reflecting their individual interests and passions. We will collaborate in workshops with classmates to deepen our collective understanding of the complex issues surrounding climate change. Throughout the semester, we will also build and curate a library of resources and share findings in varied media, engaging as both consumers and activists to increase knowledge and advocate for sustainable norms. Finally, students will have the opportunity to reach a global audience by participating in GOA's Catalyst Conference in the spring 2019, as they present their individual projects to spark change in local communities through well-informed activism.

INTERNATIONAL RELATIONS: Are China and the U.S. on a collision course for war? Can the Israelis and Palestinians find a two-state solution in the holy land? Will North Korea launch a nuclear weapon? Can India and Pakistan share the subcontinent in peace? These questions dominate global headlines and our daily news feeds. In this course, you will go beyond the soundbites and menacing headlines to explore the context, causes, and consequences of the most pressing global issues of our time. Through case studies, you will explore the dynamics of international relations and the complex interplay of war and peace, conflict and cooperation, and security and human rights. Working with classmates from around the world, you will also identify and model ways to prevent, mediate, and resolve some of the most pressing global conflicts.

INTRODUCTION TO INVESTMENTS: In this course, students simulate the work of investors by working with the tools, theories, and decision-making practices that define smart investment. We explore concepts in finance and apply them to investment decisions in three primary contexts: portfolio management, venture capital, and social investing. After an introduction to theories about valuation and risk management, students simulate scenarios in which they must make decisions to grow an investment portfolio. They manage investments in stocks, bonds, and options to learn a range of strategies for increasing the value of their portfolios. In the second unit, students take the perspective of venture capital investors, analyzing startup companies and predicting their value before they become public. In the third unit, students examine case studies of investment funds that apply the tools of finance to power social change. Throughout the course, students learn from experts who have experience in identifying value and managing risk in global markets. They develop their own ideas about methods for taking calculated financial risks and leave this course not just with a simulated portfolio of investments, but the skills necessary to manage portfolios in the future.

INTRODUCTION TO LEGAL THINKING: Inspired by GOA's popular Medical Problem Solving series, this course uses a case-based approach to give students a practical look into the professional lives of lawyers and legal thinking. By studying and debating a series of real legal cases, students will sharpen their ability to think like lawyers who research, write and speak persuasively. The course will focus on problems that lawyers encounter in daily practice, and on the rules of professional conduct case law. In addition to practicing writing legal briefs, advising fictional clients and preparing opening and closing statements for trial, students will approach such questions as the law and equity, the concept of justice, jurisprudence and legal ethics.

PRISONS AND THE CRIMINAL LAW: Criminal courts in the United States have engaged in an extraordinary social experiment over the last 40 years: they have more than quintupled America's use of prisons and jails. Has this experiment with "mass incarceration" produced more negative effects than good? Is it possible at this point to reverse the experiment without doing even more harm? In this course, students become familiar with the legal rules and institutions that determine who goes to prison and for how long. Along the way, students gain a concrete, practical understanding of legal communication and reasoning while grappling with mass incarceration as a legal, ethical, and practical issue. In an effort to understand our current scheme of criminal punishments and to imagine potential changes in the system, we immerse ourselves in the different forms of rhetoric and persuasion that brought us to this place: we read and analyze the jury arguments, courtroom motions, news op-eds, and other forms of public persuasion that lawyers and judges create in real-world criminal cases. Topics include the history and social functions of prisons; the definition of conduct that society will punish as a crime; the work of prosecutors, defense attorneys, and judges in criminal courts to resolve criminal charges through trials and plea bargains; the sentencing rules that determine what happens to people after a conviction; the alternatives to prison when selecting criminal punishments; and the advocacy strategies of groups hoping to change mass incarceration. The reading focuses on criminal justice in the United States, but the course materials also compare the levels of imprisonment used in justice systems around the world. Assignments will ask students to practice with legal reasoning and communication styles, focused on specialized audiences such as juries, trial judges, appellate judges, sentencing commissions, and legislatures. The work will involve legal research, written legal argumentation, peer collaboration, and oral advocacy.

Note: This course is offered through Wake Forest University School of Law and is designed by Ronald Wright, the Needham Y. Gulley Professor of Criminal Law. Prof. Wright is also part of the teaching team for this course. Students who take this course should expect a college-level workload (8-10 hours a week). Successful completion of this course will be rewarded with a certificate from the law school.

SOCIAL SCIENCES - SEMESTER 1

APPLYING PHILOSOPHY TO GLOBAL ISSUES: This is an applied philosophy course that connects pressing contemporary issues with broad-range philosophical ideas and controversies, drawn from multiple traditions and many centuries. Students use ideas from influential philosophers to examine how thinkers have applied reason successfully, and unsuccessfully, to many social and political issues across the world. In addition to introducing students to the work of philosophers as diverse as Socrates, Confucius, and Immanuel Kant, this course also aims to be richly interdisciplinary, incorporating models and methods from diverse fields including history, journalism, literary criticism, and media studies. Students learn to develop their own philosophy and then apply it to the ideological debates that surround efforts to improve their local and global communities.

BUSINESS PROBLEM SOLVING: How could climate change disrupt your production and supply chains or impact your consumer markets? Will tariffs help or hurt your business? How embedded is social media in your marketing plan? Is your company vulnerable to cybercrime? What 21st century skills are you cultivating in your leadership team? Students in this course will tackle real-world problems facing businesses large and small in today's fast changing global marketplace where radical reinvention is on the minds of many business leaders. Students will work collaboratively and independently on case studies, exploring business issues through varied lenses including operations, marketing, human capital, finance and risk management as well as sustainability. As they are introduced to the concepts and practices of business, students will identify, analyze and propose solutions to business problems, engaging in research of traditional and emerging industries, from established multinationals to startups.

MICROECONOMICS: In this course, students learn about how consumers and producers interact to form a market and then how and why the government may intervene in that market. Students deepen their understanding of basic microeconomic theory through class discussion and debate, problem solving, and written reflection. Students visit a local production site and write a report using the market principles they have learned. Economic ways of thinking about the world will help them better understand their roles as consumers and workers, and someday, as voters and producers.

(NEW!) PERSONAL FINANCE: In this course, students learn financial responsibility and social consciousness. We will examine a wide array of topics including personal budgeting, credit cards and credit scores, career and earning potential, insurance, real estate, financial investment, retirement savings, charitable giving, taxes, and other items related to personal finance. Students will apply their understanding of these topics by simulating real life financial circumstances and weighing the costs and benefits of their decisions. Throughout the course, students will have the opportunity to learn from individuals with varying perspectives and expertise in numerous fields. By reflecting on their roles in the broader economy as both producers and consumers, students will begin to consider how they can positively impact the world around them through their financial decisions.

RACE & SOCIETY: What is race? Is it something we're born with? Is it an idea that society imposes on us? An identity we perform? A beneficial privilege? Does our own culture's conception of race mirror those found in other parts of the world? These are just a few of the questions that students in this course will explore together as they approach the concept of race as a social construct that shapes and is shaped by societies and cultures in very real ways. Throughout the course, students will learn about the changing relationship between race and society across time and across cultures. Engaging with readings, films, and speakers from a variety of academic fields (history, sociology, anthropology, literature) students will explore, research, reflect on and discuss the complex set of relationships governing race and society.

SOCIAL SCIENCES - SEMESTER 1

9/11 IN A GLOBAL CONTEXT: The tragedy of September 11, 2001 changed the world in profound ways. In this course, students explore the causes of 9/11, the events of the day itself, and its aftermath locally, nationally, and around the world. In place of a standard chronological framework, students instead view these events through a series of separate lenses. Each lens represents a different way to view the attacks and allows students to understand 9/11 as an event with complex and interrelated causes and outcomes. Using a variety of technologies and activities, students work individually and with peers to evaluate each lens. Students then analyze the post-9/11 period and explore how this event affected the U.S., the Middle East, and the wider world.

ENTREPRENEURSHIP IN A GLOBAL CONTEXT: How does an entrepreneur think? What skills must entrepreneurs possess to remain competitive and relevant? What are some of the strategies that entrepreneurs apply to solve problems? In this experiential course, students develop an understanding of entrepreneurship in today's global market; employ innovation, design, and creative solutions for building a viable business model; and learn to develop, refine, and pitch a new startup. Units of study include Business Model Canvas, Customer Development vs. Design Thinking, Value Proposition, Customer Segments, Iterations & Pivots, Brand Strategy & Channels, and Funding Sources. Students use the Business Model Canvas as a roadmap to building and developing their own team startup, a process that requires hypothesis testing, customer research conducted in hometown markets, product design, product iterations, and entrepreneur interviews. An online startup pitch by the student team to an entrepreneurial advisory committee is the culminating assessment. Additional student work includes research, journaling, interviews, peer collaboration, and a case study involving real-world consulting work for a current business.

GENDER & SOCIETY: This course uses the concept of gender to examine a range of topics and disciplines that include feminism, gay and lesbian studies, women's studies, popular culture, and politics. Throughout the course, students examine the intersection of gender with other social identifiers: class, race, sexual orientation, culture, and ethnicity. Students read about, write about, and discuss gender issues as they simultaneously reflect on the ways that gender has manifested in and influenced their lives.

GENOCIDE AND HUMAN RIGHTS: Students in this course study several of the major 20th century genocides (Armenian, the Holocaust, Cambodian, and Rwandan), analyze the role of the international community in responding to and preventing further genocide (with particular attention to the Nuremberg tribunals), and examine current human rights crises around the world. Students read primary and secondary sources, participate in both synchronous and asynchronous discussions with classmates, write brief papers, read short novels, watch documentaries, and develop a human rights report card website about a nation of their choice.

MACROECONOMICS: Macroeconomics is the study of economic units as a whole rather than of their individual components. The aggregate unit is usually a national economy and that will be our focus in this course. Students will learn to better understand how to measure national economic activity with concepts like gross domestic product, unemployment and inflation and the strengths and weaknesses of these statistics. Students will then study theoretical methods of influencing national economic activity with monetary and fiscal policy and will learn about some of the controversy surrounding these policy tools. The advantages and disadvantages of international trade and of methods of setting exchange rates will also be introduced. The course will include an individual student investigation of a national economy other than their home country. Students will identify their economic findings and present resolutions in their final report.