Brunswick School
and
Greenwich Academy

Course Catalogue
2022 – 2023

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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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.

9TH GRADE	10TH GRADE	11TH GRADE	12TH 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
Engineering and Computer Science (GA)	76620	AP Computer Science Principles	Full Year - page 47
	76617	Introduction to Computer Science: Science + Code (f)	Fall Semester - page 45
	76618	Introduction to Computer Science: Science + Code (s)	Spring Semester - page 46
English	14120	English XII: Philosophy and Literature	Full Year - page 10
	14122	English XII: Revolutionary Joy	Full Year - page 10
General Electives	36476	Introduction to Journalism (f)	Fall Semester - page 2
History and Social Sciences	33100	Case Study Methods: Turning Points in American History (f)	Fall Semester - page 17
	38501	History of Warfare: Development of Linear Warfare 1700-1918 CE (f)	Fall Semester - page 18
	38504	The Birth of Modern Warfare 1918-Present CE (s)	Spring Semester - page 21
	38503	The Global Cold War (s)	Spring Semester - page 21
	38482	The History of Race & Science (s)	Spring Semester - page 22
	38502	The World at War (f)	Fall Semester - page 19
Mathematics (GA)	26431	Honors Seminar: Linear Algebra (f)	Fall Semester - page 38
	26432	Honors Seminar: Modern Algebra (s)	Spring Semester - page 38
	26430	Honors Seminar: Multivariable Differential Calculus (f)	Fall Semester - page 38
	26433	Honors Seminar: Multivariable Integral Calculus (s)	Spring Semester - page 39
Mathematics (BR)	28504	Honors Math: Real Analysis	Full Year - page 32
Science	58044	Principles of Geology (f)	Fall Semester - page 54
	58045	Principles of Geology (s)	Spring Semester - page 56
	38482	The History of Race & Science (s)	Spring Semester - page 57
Visual Arts	66407	Honors Ceramics III: Voice (GA)	Full Year - page 81
World Languages	44511	Diversity in Francophone Cultures within France (s)	Spring Semester - page 66
	44510	Exploring French Across the Globe (f)	Fall Semester - page 66

ONE-SEMESTER COURSES

	ID #	FALL	ID #	SPRING
Computer Science (BWK)	78601	CS-101: Introduction to Computer Science (f)	78602	CS-101: Introduction to Computer Science (s)
	78618	CS-102: Make and learn: Physical Computing (f)	78616	CS-102: Make and learn: Physical Computing (s)
	78619	CS-103: Web Design and Development (f)	78617	CS-103: Web Design and Development (s)
	78610	STEAM-101: The Coding Palette (f)	78611	STEAM-101: The Coding Palette (s)
Engineering and Computer Science (GA)	76615	Introduction to Computer Science: Art + Code (f)	76616	Introduction to Computer Science: Art + Code (s)
	76617	Introduction to Computer Science: Science + Code (f)	76618	Introduction to Computer Science: Science + Code (s)
General Electives	36404	American Film (f)	36450	American Film & Beyond (s)
	39050	Great Speeches (f)	39051	Persuasive Writing (s)
	38412	Impact of Technology: An Economic Perspective (f)		
	36476	Introduction to Journalism (f)		
	38416	War, Literature & Popular Culture (f)		
History and Social Sciences	38478	Abnormal Psychology (f)	36472	Behavioral Economics (s)
	33100	Case Study Methods: Turning Points (f)	38477	Cognitive Psychology (s)
	36469	Criminal Justice (f)	39041	Debate (s)
	38404	Economics: Entrepreneurship (f)	38043	Economics: Personal Finance (s)
	38501	History of Warfare: Development of Linear Warfare 1700-1918 CE (f)	38422	Environmental History (s)
	36471	Everyday Economics (f)	38425	Leaders, Leadership, and Strategy (s)
	36413	Modern Middle East (f)	38431	Racial Struggle on Film (s)
	38430	Race and Cinema in Modern America (f)	38504	The Birth of Modern Warfare 1918-Present CE (s)
	38479	Sport Psychology (f)	38503	The Global Cold War (s)
	38502	The World at War (f)	38482	The History of Race & Science (s)
Mathematics (GA)	26430	Honors Seminar: Multivariable Differential Calculus (f)	26433	Honors Seminar: Multivariable Integral Calculus (s)
	26431	Honors Seminar: Linear Algebra (f)	26432	Honors Seminar: Modern Algebra (s)
Science	38478	Biology of Human Health (f)	58173	Astrophysics (s)
	58036	Culinary Science I (f)	56042	Culinary Science II (s)
	56041	Engineering & Robotics I (f)	58040	Engineering & Robotics II (s)
	58039	Human Physiology I (f)	58042	Environmental Science and Sustainability (s)
	58030	Impact of Technology: An Economic Perspective (f)	58033	Forensic Science & Investigation (s)
	38412	Principles of Geology (f)	58031	Human Physiology II (s)
	58044	Marine Biology (f)	58045	Principles of Geology (s)
			38482	The History of Race & Science (s)
Visual and Performing Arts	36404	American Film (f)	36450	American Film & Beyond (s)
	68144	Architectural Space & Design Elements I (f)	68146	Architectural Space & Design Elements II (s)
	68143	Architecture & Design I (f)	68145	Architecture & Design II (s)
	68147	Art and Design I (f)	68148	Art and Design I (s)
	66630	Introduction to Drawing (f)	66631	Intermediate Drawing (s)
	78610	STEAM-101: The Coding Palette (f)	78611	STEAM-101: The Coding Palette (s)
World Languages and Classics	45801	Classical Culture and History (f)	45802	Classical Culture and History(f)
	43505	Espanol en Vivo: Spanish in the Community (f)	44511	Diversity in Francophone Culture within France (s)
	44510	Exploring French Across the Globe (f)	43506	Espanol de Negocios: Business Spanish (s)
	43521	Spanish Language & Culture thru Perf. Arts (f)	43520	Hispanos en el Caribe (s)
	38416	War, Literature & Popular Culture (f)		

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Abnormal Psychology (f)	38478	History	27
Accelerated Algebra II with Trigonometry	28205	Math BWK	30
Accelerated Geometry	28101	Math BWK	29
Accelerated Precalculus	28301	Math BWK	31
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Algebra I	26010	Math GA	34
Algebra II	26200	Math GA	35
Algebra II Accelerated	26201	Math GA	35
Algebra II with Trigonometry	28200	Math BWK	30
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American Film: Big Screen Cultural Reflections (f)	36404	Arts + General Electives	86, 3
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AP Biology	51070	Science	50
AP Calculus AB	28407	Math BWK	32
AP Calculus AB	26407	Math GA	36
AP Calculus BC	28417	Math BWK	32
AP Calculus BC	26417	Math GA	37
AP Chemistry	52070	Science	51
AP Chinese Language & Culture - Expedition Course	47603	Language	63
AP Chinese Language and Culture	47602	Language	62
AP Comparative Government & Politics	36420	History	14
AP Computer Science A	76600	Eng & CompSci - GA	47
AP Computer Science Principles	76620	Eng & CompSci - GA	47
AP Economics	38407	History	24
AP English Literature and Composition (BR)	13010	English	5
AP Environmental Science	58178	Science	51
AP European History	32007	History	14
AP French Language & Culture	44607	Language	65
AP Human Geography	36419	History	15
AP Italian Language & Culture	42500	Language	68
AP Latin	45602	Classics	74
AP Music Theory	66445	Arts	91
AP Physics 1	58171	Science	51
AP Physics 2	58172	Science	51
AP Physics C	58170	Science	52
AP Psychology	38867	History	27
AP Spanish Language & Culture	43507	Language	71
AP Spanish Literature & Culture	43517	Language	71
AP Statistics	28427	Math BWK	33
AP Statistics	26427	Math GA	37
AP Statistics Y	26428	Math GA	37
AP Studio Art: 2-D Design Portfolio (BR)	68505	Arts	79
AP Studio Art: 2-D Design Portfolio (GA)	66490	Arts	79
AP Studio Art: 3-D Design Portfolio (GA)	66489	Arts	80
AP Studio Art: Drawing Portfolio (BR)	68500	Arts	79
AP Studio Art: Drawing Portfolio (GA)	66500	Arts	80
AP Studio: 3-D Design Portfolio (BR)	68510	Arts	80
AP United States Government & Politics	38417	History	15
AP United States History	33070	History	15
AP World History	38418	History	16
Arabic I	49100	Language	59
Arabic II	49200	Language	59

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Arabic IV	49400	Language	60
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Architectural Space & Design Elements II (s)	68146	Arts	86
Architecture & Design I (f)	68143	Arts	84
Architecture & Design II (s)	68145	Arts	86
Art and Design I (f)	68147	Arts	84
Art and Design I (s)	68148	Arts	87
Art I	61000	Arts	78
Astrophysics (s)	58173	Science	55
Band I	68352	Arts	88
Behavioral Economics (s)	36472	History	26
Bel Canto	66100	Arts	91
Biology	51000	Science	49
Biology of Human Health (f)	58036	Science	53
Calculus	28405	Math BWK	31
Calculus	26404	Math GA	36
Case Study Methods: Turning Points in American History (f)	33100	History	17
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Chemistry	52000	Science	49
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Chinese II	47200	Language	61
Chinese III	47300	Language	61
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Classical Culture & History (f)	45801	Classics	75
Classical Culture & History (s)	45802	Classics	76
Cognitive Psychology (s)	38477	History	28
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Costume Design I	66411	Arts	93
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CS-101: Introduction to Computer Science (f)	78601	CompSci - BWK	40
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CS-102: Make and learn: Physical Computing (f)	78618	CompSci - BWK	40
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CS-103: Web Design and Development (s)	78617	CompSci - BWK	42
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CS-301: Advanced Honors Seminar: Data Science & Machine Learning	78607	CompSci - BWK	44
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Culinary Science II (s)	56042	Science	55
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Eng XII: Revolutionary Joy	14122	English	10
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Engineering and Robotics I (f)	58039	Science	53
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English IX (GA)	11006	English	4
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English XI	13000	English	5
Environmental History (s)	38422	History	20
Environmental Science and Sustainability (s)	58042	Science	56
Español de negocios—Business Spanish (s)	43506	Language	72
Español en vivo—Spanish in the Community (f)	43505	Language	71
Everyday Economics (f)	36471	History	25
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French II	44201	Language	64
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Geometry	26100	Math GA	34
Geometry Accelerated	26101	Math GA	34
Gospel Choir	66201	Arts	90
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Greek III	45703	Classics	77
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Honors Arabic II	49201	Language	59
Honors Arabic III	49301	Language	60
Honors Arabic IV	49401	Language	60
Honors Art II	68400	Arts	78
Honors Band II	68353	Arts	89
Honors Biology	51020	Science	49
Honors Ceramics II: Ceramic Sculpture (BR)	68142	Arts	81
Honors Ceramics II: Skills (GA)	66402	Arts	81
Honors Ceramics II: Voice (GA)	66407	Arts	81
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Honors French III	44301	Language	65
Honors French IV	44402	Language	65
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Honors Geometry	26102	Math GA	34
Honors Greek II	45704	Classics	77
Honors Greek III	45705	Classics	77
Honors Guitar II	68249	Arts	89
Honors Italian II	42201	Language	67
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Honors Italian IV	42401	Language	68
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Honors Math: Multivariable Calculus	28501	Math BWK	32
Honors Math: Real Analysis	28504	Math BWK	32
Honors Music Improv I	68157	Arts	89
Honors Music Improv II	68357	Arts	89
Honors Physics	53020	Science	50
Honors Playwriting & Directing	66424	Arts	92
Honors PreCalculus	28302	Math BWK	31
Honors Precalculus	26303	Math GA	36
Honors Recording Studio II	68254	Arts	89
Honors Science Research - Brunswick School	59100	Science	52
Honors Seminar: Engineering & Computer Science	76602	Eng & CompSci - GA	48
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Honors Seminar: French Studies	44617	Language	65
Honors Seminar: Humanities and Social Science Research	36424	History	23
Honors Seminar: Latin Studies	45505	Classics	74
Honors Seminar: Linear Algebra (f)	26431	Math GA	38
Honors Seminar: Modern Algebra (s)	26432	Math GA	38
Honors Seminar: Multivariable Diffential Calculus (f)	26430	Math GA	38
Honors Seminar: Multivariable Integral Calculus (s)	26433	Math GA	39
Honors Seminar: Open Art Studio (GA)	66602	Arts	79
Honors Seminar: Science Research (GA)	56037	Science	52
Honors Spanish II	43201	Language	69
Honors Spanish III	43301	Language	70
Honors Spanish IV	43402	Language	70
Human Physiology I (f)	58030	Science	53
Human Physiology II (s)	58031	Science	56
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Italian III	42300	Language	67
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Latin II	45200	Classics	73
Latin III	45300	Classics	74
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Leaders, Leadership, and Strategy (s)	38425	History	20
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PreCalculus	26300	Math GA	35
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Principles of Geology (s)	58045	Science	56
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Racial Struggle on Film (s)	38431	History	21
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Spanish II	43200	Language	69
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Spanish Language and Culture through the Performing Arts (f)	43521	Language	71
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The Blue Notes	68351	Arts	90
The Global Cold War (s)	38503	History	21
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The World at War (f)	38502	History	19
Theatrical Design and Stage Craft I	68421	Arts	93
Theatrical Design and Stage Craft II	68423	Arts	93

GENERAL ELECTIVES

The courses listed below are developed from the traditional disciplines of Art, English, Classics, History, World Languages, Math and Science. Although these courses do not satisfy any particular department's graduation requirements, they do count as full academic classes and may well be cross-listed, within a relevant department, on the following pages.

FALL SEMESTER COURSES

American Film: Big Screen Cultural Reflections (f)

36404
Grade Level: 10th - 12th
Prerequisite: None

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.

Great Speeches (f)

39050
Grade Level: 10th - 12th
Prerequisite: None

Great oratory has often served both as a motor for change and an articulation of cultural values and aspirations. Be it John F. Kennedy's Inaugural Address or Margaret Chase Smith's plea for decency on the floor of the Senate in 1950, speaking to persuade incentivizes, inspires, and influences. This course will closely examine a set of important addresses delivered over the past 100 years. Students will examine the context, circumstances, and content of each speech examining tone, intent, and major message. Some examples of coverage may include addresses delivered by Franklin Roosevelt, Margaret Sanger, Steve Jobs, Elizabeth Glaser, Nelson Mandela and Jon Stewart. Access to materials will be textual, audio-visual, and digital. Students will also be asked to write their own persuasive address on a topic of their choice.

Impact of Technology: An Economic Perspective (f)

38412
Grade Level: 10th - 12th
Prerequisite: None

Technology advances drive commercial growth in the global economy. This course begins with a brief historical review of how major technological advances have shaped our economy. Each student will explore the impact of one of these advances in depth (examples range from the microprocessor to modern steel production).

A substantial majority of the course looks forward in time. Many future technology advances are likely to have a disruptive impact on the present economic environment. 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. Future technologies of interest include augmented reality, big data in a commercial setting, and various aspects of artificial intelligence. The class will engage in formal and vigorous debate on a number of relevant topics.

Introduction to Journalism (f)

36476
Grade Level: 10th – 12th
Prerequisite: None

Journalism has transformed into an interdisciplinary endeavor. Writers produce content for digital and print media, news articles are translated into video, and social media has altered how audiences consume news. This elective will introduce students to the various career opportunities in this multifaceted industry. Over the semester, students will grow their creative and critical thinking skills, assess the news value of an event or situation, and develop their own story ideas. Projects will range from co-producing a podcast, designing a spread for the yearbook, writing articles for school newspapers, and directing and producing a broadcast news segment. By the end of the course, students will gain the ability to put together a story in a variety of formats. This course will utilize skills gained in previous English, Art and Film classes and will be co-taught by two faculty members. Projects will be both independent and collaborative and students will be assessed on their writing and creativity. What stories do you want to tell?

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

American Film and Beyond (s)

36450
Grade Level: 10th - 12th
Prerequisite: None

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.

Persuasive Writing (s)

39051
Grade Level: 10th - 12th
Prerequisite: None

From the beginning of organized human societies, the ability to speak and argue persuasively has been shown to be a valuable accomplishment in many walks of life. Certainly from the time of the Greek sophists in the 5th century B. C.E., it has been understood that the possession of valid knowledge may be less influential if it isn't partnered with the ability to persuade others of its validity. This course will examine rhetorical elements and strategies that are effective in creating persuasive arguments. It will also focus on helping students incorporate these tools to develop their own talents for articulating clear claims and providing appropriate evidence in order to persuade an audience to agree or take a particular course of action both in essays and speeches. Attention will also be paid to the practical techniques of successful public oratory.

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.

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 primarily on stories depicting the journey to adulthood and maturity. Throughout the year, we will explore various novels, plays, poetry, and essays from around the world, beginning with the Ancient Greeks and ending in the 21st century. 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 mechanics of essay writing. Core texts include: *The Odyssey*, *The Catcher in the Rye*, *Henry IV, Part I*, and *Lord of the Flies*. Other texts may include *Brave New World*, *Persepolis*, *The Power of One*, and *The Hate U Give*.

English X

12000
Grade Level: 10th
Prerequisite: English 9 or equivalent

English 10 traces American experiences as they are reflected in literature from the country's colonial beginnings to the present day. Students read works from a variety of genres and practice writing in many forms, with particular emphasis on the analytical essay. Grammar study arises out of students' specific needs, and vocabulary is studied in context with the literary texts. Core texts include: *The Crucible* or *Our Town*, essays by Thoreau and Emerson, stories by Hawthorne and Poe, and *The Great Gatsby*. Additional authors studied may include Twain, Whitehead, Cather, Douglass, Hurston, Hemingway, Tennessee Williams, Vonnegut, Highsmith, O'Brien, Kesey, and Alexie.

English XI

13000
Grade Level: 11th
Prerequisite: English 10 or equivalent

English 11 is primarily a study of the literature from the United Kingdom and its former colonies. Students will read a variety of genres, from lyric poetry and short fiction to dramas and novels and non-fiction works. Writing assignments will ask students to express their ideas in a variety of forms, from personal and analytical essays to creative fiction and poetry. Core texts include: *Oedipus the King*, *Macbeth* or *Othello*, *Dubliners*, and *Frankenstein* or another nineteenth century British novel. Other authors read may include: Chaucer, Dickens, Conrad, Orwell, McEwan, Coetzee, Kinkaid, Ishiguro, Lahiri, Soyinka, Hamid, and Kafka.

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, various works of drama and longer narrative fiction will be studied. The literature studied may include works by Sophocles, Shakespeare, Tom Stoppard, Thomas Hardy, George Eliot, Herman Melville, William Faulkner, Virginia Woolf, Toni Morrison, and Iris Murdoch.

Honors Seminar: English Literature

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. The reading list for this course is in part a function of student interest. Past writers studied have included Shakespeare, Morrison, Dante, Hawthorne, Austen, Adichie, Hwang, and others.

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.

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

14054
Grade Level: 12th

Ernest Hemingway lives in the American consciousness like no other writer of the 20th century. He once famously 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 current conceptions of gender roles? This course will also explore how Hemingway shaped (and was shaped by) literary Modernism by studying authors such as Sherwood Anderson, Gertrude Stein, William Faulkner, and Hemingway's "frenemy," F. Scott Fitzgerald. Students should expect to write both critically and creatively during the year.

Texts may include: *The Sun Also Rises*, *A Farewell to Arms*, *For Whom the Bell Tolls*, *The Old Man and the Sea*, among others. We'll study contemporary authors, including: Richard Ford, Tobias Wolff, Raymond Carver, Elmore Leonard, and Jay McInerney. Films may include: *The Hurt Locker*, *The Perfect Storm*, and *A River Runs Through It*. This course will feature field trips.

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.

Mind Over Matter: Athletes as Heroes in History and Literature

14055
Grade Level: 12th

Athletes have been honored as heroes since the first Olympiad. From Pindar's odes to the present day, writers have celebrated men and women who challenge themselves in sporting events. As organized competitions have taken an increasing amount of the cultural and political spotlight, the exploits of these athletes have in some cases reached the level of legend and myth. Names like Michael Jordan, Muhammed Ali, Michael Phelps and Lionel Messi are just a few that come to mind. Yet one of the lessons of history is that there are some figures who become legends while others—even those who have made great athletic or cultural contributions—have toiled without due recognition or been consigned to relative oblivion. This course will examine the contributions of a variety of athletes who reached the pinnacle of success in their respective sports, but special attention will be paid to those who made contributions to their societies and to history itself. Joe Rantz, Louis Zamperini, Gino Bartali, Billy Mills, Wilma Rudolph, are a just a few of the less-heralded athletes we will focus on. Beyond their athletic achievements, each of these individuals persevered in the face of extraordinary adversity and within the difficult historical context in which they lived—whether it was during the Great Depression, World War II, or the Civil Rights Movement. In addition, novels such as Bernard Malamud's The Natural and screenplays focusing on athletes such as Martin Scorsese's Raging Bull will be examined.

This course will examine different forms of storytelling in literature through analyzing biographies, autobiographies, screenplays and novels while focusing on themes such as perseverance, agony of defeat, competition, doubt and confidence. It will also seek to define what it means to be a hero in sports, how these sports heroes are the same or different from the archetypal heroes of classical literature, and how these athletes have wielded influence or inspired generations; it will also take a close look at their personal lives and the psyches in order to assess what made them great. During the third quarter, students will conduct research and write an essay on an athlete of their own choosing.

On the Road: A Journey Across America

14056
Grade Level: 12th

In *Travels with Charley*, a memoir about a road trip across America with his dog, John Steinbeck wrote that "Nearly every American hungers to move." What is it about the propensity for travel – across our own country, in particular – that feels so inherently American? Is it a desire for freedom? And is the open road always able to provide the liberation, hope, and opportunity that it has come to represent in American mythology? These are just a few of the questions that we will consider as we journey together through American history and across its landscape. We'll drive a jalopy to California with the Joads while reading *The Grapes of Wrath*; we'll head down south with William Faulkner's *As I Lay Dying* and Jesmyn Ward's *Sing, Unburied, Sing*; and we'll take a trip to a post-apocalyptic future in Cormac McCarthy's *The Road*. We will also seek to challenge traditional road trip narratives by considering issues of forced migration, with texts like *The Underground Railroad* and *Lost Children Archive*, a 2019 novel about the crisis at the U.S. border with Mexico.

Other possible texts include Jon Krakauer's *Into the Wild*, Emily St. John Mandel's *Station Eleven*, and Jade Chang's *The Wangs vs. the World*. We will supplement our work by reading the poetry and essays of writers like Joan Didion, Walt Whitman, Henry David Thoreau, and Sarah Vowell, and by watching films that might include *Thelma & Louise*, *Almost Famous*, *Nomadland*, and *Little Miss Sunshine*.

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 a writer 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?
Works will include: *The Lion, the Witch, and the Wardrobe, A Wizard of Earthsea*, *The Hobbit*, *Harry Potter and the Sorcerer's Stone*; stories from Greek mythology, as well as those by the Brothers Grimm, Hans Christian Andersen, Neil Gaiman, Nalo Hopkinson, Emma Donoghue, and NK Jemisin; and films such as *Black Panther* and *Pan's Labyrinth*.

Philosophy and Literature

14120
Grade Level: 12th

Though literature predates philosophy, there is nevertheless an important fraternal relationship between the two humanistic fields (though like some other siblings, their differences often lead to conflict). Philosophy asks the big questions upfront and tries to find solutions, often by rigorous and analytical argument; literature more often sees how human beings (or Neanderthals or Androids) manage to live with those same questions—sometimes rationally, sometimes passionately.

We'll begin with Plato, one of the most literary of philosophers, whose idealistic philosophy has influenced so many writers, considering some of the important questions he asks: What is the good life? What is virtue? How are the human soul and the ideal political state best framed? What is the function of art (literary, visual, musical)? We shall also read writers influenced by Platonic thinking, from Thomas More to Thomas Mann and Iris Murdoch. We'll then consider Aristotle's more scientific and relativistic perspective, considering how his influence—especially on character—can be traced in literary works from ancient times to the present, from Euripides to Shakespeare to Stoppard.

During the third quarter we shall consider Friedrich Nietzsche's philosophy and its impact on nihilistic and existentialist thinking in such writers as Dostoevsky, Camus, and Sartre. Finally in the spring we'll consider the role scientific and language-centered philosophies have had on post-modern conceptions of time, chaos theory, and the development of technology and ideas of the multiverse, drawing on writers including Kazuo Ishiguro, Philip K. Dick, Neal Stephenson, William Golding, and C.S. Lewis.

Revolutionary Joy

14122
Grade Level: 12th

In this class, we'll explore the idea of joy as a revolutionary act. We will look at the stories of people and communities who insist on expressing and reclaiming their joy as an act of resistance against the forces of oppression. The foundational unit for this course will be a deep dive into the creation of Hip Hop as an art form and culture that prioritized pure, unapologetic fun in one of the poorest and most segregated communities in America. After that, we'll explore everything from radical queer resistance in books such as *The House of Impossible Beauties* and films like *Paris Burning* to the power of women celebrating each other in works such as *The Women of Brewster Place* and *Lemonade* by Beyonce. By examining different genres of literature, music and art, we will seek to answer the following essential questions: what does joy look like in the face of seemingly insurmountable oppression? What is the relationship between expressions of anger and expressions of self love? And how can joy actually be used as a tool for liberation?

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 the 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
- Participation in National History Day Competition
- 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

Modern World History (1750-1945) is a required course that introduces core ideological concepts that define and dominate the modern era. The course is chronological, but explores recurring themes such as globalization and its impact, the origins of racial classification and prejudice, technology and demographic change over time, the development of social and economic systems of power imbalance within and across societies, and the influence of revolution and reform movements, both nationally and internationally. Throughout the course, students will consider the historical construction and development of human identity within and across societies and as drivers of modern world historical development. The class builds toward an understanding of the critical influence of historical events and ideologies on the present. Students will continue to develop their critical thinking skills with the use of primary and secondary sources, as well as the ability to synthesize and analyze historical events.

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.

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** should have an A- average and least three quarter grades of A- or higher.

Current **Sophomores** should have at least an A- in their current non-AP 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. AP Psychology and AP Economics may **not** be taken concurrently.

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.

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.
THIS IS A GREAT CLASS FOR SOMEONE WHO: Is interested in politics outside of America, likes to discuss current global events and wishes to get to the philosophical core of different political theories.

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

After taking AP Human Geography, students will have a much greater understanding of why the world looks and functions the way it does. This course studies the patterns of human activity on the earth's surface and the underlying processes that give rise to these patterns. For example, one can study coffee production in the world (pattern), but s/he must understand the history of colonialism, the role of multinational corporations, and increasing economic interdependence (processes) that influence the distribution of coffee growers in tropical regions. 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 population and migration, culture, the political organization of space, agricultural and rural land-use, industrialization, economic development and urban land-use. Throughout the course, students will use a wide array of maps, charts and photographs to conduct geographic analysis which will allow them to make sense of the world around them.

AP United States Government & Politics

38417
Grade Level: 11th - 12th
Prerequisite: Departmental approval (see APPS)
*Fulfills departmental course requirement

This college-level course prepares students for the AP United States Government & Politics examination through exploration of 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: Philosophical underpinnings of American political culture; the study of the constitutional basis of the U.S. government; the role of public opinion, political ideology, political parties, elections, interest groups, and the media in our political system; the interaction of the three major branches of national government; the development of civil liberties and civil rights. 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. Current events are also 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.

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 offers students a rich understanding of world historic patterns from 1000 CE to the present, as well as the opportunity to dig deep into primary and interpretive sources, conceptual thinking, and historiography. In depth and breadth it mimics an introductory college course, using chronology, geographic regions, and themes to bring clarity to the content. The class seeks to answer the questions of how and why political, social and demographic dynamics exist as they do in the 21st century. Students will develop an understanding of religious, philosophical and intellectual traditions, and the major events that have served as turning points in world history. 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.

FALL SEMESTER COURSES

Case Study Methods: Turning Points in American History (f)

33100
Grade Level: 11th - 12th
Placement preference will be given to rising Seniors.
Prerequisite: US or AP US History
* Fulfills departmental requirement

Have you ever wondered, specifically, how complex historical events and decisions unfold in the heat of the moment? Looking back at any particular episode through a historical lens can cause an aura of over simplification by nature of our hindsight. However, the realities of the time are usually far more nuanced, chaotic and undetermined for those that lived through the moment. Join peers in an exercise of historical case study inquiry – a type of historical role playing – to dive deep into a series of weighty turning points in American history. This semester long class will focus on 20th century American moments with added emphasis on recency. Case studies may include such topics as the role of the Federal Government in Food Safety, Civil Rights, Gerrymandering, Campaign Finance, Labor Rights and more. The class will require substantial student discussion as a way to understand the complexity of the case. In essence, we'll be doing history "in the present tense".

Criminal Justice (f)

36469
Grade Level: 11th - 12th
Placement preference will be given to rising Seniors.
Prerequisite: None
* Fulfills departmental requirement

Why do so many people end up in jail? Look behind the headlines and analyze the historic 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 the historic context of criminal laws, Constitutional protections for individuals, historic 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 and analyze key primary documents (the Constitution, statutes, trial documents, Supreme Court opinions). Learn legal terminology, constructs, and procedures. Examination of case studies, trial elements, and analytical and creative writing will be at the center of student led project work. Class discussions and participation are key to forming views about how historical choices have shaped our legal system. Weigh citizens' rights against the tools at the prosecutors' disposal in real life scenarios and cases. Analyze our current and past policies regarding imprisonment and sentencing. Develop your own view about what works or doesn't in our criminal justice system.

History of Warfare: Development of Linear Warfare 1700-1918 CE (f)

38501
Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: None
*Fulfills departmental requirement

This course will focus on understanding the development of linear warfare from the era of Frederick the Great up until its obsolescence during the First World War. Students will consider the rapid development of technology and its corresponding impact, or lack thereof, on typical military doctrines of the time. We will discuss how and why armies fought the way they did, how strategy and tactics were developed, the theories behind war in the 19th and early 20th century, and how warfare evolved and modernized. Topics include warfare in the "Age of Reason", the Napoleonic world, the industrial wars of the late 19th century, and will culminate in a study of the campaigns of 1914. Students should expect both primary and secondary source readings, film and documentary clips, and game based learning models in which they'll be asked to make some of the same decisions as battlefield commanders throughout the centuries.

Modern Middle East (f)

36413
Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: None
*Fulfills departmental requirement

While countries in the Middle East are often the subject of dire headlines, the context for those headlines is often unexplained or misunderstood. 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. The class is organized around country case studies, while providing a chronological understanding of the region's history. Topics of study include religious and ethnic identities, independence movements and democratization, the economics of oil, the rise of terrorism, and regional wars and revolutions. In addition to historical texts, students will engage with film, contemporary art, and music to better understand the region. This class is discussion and project based, with emphasis on critical thinking skills.

Race and Cinema in Modern America (f)

38430
Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: None
*Fulfills departmental requirement

In a 2017 interview, Jordan Peele explained the concept behind his horror film Get Out by reflecting, "Society is the scariest monster." This course critically examines American Society by analyzing Get Out and the way Peele drew on past films to comment on race and racism while also creating the horror that defines his iconic film. Organized thematically, it places Get Out in dialogue with films that feature blackface/yellowface/whiteface (Jazz Singer, 1927, Mask of Fu Manchu, 1933, Bamboozled, 2001) and explore integration through interracial romance (Guess Who is Coming to Dinner, 1968, West Side Story, 1961/2021, and Krimson Kimono, 1959). It explores how the depiction of Black/ African Americans, members of the LatinX community, Asian Americans, and White Ethnics (Jewish-Americans/Italians/Irish) have changed over time in response to shifting historical contexts and the changing racial attitudes of theater audiences. Assignments will include short critical reflection papers, video essays and in-class writing assignments.

The World at War (f)

38502
Grade Level: 11th - 12th
Placement preference will be given to rising Seniors.
Prerequisite: None
*Fulfills departmental requirement

The years 1914-1945 were the crucible that formed the modern world. These years marked the fall of many great empires (Russian, German, Ottoman, and Austro-Hungarian), the demise of Great Britain and France in addition to the rise of the United States and Soviet Union as the dominant world powers. Encompassing two world wars, the worst economic crisis in world history, a global pandemic, the Holocaust, and culminating in the rise of the Atomic Age, this period was in many ways the defining period of the 20th century. The course will begin with a review of the factors that led to the start of the Great War and finish with the implications of the U.S. decision to use the atomic bombs on Japan. Special attention will be given to the historical theory that regards this period as one long war (the second Thirty Years War) rather than two separate conflicts. We will also examine the impact of these wars on both America and the world and how they combined to help create the world we live in today.

SPRING SEMESTER COURSES

Debate: 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.)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: None
*Fulfills departmental requirement

This course introduces students to the practice of oral argumentation as a way of further investigating various modern and historical 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. Special emphasis is taken to provide meaningful historical/political context for applicable topics, as this is a course that meets the history requirement. 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. THIS IS A GREAT CLASS FOR SOMEONE WHO: Wants to improve their public speaking and debate skills while digging into both fun and polarizing topics of the day.

Environmental History (s)

38422
Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: None
*Fulfills departmental requirement

Why are certain landscapes more appealing than others? Are national parks a good idea? What is environmental justice? What are the causes and 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 interaction between people and environments from prehistory to the present. The course will consist of five units, each of which will trace the evolution of human engagement with the environment from the standpoint of a different topic. 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 History will gain both an awareness of the ways in which human culture and the environment have shaped one another over time and an appreciation of the natural and cultural 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.)
Placement preference will be given to rising Juniors and Seniors.
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.

Racial Struggle on Film (s)

38431
Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: None
*Fulfills departmental requirement

This course critically examines the representation of race in American Cinema from the rise of Blaxploitation in the early 1970s through the release of Jordan Peele's Horror Masterpiece Get Out (2017). It seeks to understand the conflicting visions for a multi-racial/multi-cultural society through the shifting cinematic portrayals of racial unrest/protest, white backlash, and the rise of a global economy. In the process, it documents the insurgent influence of BIPOC as directors, actors, screenwriters and producers. Assignments will include short critical reflection papers and video essays and students will use economic data from the 1970s and 1980s to understand the structural changes occurring in American Society and use this research to critically analyze the depiction of race in several films from the period.

The Birth of Modern Warfare 1918-Present CE (s)

38504
Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: None
*Fulfills departmental requirement

This course will track the development of modern warfare beginning with the First World War and culminating with a study of global terrorism. Students will explore the concept of total war, and the ways in which military philosophy and science changed with the advent of nuclear technology. A specific emphasis will be placed on the rise of small scale, limited conflicts, and the asymmetrical battlefields of the late 20th and 21st centuries. Topics will include the campaigns of 1918, the Spanish Civil War, World War Two, Vietnam, and the War on Terror. Students should expect both primary and secondary source readings, film and documentary clips, and game based learning models in which they'll be asked to make some of the same decisions as battlefield commanders throughout the centuries. Finally, students will participate in a living history project in which they'll learn to conduct interviews with veterans of the US military.

The Global Cold War (s)

38503
Grade Level: 11th - 12th
Placement preference will be given to rising Seniors.
Prerequisite: None
*Fulfills departmental requirement

The Cold War dominated both American and global politics for much of the 20th century. This course will examine the origins, events, strategies, and consequences of the Cold War in not just the United States and the Soviet Union, but also in places such as Europe, Africa, and Asia. Special attention will be paid to the development of mechanisms in both the Soviet Union and the U.S. to manage this conflict of ideas in each country. The course will conclude with a review of how the Cold War wound down and its implications for the 21st century relationship between U.S., Russia, and China.

The History of Race and Science (s)

38482
Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: None
*Fulfills departmental requirement

Why has science been used to justify racial thinking? How does your racial identity develop during adolescence? How can reexamining history help us to eliminate interpersonal and systemic racism? The History of Race and Science explores the construct of race as a social and historical phenomenon. Beginning with the historical evolution of race, students will explore the role that science has played in perpetuating race, considering both the biological myth and social reality in context of the historical time period. In order to understand these concepts more fully, we will engage in an interdisciplinary exploration of eugenics, racial conflicts, intergroup behavior, identity development, and contemporary social justice issues. We will explore the construction of the racial-ethnic-cultural identities in the United States, incorporating multidisciplinary readings and activities. Along the way, students will discuss the historical events and patterns that have influenced the construction of race and resulting manifestation in society, working to develop a stronger understanding of the world today.

FULL-YEAR HISTORY ELECTIVES

Honors Civil Rights Seminar (Expedition Course)

33010
Grade Level: 11th - 12th
Prerequisite: United States History, AP United States History
*Fulfills departmental course requirement

This course examines the origins and advancements of 20th century civil rights history in the United States. Students will examine Reconstruction policies, the history of legalized segregation, the fight for voting rights and the modern civil rights struggle with specific emphasis on the writings and example of Rev. Dr. Martin Luther King Jr.. Several case studies will be provided in order to critique and evaluate the effectiveness of nonviolence as a tool for advancing civil rights and peace. Through critical analysis of historical data, primary, secondary and multimedia sources students will learn to interpret and synthesize information utilizing historical thinking skills. Independent research will be expected so that students practice formulating evidence based arguments. Students are required to participate in a one week trip to Georgia, Alabama and Tennessee as part of this course. The trip is scheduled to take place the first week of spring break.

Honors Seminar: Humanities and Social Science Research

36424
Grade Level: 11th - 12th
Prerequisite: 9th and 10th grade history and departmental approval
*Fulfills departmental course requirement

The Humanities and Social Science Research Seminar offers students the opportunity to conduct advanced research similar to that of professional historians and social scientists. This year, the course will focus on the iconic decades of the 1980s and 90s.

In the first semester, students will be introduced to a range of analytical tools and research methodologies through a series of individualized projects structured around major themes and global events of the period. In the second semester, students will work independently on staged assignments leading up to a research paper of approximately 5,000 words (~20 pages). During this time, students will not only design and execute their own project but will actively engage with the research of their peers through workshops and peer review. If appropriate, the completed projects might lend themselves to publication or conference presentation.

ECONOMICS AND PSYCHOLOGY

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, those courses that provide students with both significant history content and historical thinking skills count toward the history requirement. The courses listed below are social science courses that do not take the past as the foundation of inquiry or develop additional skills associated with the discipline of history. While they count as full academic classes, they do not fulfill the history requirement. Also note that AP Psychology and AP Economics may not be taken concurrently.

ECONOMICS

Microeconomics and Macroeconomics

38409
Grade Level: 11th - 12th
Prerequisite: None

This full-year course covers both micro- as well as macroeconomic 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.

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 includes a study of the broad measurements of economic performance, including trends in gross domestic product, inflation, and unemployment. It analyzes the role of money and banking, the workings of monetary and fiscal policies, the federal budget and national debt, and 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, the forces of supply and demand, different market structures such as pure competition, oligopolies, and monopolies, and the degree and effect of government intervention in our market-based economy.

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

FALL SEMESTER COURSES

Economics: Entrepreneurship (f)

38404
Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)
Placement preference will be given to rising Juniors and Seniors.
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
Placement preference will be given to rising Juniors and Seniors.
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!

SPRING SEMESTER COURSES

Behavioral Economics (s)

36472
Grade Level: 10th - 12th
Placement preference will be given to rising Juniors and Seniors.
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!

Economics: Personal Finance & Investment (s)

38403
Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course.)
Placement preference will be given to rising Juniors and Seniors.
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 get an overview of portfolio theory, stock valuation, fixed income investments (including CDs, bonds, and annuities) and mutual funds. Group projects, presentations, and real-world research will bring the curriculum together and help students develop skills that will help them in college and beyond.

PSYCHOLOGY

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.

FALL SEMESTER COURSES

Abnormal Psychology (f)

38478
Grade Level: 11th - 12th
Placement preference will be given to rising Seniors.
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 psychiatric disorders in adolescents and adults. 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 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 an effort to reduce the suffering and stigma associated with psychiatric disorders.

Sport Psychology (f)

38479
Grade Level: 10th - 12th (For 10th graders, concurrent with a US history course)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: None

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, and mental toughness as well as applications such as coping with stress in sport and imagery techniques. We will explore case studies, analyze 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.

SPRING SEMESTER COURSES

Cognitive Psychology (s)

38477
Grade Level: 10th - 12th
Placement preference will be given to rising Juniors and Seniors.
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.

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.

Calculus

28405
Prerequisite: Precalculus

This course introduces students to the methods of calculus and the ideas that lie behind them. Concepts are presented in an intuitive way and students develop their calculus skills in varying contexts and applications. The graphing calculator is used to clarify concepts and to produce solutions that cannot be found using paper-and-pencil methods. Topics include differentiation, applications of the derivative, techniques of differentiation, trigonometric functions, exponential and logarithmic functions, integration, techniques of integration, and differential equations.

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 Math: Real Analysis

28504
Prerequisite: Multivariable Calculus and departmental approval

Mathematical analysis has as its goal the rigorous derivation of the results used in calculus. This is an undergraduate-level course such as might be taken by math majors in their second or third years of college, and it demands considerable mathematical maturity from the student. The material consists almost entirely of proofs, both in the theory covered in class and in the exercises assigned. Topics covered will include limits of sequences and of functions and sums of infinite series; continuity and the extreme-value and intermediate-value theorems; derivatives, the mean-value theorem, and Taylor polynomials; Riemann integrals and both forms of the fundamental theorem of calculus; and uniform convergence of sequences of functions. (The word "real" in "real analysis" specifies that functions of real numbers are considered, as distinct from "complex analysis," which deals with functions of complex numbers.)

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

Department Approval Required

FALL SEMESTER COURSES

Honors Seminar: Linear Algebra (f)

26431
Grade Level: 11th - 12th
Prerequisite: *Honors Seminar: Stanford Multivariable Integral Calculus* and departmental approval

This course is a university level course in linear algebra through Stanford University's Online Math and Physics Program for High School Students. Students work under the guidance of a GA math teacher, but the curriculum, problem sets, and exams are sent from Stanford University. Topics include introduction to matrices and matrix operations, vector spaces, linear transformations, and eigenvalues and eigenvectors. Developing strong proof-writing techniques is heavily emphasized. This course requires significant self-motivation and independent learning and thus admission to the course is selective. This course also carries Stanford University Continuing Studies credit and students are eligible to earn a Stanford University Continuing Studies Transcript.

Honors Seminar: Multivariable Differential Calculus (f)

26430
Grade Level: 11th - 12th
Prerequisite: Calculus BC and departmental approval

This course is a university-level course in differential calculus for functions of two or more variables through Stanford University's Online Math and Physics Program for High School Students. Students work under the guidance of a GA math teacher, but the curriculum, problem sets, and exams are sent from Stanford University. Course topics include a study of two and three-dimensional vector space, vector-valued functions, surfaces in three dimensions, tangent and normal vectors, partial derivatives, continuity and differentiability of functions of two or more variables, directional derivatives, gradient vectors, and methods of calculating maxima and minima including Lagrange multipliers. Topics are studied in the Cartesian, cylindrical and spherical coordinate systems, and proofs are integrated throughout the course study. This course requires significant self-motivation and independent learning and thus admission to the course is selective. Finally, this course carries Stanford University Continuing Studies credit and students are eligible to earn a Stanford University Continuing Studies Transcript.

SPRING SEMESTER COURSES

Honors Seminar: Modern Algebra (s)

26432
Grade Level: 11th - 12th
Prerequisite: *Honors Seminar: Stanford Linear Algebra* and departmental approval

This course is a university level course in modern algebra through Stanford University's Online Math and Physics Program for High School Students. Students work under the guidance of a GA math teacher, but the curriculum, problem sets, and exams are sent from Stanford University. Topics include groups, cyclic groups, quotient groups, normal subgroups, rings, fields, quotient rings and field extensions. Developing strong proof-writing techniques is heavily emphasized. This course requires significant self-motivation and independent learning and thus admission to the course is selective. This course carries Stanford University Continuing Studies credit and students are eligible to earn a Stanford University Continuing Studies Transcript.

Honors Seminar: Multivariable Integral Calculus (s)

26433
Grade Level: 11th - 12th
Prerequisite: *Honors Seminar: Stanford Multivariable Differential Calculus (f)* and departmental approval

This course is a university level course in integral calculus for functions of two or more variables through Stanford University's Online Math and Physics Program for High School Students. Students work under the guidance of a GA math teacher, but the curriculum, problem sets, and exams are sent from Stanford University. Course topics include double and triple integrals in all coordinate systems, surface areas of parametrically defined functions, change of variables and the Jacobian, vector fields, flux and various other applications to physics, line integrals, Green's theorem, the divergence theorem, and Stokes' theorem. Exercises continue to be both computational and proof-oriented. This course requires significant self-motivation and independent learning and thus admission to the course is selective. This course also carries Stanford University Continuing Studies credit and students are eligible to earn a Stanford University Continuing Studies Transcript.

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 student's 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 Computer Science mandatory as a graduation requirement for the class of '23 onwards, underlining our recognition that an education built upon a STEM foundation 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 the 21st century economy.

FALL SEMESTER COURSES

CS-101: Introduction to Computer Science (f)

78601
Grade Level: 9th - 12th
Prerequisite: None
Note: This course can fulfill a semester of Computer Science graduation requirement

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 program automation, Python is a great choice if you're just starting to learn how to write code.

This course aims to develop 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-102: Make and learn: Physical Computing (f)

78618
Grade Level: 9th - 12th
Prerequisite: None
Note: This course can fulfill a semester of Computer Science graduation requirement

This semester-long course introduces core techniques in the field of physical computing and the Internet of Things (IoT) to leverage programming, networking, and sensor data analysis with a variety of embedded "microcomputer" devices targeted at students and hobbyists, such as Arduino, Raspberry Pi, and the BBC micro:bit.

Using a hands-on approach, you will build circuits, solder relays, build structures to hold sensors and controls, and write programs that figure out how to make them all talk to each other and give the desired output. The course is designed to introduce students to a toolkit of practical computing skills, including coding and prototyping, that will enable them to create their own interactive physical computing projects, limited only by their imagination. *Come... Make and learn!*

CS-103: Web Design and Development (f)

78619
Grade Level: 9th - 12th
Prerequisite: None
Note: This course can fulfill a semester of Computer Science graduation requirement

You bring creativity and passion. We'll teach you the skills you need to become a web designer. Starting with a gentle introduction to web technologies needed to design and prototype web-based User Interfaces (UI), students will go on to make increasingly sophisticated websites using scripting and markup languages such as HTML, CSS, JavaScript, Python, jQuery, and much more.

The course focuses on simplicity and straight-forward learning, with detailed code explanations and guidance to effectively teach you how to build a modern website in line with industry best practices. Heavily hand-on and project-oriented, students will learn the latest cutting-edge front-end development and coding skills, ready to create their very own modern, responsive websites that are pixel-perfect across a wide range of devices. The culminating project will be developing their own professional blog or site, with special features to fit the content across devices and attract more visitors.

STEAM-101: The Coding Palette (f)

78610
Grade Level: 9th - 12th
Prerequisite: None
Note: This interdisciplinary course can fulfill a Computer Science or Art requirement

Positioned squarely at the intersection of Computer Science and Visual Arts, the Coding Palette course 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 also articulate their personal artistic vision with digital tools.

Extensively project-based and focused on collaborative team-work, the class uses MIT Media Lab's open-source Processing language, offering a digital sketchbook for learning how to code within the context of the visual arts. Similar but simpler than Java, Processing uses a graphical user interface for simplifying compilation and execution of projects. The class seamlessly transitions from coding instruction to practical studio time, where students learn to prototype, develop and showcase their digital arts projects using algorithms to create 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: This course can fulfill a semester of Computer Science graduation requirement

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 program automation, Python is a great choice if you're just starting to learn how to write code.

This course aims to develop 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-102: Make and learn: Physical Computing (s)

78616
Grade Level: 9th - 12th
Prerequisite: None
Note: This course can fulfill a semester of Computer Science graduation requirement

This semester-long course introduces core techniques in the field of physical computing and the Internet of Things (IoT) to leverage programming, networking, and sensor data analysis with a variety of embedded "microcomputer" devices targeted at students and hobbyists, such as Arduino, Raspberry Pi, and the BBC micro:bit.

Using a hands-on approach, you will build circuits, solder relays, build structures to hold sensors and controls, and write programs that figure out how to make them all talk to each other and give the desired output. The course is designed to introduce students to a toolkit of practical computing skills, including coding and prototyping, that will enable them to create their own interactive physical computing projects, limited only by their imagination. *Come... Make and learn!*

CS-103: Web Design and Development (s)

78617
Grade Level: 9th - 12th
Prerequisite: None
Note: This course can fulfill a semester of Computer Science graduation requirement

You bring creativity and passion. We'll teach you the skills you need to become a web designer. Starting with a gentle introduction to web technologies needed to design and prototype web-based User Interfaces (UI), students will go on to make increasingly sophisticated websites using scripting and markup languages such as HTML, CSS, JavaScript, Python, jQuery, and much more.

The course focuses on simplicity and straight-forward learning, with detailed code explanations and guidance to effectively teach you how to build a modern website in line with industry best practices. Heavily hand-on and project-oriented, students will learn the latest cutting-edge front-end development and coding skills, ready to create their very own modern, responsive websites that are pixel-perfect across a wide range of devices. The culminating project will be developing their own professional blog or site, with special features to fit the content across devices and attract more visitors.

STEAM-101: The Coding Palette (s)

78611
Grade Level: 9th - 12th
Prerequisite: None
Note: This interdisciplinary course can fulfill a Computer Science or Art requirement

Positioned squarely at the intersection of Computer Science and Visual Arts, the Coding Palette course 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 also articulate their personal artistic vision with digital tools.

Extensively project-based and focused on collaborative team-work, the class uses MIT Media Lab's open-source Processing language, offering a digital sketchbook for learning how to code within the context of the visual arts. Similar but simpler than Java, Processing uses a graphical user interface for simplifying compilation and execution of projects. The class seamlessly transitions from coding instruction to practical studio time, where students learn to prototype, develop and showcase their digital arts projects using algorithms to create the most pleasing visual results. *Write Code… Make Art!*

FULL YEAR COURSES

CS-201: AP Computer Science Principles

78605
Grade Level: 10th - 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 who've taken CS-101 Introduction to Computer Science. Based on the curriculum developed by the College Board, AP CSP introduces foundational concepts of Computer Science and challenges students to explore the impact of computing and technology on the world.

Introducing the "big ideas" of Computer Science -- creativity, programming, abstraction, algorithms, large data sets, the Internet, cybersecurity, and the global impact of computing -- it gives students an opportunity to use technology to address real-world problems and build relevant solutions.

The project-based coursework helps students better understand computational content and fosters critical-thinking skills that engage them in the creative aspects of the field, without being focused solely on programming. 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: 11th - 12th
Prerequisite: CS-101: Introduction to Computer Science or CS-201 AP Computer Science Principles.
Departmental approval required.

The coursework for AP Computer Science A covers object-oriented programming using Java language and is the equivalent of a first semester, college-level course in Computer Science. Emphasizing problem solving and algorithmic development, it focuses on hands-on application of programming tools to develop solutions that can scale up from small and 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 interfaces using AWT and Swing libraries. Much of the course is project based, to prepare students to take the College Board AP CSA 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.

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 that may be highly structured or unstructured.

This course provides a comprehensive introduction to Data Science and Machine Learning using tools such as Jupyter Notebook, NumPy, and Pandas to analyze real-world datasets, to identify patterns and relationships in data with 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 Data Science and Machine Learning, its diverse applications; common terminologies; core, descriptive and inferential statistics; correlation; hypothesis testing; confidence intervals & margin of error; pattern recognition via supervised and unsupervised learning, and much more!

Students will build their own portfolio of open-source GitHub projects using both built-in and custom-built data types to create expressive and computationally robust Data Science projects and predictive machine learning models using Python and Scikit-learn.

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* courses serves as the entry point to all the more advanced Computer Science courses offered at Greenwich Academy.

FALL SEMESTER COURSES

Introduction to Computer Science: Art + Code (f)

76615
Grade Level: 9th - 12th
Prerequisite: None

Would you love to **make art** in a new way and **learn to code** in the process? Designed to build a foundation in computer science fundamentals within the context of art-making practice, Introduction to CS: Art and Code, is a computer science/creative technologies course enabling students to use code as an expressive medium for creating and understanding art and engaging in digital creation as a way to understand algorithms.

Students will progress through a series of projects that will build skill and understanding of core programming concepts, including data types, conditional and loops, data structures, and functions. Whether we are building projects on the web, or using laser cutting and 3D-printing for the making of coded works, the creations of this class will be expressed as digital or physical works to be shared and exhibited. Assessments will be varied, including both projects and more traditional pen-and-paper work.

This entry level course will prepare students with all of the coding, problem solving, and debugging skills needed for AP Computer Science A, as well as equip students with a skill set in new media and creative coding in the visual arts.

Introduction to Computer Science: Science + Code (f)

76617
Grade Level: 9th - 12th
Prerequisite: None

Do you love science? Would you like to understand how to leverage code to further your scientific understanding? This course is designed to build a foundation in computer science fundamentals within the context of understanding scientific concepts. Students will use code to develop a deeper understanding of concepts in biology, chemistry, and physics while learning to code in the process.

Students will progress through a series of projects that build skill and understanding of core programming concepts, including data types, conditional and loops, data structures, and functions.

This entry level course will prepare students with all of the coding, problem solving, and debugging skills needed for AP Computer Science A, as well as providing students a new skill set useful in any future science course!

SPRING SEMESTER COURSES

Introduction to Computer Science: Art + Code (s)

76616
Grade Level: 9th - 12th
Prerequisite: None

See course description under fall electives.

Introduction to Computer Science: Science + Code (s)

76618
Grade Level: 9th - 12th
Prerequisite: None

See course description under fall electives.

FULL YEAR COURSES

AP Computer Science Principles

76620
Grade Level: 9th - 12th
Prerequisite: 9th graders must be in Accel Geometry or above

AP Computer Science Principles 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.

This course also focuses on a much more diverse set of issues than just coding, 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!

AP Computer Science A

76600
Grade Level: 11th - 12th
Prerequisite: Departmental Approval and satisfy one of the following: complete either of GA's Introduction to Computer Science courses, 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 Principles and Computing

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: 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 personal 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: Inventions that Make Life Better

36403
Grade Level: 11th - 12th
Prerequisite: Honors Engineering and Design I (GA)
*This course is offered jointly through the Engineering & Computer Science 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 to real-life problems. Greenwich Academy's Engineering and Design Lab offers state-of-the art fabrication machines and tools for building and prototyping their designs. Over the course of the year, students will have the opportunity to present their work and receive feedback from community members and professionals working in the fields of art, design, and engineering.

Honors Seminar: Engineering & Computer Science

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. These opportunities 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, as well as animal and plant physiology.

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 classroom work as well as 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 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 areas are covered through classroom work as well as laboratory experiments. Inquiry-based laboratory experiences are included throughout the year. The course stresses a more quantitative approach to the major topics covered. Upon completion of the year, the student is well positioned for more advanced courses within the discipline.

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: Minimum of B+ in Accelerated or Honors 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: 11th - 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
Math: A- in Accelerated or Honors Math
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.

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.

Honors Seminar: Science Research (GA)

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.

FALL SEMESTER COURSES

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.

Culinary Science I (f)

56041
Grade Level: 10th - 12th (Placement preference will be given to rising Seniors)
Prerequisite: Biology and Chemistry (concurrently for 10th grade students)

Good science is the backbone of good cooking. In this course, we'll use GA's state of the art culinary lab to bring the scientific method into the kitchen. Students will be asked to design experiments to improve the taste, texture, and aroma of food. We'll apply basic principles of biology and chemistry learned in previous courses to perfect our recipes. As we attempt to achieve food nirvana, we'll tackle everything from breakfast to dessert. Students who elect to take this course should have an adventurous palette, a healthy appetite, and an enthusiasm for science. By the end of the course, students will have a strong foundation in various cooking techniques and will be on their way to becoming lifelong learners in the kitchen.

Engineering and Robotics I (f)

58039
Grade Level: 12th only
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. Students 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.

Human Physiology I (f)

58030
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

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: 10th - 12th
Prerequisite: None

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: 11th – 12th
Placement preference will be given to rising 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.

Principles of Geology (f)

58044
Grade Level: 10th – 12th (10th graders must be taken concurrently with core science course)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: Science: Two years of science (second year can be concurrent)

Principles of Geology presents an overview of Earth, from a geological perspective. We will emphasize that plate tectonics—the grand unifying theory of geology—explains how the map of our planet's surface has changed radically over geologic time, and why present-day geologic activity—including a variety of devastating natural disasters such as earthquakes, landslides and volcanoes—occur where they do.

SPRING SEMESTER COURSES

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.

Culinary Science II (s)

56042
Grade Level: 10th - 12th (Placement preference will be given to rising Seniors)
Prerequisite: Biology and Chemistry (concurrently for 10th grade students)

Pizza is undoubtedly one of the world's best foods. However, most of the pizza that we eat is mediocre at best. There is a lot that can go wrong when making pizza at home or even in a restaurant for that matter. Careful attention must be paid to ingredients, technique, and most importantly, the science behind what really makes an excellent pie. In this course, we'll apply basic principles of biology and chemistry along with the scientific method to the pizza-making process. Using GA's state of the art culinary lab and outdoor pizza oven, students will attempt styles like deep-dish, thin-crust, and everything in between. Want to know the difference between Detroit, New York, and New Haven style pizza? Even better, want to learn how to make really good versions of all three at home? Students who elect to take this course should have a healthy appetite, an adventurous palette for different toppings, and an enthusiasm for science. By the end of the course, students will have a strong foundation in making/shaping dough, selecting/preparing toppings, and sliding pies in and out of the oven. Pizza mastery takes years to achieve, but with the skill set learned in this course, pizza may eventually become part of your culinary wheelhouse.

Engineering and Robotics II (s)

58040
Grade Level: 12th only
Prerequisite: Two years of science

This course will introduce students to the practical application of science through the completion of various engineering-build projects. Students 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 core science course)
Placement preference will be given to rising Juniors and Seniors.
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: 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
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.

Principles of Geology (s)

58045
Grade Level: 10th – 12th (10th graders must be taken concurrently with core science course)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: Science: Two years of science (second year can be concurrent)

Principles of Geology presents an overview of Earth, from a geological perspective. We will emphasize that plate tectonics—the grand unifying theory of geology—explains how the map of our planet's surface has changed radically over geologic time, and why present-day geologic activity—including a variety of devastating natural disasters such as earthquakes, landslides and volcanoes—occur where they do.

The History of Race and Science (s)

38482
Grade Level: 10th – 12th (10th graders must take concurrently with core science course)
Placement preference will be given to rising Juniors and Seniors.
Prerequisite: None

Why has science been used to justify racial thinking? How does your racial identity develop during adolescence? How can reexamining history help us to eliminate interpersonal and systemic racism? The History of Race and Science explores the construct of race as a social and historical phenomenon. Beginning with the historical evolution of race, students will explore the role that science has played in perpetuating race, considering both the biological myth and social reality in context of the historical time period. In order to understand these concepts more fully, we will engage in an interdisciplinary exploration of eugenics, racial conflicts, intergroup behavior, identity development, and contemporary social justice issues. We will explore the construction of the racial-ethnic-cultural identities in the United States, incorporating multidisciplinary readings and activities. Along the way, students will discuss the historical events and patterns that have influenced the construction of race and resulting manifestation in society, working to develop a stronger understanding of the world today.

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 in real-world situations and contexts. 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. Multimedia 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 the 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.

Honors Arabic II

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 US 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.

Honors Arabic III

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.

Honors Arabic IV

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' skills 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.

Honors Chinese II

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.

Honors Chinese III

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.

Honors Chinese IV

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, 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 2022-2023 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.

Honors French II

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.

Honors French III

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: online and local digital resources, newspaper articles, extracts, short stories, and more. 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.

Honors French IV

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 recorded activities. Students make recordings and do a wide variety of class exercises to improve their speaking ability. Films and online 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 Seminar: French Studies

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.

FALL SEMESTER COURSES

Exploring French Across the Globe (f)

44510
Grade Level: 10th - 12th
Prerequisite: French III and departmental approval

French is spoken in Europe, Africa and North America. It is less common knowledge that French is also spoken on islands extending from the Caribbean and South America to the Indian and Pacific Oceans. In this intermediate-level course, students will explore the histories and cultures of these myriad francophone regions in order to further develop their communicative skills in French through readings, videos, projects and class discussion. The goal is for students to leave the course feeling well equipped both in their understanding of different French-speaking peoples and cultures and their ability to interact confidently in the French language. A key factor to success in this highly interactive class is each student's commitment to full engagement in their learning experience.

SPRING SEMESTER COURSES

Diversity in Francophone Culture within France (s)

44511
Grade Level: 10th - 12th
Prerequisite: French III and departmental approval

In this intermediate level course, students will explore multiculturalism in France. Is there such a thing as "French culture"? Within the confines of its own borders, France is enriched by the diversity of its citizens. Through the discussion of readings, videos clips, films and historical references, and the completion of individual projects, students will investigate the customs and traditions that contribute to the many facets of French cultures and identities. Ultimately, students should leave the course feeling confident in their abilities to navigate both the written and spoken language. A key factor to success in this highly interactive class is each student's commitment to full engagement in their learning experience.

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.

Honors Italian II

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 students' 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.

Honors Italian III

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: online 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.

Honors Italian IV

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, online, 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 multimedia resources, as well as the textbook, to explore general cultural themes and 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.

Honors Spanish II

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.

Honors Spanish III

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 online and local digital resources, newspaper articles, extracts, and short stories. Students develop their listening and speaking skills through the frequent use of multimedia 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.

Honors Spanish IV

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 actively in 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. May be taken concurrently with another Spanish course, level IV or higher.

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 departmental approval. May be taken concurrently with another Spanish course, level IV or higher.

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 to 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.

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 departmental approval. May be taken concurrently with another Spanish course, level IV or higher.

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 departmental approval. May be taken concurrently with another Spanish course, level IV or higher.

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 of the Classics program 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.

Honors Latin II

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 intended/designed 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.

Honors Latin III

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 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 yet 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. 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 Seminar: 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 video games 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.

Honors Greek II

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.

Honors Greek III

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 Seminar: Open Art Studio (GA)

66602
Grade Level: 11th - 12th
Prerequisite: Honors Art II and departmental approval or AP 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

This course will introduce students to the core techniques of working with clay. We will cover handbuilding (pinch, coil & slab construction) and wheel-throwing, as well as a variety of surface decoration processes. Assignments will encourage students to explore new ideas and methods, while giving them the creative freedom to create exciting and unique work.

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: Skills (GA)

66402
Grade Level: 10th - 12th
Prerequisite: Art I, Ceramics I or departmental approval

In this course, students will advance their technical skills while finding their voice in the medium. We will investigate ceramics through sculptural and utilitarian applications inspired by historical and contemporary works. Projects will prompt individual problem-solving and interpretation with a focus on craftsmanship and individual expression.

Honors Ceramics III: Voice (GA)

66407
Grade Level: 10th - 12th
Prerequisite: Art I, Ceramics I or departmental approval

This third year Honors Ceramics course supports students' deeper inquiry of the medium. We will learn more about ceramic materials, glaze chemistry, loading and firing work - giving students greater access to the multi-stage process of bringing their ideas to fruition. Students will continue to use a mix of handbuilding and wheel-throwing to develop their creative voice through self-chosen lines of inquiry.

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 with 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 with 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 lll 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: 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 personal 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: Inventions that Make Life Better

36403
Grade Level: 11th - 12th
Prerequisite: Honors Engineering and Design I (GA)
*This course is offered jointly through the Engineering & Computer Science 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 to real-life problems. Greenwich Academy's Engineering and Design Lab offers state-of-the art fabrication machines and tools for building and prototyping their designs. Over the course of the year, students will have the opportunity to present their work and receive feedback from community members and professionals working in the fields of art, design, and engineering.

FALL SEMESTER COURSES

American Film: Big Screen Cultural Reflections (f)

36404
Grade Level: 10th - 12th
Prerequisite: None

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.

Introduction to Drawing (f)

66630
Grade Level: 10th - 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
Note: This interdisciplinary course can fulfill a Computer Science or Art requirement

Positioned squarely at the intersection of Computer Science and Visual Arts, the Coding Palette course 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 also articulate their personal artistic vision with digital tools.

Extensively project-based and focused on collaborative team-work, the class uses MIT Media Lab's open-source Processing language, offering a digital sketchbook for learning how to code within the context of the visual arts. Similar but simpler than Java, Processing uses a graphical user interface for simplifying compilation and execution of projects. The class seamlessly transitions from coding instruction to practical studio time, where students learn to prototype, develop and showcase their digital arts projects using algorithms to create the most pleasing visual results. *Write Code… Make Art!*

SPRING SEMESTER COURSES

American Film and Beyond (s)

36450
Grade Level: 10th - 12th
Prerequisite: None

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 though 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.

Intermediate Drawing (s)

66631
Grade Level: 10th - 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.

STEAM-101: The Coding Palette (s)

78611
Grade Level: 9th - 12th
Prerequisite: None
Note: This interdisciplinary course can fulfill a Computer Science or Art requirement

Positioned squarely at the intersection of Computer Science and Visual Arts, the Coding Palette course 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 also articulate their personal artistic vision with digital tools.

Extensively project-based and focused on collaborative team-work, the class uses MIT Media Lab's open-source Processing language, offering a digital sketchbook for learning how to code within the context of the visual arts. Similar but simpler than Java, Processing uses a graphical user interface for simplifying compilation and execution of projects. The class seamlessly transitions from coding instruction to practical studio time, where students learn to prototype, develop and showcase their digital arts projects using algorithms to create the most pleasing visual results. *Write Code… Make Art!*

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. Students will perform for concerts and assemblies during the school year.

Morning M.O.B.

68320
Grade Level: 9th - 12th
Prerequisite: Audition will take place the first week of school.

Men Of Brunswick is an audition-based class designed for singers that can 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. This class offers opportunities for students to develop team-building and leadership skills while performing various styles of music such as pop, gospel, classical and musical theater. Students will perform at our three major concerts in the fall, winter, spring and also include football games and various events throughout the school year. The ensemble will be limited to 20-25 members and will meet three mornings per week.

Bel Canto

66100
Grade Level: 9th - 10th
Prerequisite: None

This course is open to any GA student who is 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 2024.

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.

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 full year 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. Classes will be held on both campuses: one semester at Brunswick and one semester at Greenwich Academy.

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.

Honors 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.

Honors 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

2022-2023 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 intellectually rigorous environment for students to learn. We offer courses that connect students to topics they care about, and the opportunity to learn alongside a global network of peers as passionate and curious as they are.

We have identified the following six core competencies - the specific set of skills and habits of learning - 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 using 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 intellectually rigorous as any course at a home school. These are intensive versions of our most popular signature semester courses specially designed for a 7-week format. Most of these courses cover a semester's worth of material and expect a 10-12 hour per week commitment from students. For Geometry or Spanish 1, which are designed to replace yearlong high school courses, students should expect to dedicate 15-20 hours per week. 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 a 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 Ms. Blunden) or Brunswick (see Mr. Hastings) 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, and must be a sixth course for BR students.
- GOA course grades are listed and reported on student transcripts.
- Students must request GOA courses during GA/BR registration with Ms. Blunden at GA or Mr. Hastings 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 2022-2023

- Semester 1: August 31 – December 16, 2022
- Semester 2: January 11 – April 18, 2023

DEPARTMENT DESIGNATIONS

Unless otherwise noted, courses are one semester long. Some courses are cross-listed and will appear in multiple departments.

Department(s)	Course Title	Term(s)
Art, Media & Design	Architecture	Fall, Spring
Art, Media & Design	Arts Entrepreneurship	Spring
Art, Media & Design	Computer Science II: Game Design and Development	Spring
Art, Media & Design	Creative Nonfiction Writing	Fall
Art, Media & Design	Data Visualization	Fall
Art, Media & Design	Digital Photography	Spring
Art, Media & Design	Fiction Writing	Spring
Art, Media & Design	Filmmaking	Fall
Art, Media & Design	Graphic Design	Fall, Spring
Art, Media & Design	iOS App Design	Spring
Mathematics & Technology	Computer Science I: Computational Thinking	Fall, Spring
Mathematics & Technology	Computer Science II: Game Design and Development	Spring
Mathematics & Technology	Computer Science II: Java	Spring
Mathematics & Technology	Computer Science II: Analyzing Data with Python	Spring
Mathematics & Technology	Cybersecurity	Fall, Spring
Mathematics & Technology	Game Theory	Fall, Spring
Mathematics & Technology	Data Visualization	Fall
Mathematics & Technology	iOS App Design	Spring
Mathematics & Technology	Introduction to Artificial Intelligence (NEW)	Spring
Mathematics & Technology	Introduction to Blockchain and Cryptocurrency (NEW)	Spring
Mathematics & Technology	Linear Algebra	Fall, Spring
Mathematics & Technology	Multivariable Calculus	Yearlong (Fall & Spring)
Mathematics & Technology	Number Theory	Fall
Mathematics & Technology	Problem Solving with Engineering and Design	Fall, Spring
Science & Health	Abnormal Psychology	Fall, Spring
Science & Health	Bioethics	Fall, Spring
Science & Health	Developmental Psychology	Fall, Spring
Science & Health	Global Health	Fall
Science & Health	Introduction to Psychology	Fall, Spring
Science & Health	Medical Problem Solving I	Fall, Spring
Science & Health	Medical Problem Solving II	Fall, Spring
Science & Health	Neuropsychology	Fall, Spring
Science & Health	Positive Psychology	Fall, Spring
Science & Health	Problem Solving with Engineering and Design	Fall, Spring
Science & Health	Social Psychology	Fall, Spring
Social Sciences	9/11 in a Global Context	Spring
Social Sciences	Applying Philosophy to Global Issues	Fall
Social Sciences	Business Problem Solving	Fall, Spring
Social Sciences	Climate Change and Global Inequality	Fall, Spring
Social Sciences	Entrepreneurship in a Global Context	Fall, Spring
Social Sciences	Gender & Society	Spring
Social Sciences	Genocide and Human Rights	Fall, Spring
Social Sciences	How to Argue Well (NEW)	Fall, Spring
Social Sciences	International Relations	Fall, Spring
Social Sciences	Introduction to Artificial Intelligence (NEW)	Spring
Social Sciences	Introduction to Blockchain and Cryptocurrency (NEW)	Spring
Social Sciences	Introduction to Branding & Marketing (NEW)	Spring
Social Sciences	Introduction to Investments	Fall, Spring
Social Sciences	Introduction to Legal Thinking	Fall, Spring
Social Sciences	Macroeconomics	Fall, Spring
Social Sciences	Microeconomics	Fall, Spring
Social Sciences	Personal Finance	Fall, Spring
Social Sciences	Prisons and Criminal Justice Systems	Fall, Spring
Social Sciences	Race & Society	Fall, Spring
Social Sciences	Religion & Society	Spring

ALPHABETICAL LIST OF COURSES

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.

ABNORMAL PSYCHOLOGY: This course provides students with a general introduction to the field of abnormal psychology from a western perspective while exploring the cultural assumptions within the field. Students examine the biopsychosocial aspects of what we consider abnormal while developing an understanding of the stigma often associated with psychological disorders. Through book study, videos, article reviews, and discussions, students consider how our increasingly global world influences mental health in diverse settings. In learning about the different areas of western abnormal psychology, students study the symptoms, diagnoses, and responses to several specific disorders such as anxiety, depression, eating disorders, or schizophrenia. Students develop an understanding of how challenging it can be to define "normal" as they begin to empathize with those struggling with mental distress. Throughout the course, students are encouraged to attend to their own mental well-being. The course culminates in an independent project where students showcase their learning with the goal of making an impact in their local communities.

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.

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 techniques to track, reflect, and evidence their understanding of architecture.

ARTS ENTREPRENEURSHIP: In this course, aspiring visual artists, designers, filmmakers, musicians, and other creatives will learn how to find success in the dynamic fields of their choosing. Students will learn about arts careers and organizations by attending virtual events and interviewing art practitioners, entrepreneurs, and administrators. Beyond exploring trajectories for improving their crafts, students will build skills in networking and personal branding while examining case studies of a variety of artistic ventures—some highly successful and some with teachable flaws. Using real-world examples of professional and emerging creatives and arts organizations, students will gain a better understanding of the passion and dedication it takes to have a successful creative career.

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.

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.

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.

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 using Datawrapper, Tableau Public and/or Python. 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.

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.

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.

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.

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? We will collaborate in workshops with classmates to deepen our collective understanding of the complex issues surrounding climate change. Throughout the semester, we will meet with professionals working in the field of climate change, and 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, as they present their individual projects to spark change in local communities through well-informed activism.

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.

COMPUTER SCIENCE II: ANALYZING DATA WITH 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.

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.

CYBERSECURITY: 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 cybersecurity issues. There is no computer science prerequisite for this course, though students with some background will certainly find avenues to flex their knowledge.

DEVELOPMENTAL PSYCHOLOGY: Over a few short years, most human beings grow from infants who are not even able to hold up their heads to become walking, talking, thinking people who are able to communicate using language, to understand complexities, to solve problems, and to engage in moral reasoning. This course is an introduction to the fascinating study of human growth and development focusing on the significant changes that occur physically, emotionally, cognitively and socially from birth through adolescence. Students consider the big questions of heredity versus environment, stability versus change, and continuity versus discrete stages of change as they investigate language acquisition, sensorimotor development, thinking and learning, and personality and emotions. Through readings, observations, case studies, and application activities, students examine development from the perspectives of major theorists in the field from both Western and non-Western traditions.

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.

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.

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.

GAME THEORY: In this course, we explore a branch of mathematics known as game theory, which uses mathematical models to inform decision making. There are many applications to everyday dilemmas and conflicts, many 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. We examine models of world conflicts and scheduling of professional athletic contests. Specific topics include two-person zero-sum games, two person non-zero-sum games, sequential games, multiplayer games, linear optimization, and voting theory.

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.

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.

HOW TO ARGUE WELL: This course, which teaches critical thinking skills through argument mapping, offers students the opportunity to make a significant intellectual leap and improve not only their performance in school but also their ability to engage in productive arguments. When your teachers push you to "be more specific" or ask, "Where is your evidence?" or say you need more "analysis," they are highlighting your need to improve your critical thinking skills. Research has measured argument mapping as being a more effective learning tool than a semester at college when it comes to developing these skills, and it is this skill set that best predicts one's performance in school and one's performance on standardized tests, as well. Further, bad arguments are what give arguments a bad name. We live in a world of polarized communications where name-calling, emotion, and blurred lines between fact and fiction result in arguments based on extreme opinions that eclipse reason. The problem is not that we are arguing: the problem is that we do not know how to engage in arguments using logic and reasoning. These skills – the bedrock of critical thinking – give people the ability to argue thoughtfully and effectively. Good arguments are illuminating, generative, and compelling. This course will teach students how to master and deploy critical thinking skills to think independently; improve academic performance across disciplines; create, assess, and engage thoughtfully in arguments; and successfully forge community in the process.

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 ARTIFICIAL INTELLIGENCE: Aspects of artificial intelligence permeate our lives and the algorithms power your favorite apps. How much do you really know about how AI works or how it is changing the world around us? This course will explore the history of research into artificial general intelligence and the subsequent focus on the subfields of narrow AI: Neural networks, Machine Learning and Expert Systems, Deep Learning, Natural Language Processing, and Machine Vision and Facial Recognition. Students will learn how AI training datasets cause bias and focus on the ethics and principles of responsible AI: fairness, transparency and explainability, human-centeredness, and privacy and security.

INTRODUCTION TO BRANDING & MARKETING: In our increasingly digitized world, we are bombarded by ads everyday and presented with an immeasurable amount of content across all media platforms.. It has become increasingly difficult for brands to break through the noise and capture the attention of their intended audience. In this course, students learn what it takes to build an effective brand that can authentically connect with consumers and create long-term brand equity. The course starts with introducing what a brand is and goes on to explore how different branding elements, such as Visual Identity, Advertising Strategy, Content Marketing, as well as the intangible elements of the Customer Journey, come together to create a unique Brand Experience. By applying marketing theories, interviewing experts, and analyzing modern case studies, students will develop and strengthen their competencies as brand strategists. Students will also examine how responding to important ethical, social, and environmental issues can impact the brand's success. The course culminates in a final project where students collaborate to design an impactful brand campaign for a mission-driven company, organization, or initiative.

INTRODUCTION TO BLOCKCHAIN & CRYPTOCURRENCY: Much attention has been brought to the cryptocurrency space by the meteoric rise in the valuation of Bitcoin and other cryptocurrencies. More recently, meme tokens have also grabbed the spotlight. When thinking about cryptocurrency, there is much more to consider than just market capitalization or coins named after canines. Introduction to Blockchain & Cryptocurrency is an entry level course for anyone excited by the space. This course explores how we arrived at the place we are now, and what the current and possible applications of crypto are. We'll explore how markets in crypto operate, where they've received practical application, and where the space may head in the future through the lenses of creators, consumers, and governments. In addition, we will take a deeper look at blockchain, the underlying technology that powers cryptocurrencies, and it's many, far-reaching implications for the future of government, business, the arts and more.

Each lens represents a different way to view the complex and interrelated causes and outcomes of the changing crypto landscape. Using a variety of technologies and activities, students work individually and with peers to evaluate each lens. Students then analyze and explore how these technologies may shape and disrupt the future not only of the crypto space, but of many current and future industries.

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.

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.

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 (iPhone or iPad) is also highly recommended.

LINEAR ALGEBRA: In this course students learn about the algebra of vector spaces and matrices by looking at how images of objects in the plane and space are transformed in computer graphics. We do some paper-and-pencil calculations early in the course, but the computer software package Geogebra (free) will be used to do most calculations after the opening weeks. No prior experience with this software or linear algebra is necessary. Following the introduction to core concepts and skills, students analyze social networks using linear algebraic techniques. Students will learn how to model social networks using matrices as well as discover things about the network with linear algebra as your tool. We will consider applications like Facebook and Google. Prerequisite: Geometry and Algebra 2 or the equivalents.

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.

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, interviewing a patient, and creating a new mystery case.

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, MPS II 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.

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.

MULTIVARIABLE CALCULUS: In this course, students learn to differentiate and integrate functions of several variables. We extend the Fundamental Theorem of Calculus to multiple dimensions and the course will culminate in Green's, Stokes' and Gauss' Theorems. The course opens with a unit on vectors, which introduces students to this critical component of advanced calculus. We then move on to study partial derivatives, double and triple integrals, and vector calculus in both two and three dimensions. Students are expected to develop fluency with vector and matrix operations. Understanding parametric curves as a trajectory described by a position vector is an essential concept, and this allows us to break free from one-dimensional calculus and investigate paths, velocities, and other applications of science that exist in three-dimensional space. We study derivatives in multiple dimensions and use the ideas of the gradient and partial derivatives to explore optimization problems with multiple variables as well as consider constrained optimization problems using Lagrangians. After our study of differentials in multiple dimensions, we move to integral calculus. We use line and surface integrals to calculate physical quantities especially relevant to mechanics, electricity and magnetism, such as work and flux. We will employ volume integrals for calculations of mass and moments of inertia and conclude with the major theorems (Green's, Stokes', Gauss') of the course, applying each to some physical applications that commonly appear in calculus-based physics. Prerequisite: The equivalent of a college year of single-variable calculus, including integration techniques, such as trigonometric substitution, integration by parts, and partial fractions. Completion of the AP Calculus BC curriculum with a score of 4 or 5 on the AP Exam would be considered adequate preparation.

NEUROPSYCHOLOGY: Neuropsychology is the exploration of the neurological basis of behavior. Within this course, students will learn about basic brain anatomy and function as well as cognitive and behavioral disorders from a neurobiological perspective. They will do an in-depth analysis of neural communication with an emphasis on how environmental factors such as smartphones affect nervous system function, their own behaviors, and the behaviors of those around them. Students will also have the opportunity to choose topics in neuropsychology to explore independently including Alzheimer's disease, Addiction, Neuroplasticity, and CTE and share their understanding with their peers in a variety of formats. The course concludes with a study of both contemporary and historic neuropsychological case studies and their applications to everyday life.

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.

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.

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.

PRISONS AND CRIMINAL JUSTICE SYSTEMS: How do societies balance individual freedoms with security? How do definitions of "crime" and "punishment" shift across jurisdictions and time periods? How do recent protests and discussions about racial biases and systemic racism inform our understanding of criminal law and its applications? Although the United States has been frequently cited as having the highest "mass incarceration" rate, other countries in the world have also been criticized for injustices in their criminal justice systems. 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 systems while grappling with mass incarceration as a legal, ethical, and practical issue. To understand current views on crime and criminal punishments and to examine proposed systemic reforms, we immerse ourselves in the different forms of rhetoric and media that brought the U.S. and other nations to our present. We read and analyze jury arguments, courtroom motions, news op-eds, judicial decisions, recent cases, and other forms of public persuasion that shape the outcomes of criminal defendants. The final project requires students to advocate for a major reform to a criminal justice system in a city, state, or country. Having developed research skills, students apply them to build an effective argument that includes a real-world solution.

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!

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.

RELIGION & SOCIETY: Religion is one of the most salient forces in contemporary society but is also one of the most misunderstood. What exactly is religion? How does religious identity inform the ways humans understand themselves and the world around them? How can increased levels of religious literacy help us become more effective civic agents in the world today? Students in this course will conduct several deep dives into specific case studies in order to understand how religious identity intersects with various systems of power, including race, gender, class, sexual orientation, and ethnicity. By engaging with material from a variety of academic fields (history, sociology, anthropology, psychology), students will grapple with the complex ways in which society and religious identity relate to one another.

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 primarily in relation to outcomes tied to the competencies.