

C=2Fr

s dar

Yx

\$ (50-2x)

# CONTHE MESA

 $A_s = x^2$  $A_c = mc^2$ 

50-20

¥ -

(11-4)s

100)

100

100= x (x4)

X

Asur

## Cate School Curriculum

At Cate, students chart their course of study through a curriculum unlike that of any other high school. It begins freshman year, with a deep dive into an interdisciplinary study of the Humanities. In subsequent years, students supplement core courses with rigorous and engaging advanced classes, independent study, and an array of unique electives — all taught by an expert and committed faculty. Our curriculum promotes the greatest possible growth for each student, and meets the demands of even the most advanced learners.



### GRADE-LEVEL THEMES

Grade 9 Orientation and Organization

Grade 10 Awareness and Responsibility

Grade 11 Connections and Purpose

Grade 12 Mastery, Self-Determination, and Leadership





### TYPICAL COURSES

### Grade 9

Humanities (English/History) Mathematics Foreign Language Physics Foundation Arts Freshman Seminar

#### Grade 10

English 10 Mathematics Foreign Language Sophomore History Arts Chemistry Sophomore Seminar

#### Grade 11

US History Biology English 11 Mathematics Foreign Language

### Grade 12

English 12 in the fall and an English elective in both the winter and spring trimesters.

### GRADUATION REQUIREMENTS

### Arts

Foundation Arts in the first year and two additional upper level courses.

English

One course per year.

Foreign Language Successful completion of a third-year course.

#### History

One course in each of the first two years and United States History in the junior or senior year.

#### Human Development

Freshman Seminar in the ninth grade and Sophomore Seminar in the tenth grade.

### Mathematics

One course per year through the junior year. All students are expected to complete Math 30: Integrated Algebra 2 and Trigonometry.

### Science

Physics in the freshman year, Chemistry in the sophomore year, and Biology in the junior or senior year.

#### Humanities

One course in the freshman year.

### EDUCATIONAL PRINCIPLES

### Each student will develop:

Knowledge – essential knowledge and core competencies and standards of honorable scholarship

Curiosity — a desire to discover the unknown and acquire the ability, imagination, and initiative to ask and pursue questions of real value

Compassion — recognition of the needs and interests of others; empathy and respect; the skills of collaboration, leadership, membership, and service

Determination — the ability to identify worthy risks; the methods and skills of the academic disciplines and one's own best learning practices; the grit, patience, and self-discipline to persist at hard work; the resilience to deal with both failure and success

Communication — the skills to collaborate productively with others, to present information clearly, and to be effective presenters, listeners, and respondents employing verbal, quantitative, and visual languages skillfully, using a range of media

### A CULTURE OF INQUIRY

C ate is powered by curiosity and enriched by a culture of inquiry. Our objective is to equip students to be lifelong learners who possess the mindset, passion, and skills to know how to pursue their education in a manner that is collaborative, disciplined, and impactful. Central to enabling such a mindset is an inquiry approach to learning which challenges students to make close observations, ask insightful questions, and develop connecting and often interdisciplinary inferences. From this, students ultimately share their findings in ways that are effective as well as rewarding to them, their peers, and the broader world.

### ENGLISH

### HUMANITIES

Year course. Freshman Humanities serves as a gateway course to learning at Cate and to Cate's culture of inquiry. Multidisciplinary in nature and closely coordinated in execution, it follows the practices of the humanities by developing and exploring essential questions of human nature and the diversity of human experience in the historical eras of the past and in contemporary society. Specifically, students engage with authentic, anchoring artifacts of literature, history, art, architecture, and religion drawn from the classical to early modern eras of Western civilization. With an emphasis on disciplined student inquiry, meaningful discussion, oral presentations, creative and analytical writing, and research, this course builds the skills and knowledge that are needed for success in the freshman year and beyond.

### ENGLISH 10

Year course. In the tenth grade, students read challenging works in all major literary genres (poetry, short stories, essays, drama, memoirs, and novels); they also write extensively, study grammatical principles, learn new vocabulary, and contribute regularly to classroom debates and discussions. The course emphasizes the effective use of sensory detail and dialogue in personal writing; students also continue to practice forming, developing, and supporting ideas in analytical writing. As readers, they are trained in more sophisticated forms of literary response; they learn to identify the elements and purposes of many types of creative expression, and to shape their insights into clear, defensible statements. Finally, students continue to hone their listening and speaking skills in the classroom, expressing themselves clearly and responding carefully to the views of others.

### ENGLISH 10 HONORS

Year course. English 10 Honors is an advanced section of English 10 for our most accomplished sophomores. The pace is faster and the expectations are higher; Honors students do more reading and writing than the sophomores in the regular sections, and their work is held to a higher standard. To a greater extent than other tenth-graders, they should be self-reliant, attentive to language, able to apply previously learned skills, quick to learn new tools and strategies, knowledgeable about certain literary concepts, and eager to share their opinions in the classroom. They also need to be genuinely interested in reading, discussing, and writing about literature.

### ENGLISH 11

Year course. In the 11th grade, students read American fiction, nonfiction, drama, and poetry; they also write regularly in several forms, study the advanced principles of grammar, and begin to use etymology for rapid vocabulary acquisition. Teachers focus on strategies for achieving dynamic description and narration in stories and personal essays; of equal importance are the methods of investigation, persuasion, and argumentation in analytical work. Students are increasingly responsible for the success of classroom conversation; they are expected to exhibit open-minded and respectful partnership in the many discussions, workshops, and presentations that comprise the junior year at Cate.

### ENGLISH 11 ADVANCED

Year course. Advanced English 11 is a challenging course designed to prepare students for the reading and writing assignments they'll encounter in literature courses at the college level. The reading assignments are occasionally longer, the writing assignments are more frequent, and there is an increased emphasis on analytical skills: close scrutiny of language, demonstrating an awareness of rhetorical devices; facility of interpretation, including the secure use of abstract terms; and logical argumentation, including the use of quotation and secondary sources. Students are increasingly responsible for independent synthesis of all elements of a reader's experience into original and coherent ideas.

### ENGLISH 12

Fall trimester. Senior English offers students an opportunity to practice the reading and writing skills introduced during the preceding three years. The course begins with a writing unit focused on the college essay; the rest of the term varies and is sometimes devoted to a reading of *Hamlet* and sometimes to a unit on Modernism. In all cases, texts include poetry. In the winter and spring terms, seniors enroll in electives of their choice; the department routinely offers a wide range of writing workshops and focused literary seminars.

### ENGLISH 12 ADVANCED

Fall trimester. Advanced English 12 is an especially rigorous and challenging course. Command of the fundamentals of literary study is assumed, and students invited into the course are required to think and write independently and to take responsibility for the success of all workshops and discussions. As readers, they are expected to be capable of making nuanced inferences and of articulating sophisticated views supported by thoughtful analysis of the text. As writers, they are expected to be capable of independently crafting essays that demonstrate mastery of a wide range of creative and analytical skills.

#### WAIT! YOU HAVEN'T READ THAT?

Winter and spring trimester. We read a wonderful variety of novels and plays during the four years a student spends in the study of English at Cate, but, inevitably, we miss a few of the landmark works along the way. Depending on student interest, this course will introduce pieces by either American or English authors; we'll draw from a list that includes Twain, Faulkner, Hemingway, Fitzgerald, McCullers, Didion, Vonnegut, Erdrich, and McCarthy; or Austen, Bronte, Dickens, Eliot, Trollope, and Hardy. The focus of the course is on reading and discussion; we'll be covering a lot of ground quickly.

#### DON QUIXOTE

Winter trimester. In this course we'll read Part 1 of Miguel de Cervantes' epic two-part novel, originally published in 1605. Among the most influential and best-loved books ever written, *Don Quixote* defies description; while combining elements of ancient, medieval, and Renaissance literature, it manages to be profound, poetic, philosophical – and very funny. Find out why people all over the world have loved this book for 400 years!

### DO THE RIGHT THING!

Winter trimester. In this course we'll see how even the most morally upright characters can find themselves mired in extremely sticky ethical situations. We'll read stories, plays, and a short novel or two that provide riveting examples of this awful but all-too-familiar human experience. Our list of authors will include Joseph Conrad, Henrik Ibsen, and others – all of whom understood that it's not always easy to do the right thing!

### THE SCHOOL OF HARD KNOCKS

Winter trimester. Oliver Twist and Great Expectations. Orphans and convicts; pickpockets and murderers; love, hatred, ambition, and revenge: all is captured in two of Charles Dickens' most compelling novels. We will follow Oliver and Pip, the young heroes of these books, as they struggle to make their ways in a confusing world.

### THIS AMERICAN LIFE (ACCORDING TO YOU)

Winter trimester. We will take as our inspiration some of the most compelling radio shows on the air today, namely: *This American Life, Radio Lab*, and *The Moth Radio Hour.* The course will be divided into three-week sections, each devoted to studying a different medium employed on these shows: interviews, essays, short stories, stories told live, and whatever else we discover that motivates and excites us. For the final assignment of the course you'll work with two other students to create an episode on a single theme – love, hate, adventure, change, things that go bump in the night, etc. – and you'll turn that episode into a podcast to be featured on the Cate website.

### J.D. SALINGER

Winter trimester. Most students will have read Salinger's *Nine Stories* their sophomore year. This seminar is offered to give them the opportunity to read the rest of Salinger's oeuvre (the bound part anyway). That includes *The Catcher in the Rye, Franny and Zooey, Raise High the Roofbeam Carpenters,* and *Seymour: an Introduction.* In addition to Salinger's own work, we will be looking at the dramatic shifts in his critical reception over time, those elements of his biography that are pertinent to his fiction, and also some of the religious ideas and texts that informed his work and artistic process.

### POETRY WORKSHOP

Spring trimester. In this creative writing course, our focus will be on student writing. The majority of our classes will center upon workshop critiques of each other's poems. We will also read and discuss work by major American poets, many of them still working today.

### UNCONVENTIONAL HEROINES

**Spring trimester.** This course will follow the daring – or at least unusual – paths of female protagonists who choose to live their lives a little differently! We'll devote the first half of the trimester to Jane Austen's *Pride & Prejudice*; after that, we'll read several shorter works – by Henrik Ibsen, Kate Chopin, Isabel Allende, and other writers who earned their reputations by ignoring (even defying) societal norms.

### THE PLAY'S THE THING

Spring trimester. This course offers seniors the chance to dedicate a full trimester to reading nothing but plays, with an emphasis on modern and contemporary works by American and English dramatists. For our material, which we will both read and watch, we will be drawing from a list of playwrights including Eugene O'Neill, Tennessee Williams, Edward Albee, Samuel Beckett, Arthur Miller, Lillian Hellman, and more current voices as well, including David Auburn, John Patrick Shanley, and Yasmina Reza.

### MIDCENTURY MADNESS: SALINGER/KEROUAC/PLATH

Spring trimester. Nothing better illustrates the weirdness of postwar life in America than the combination of J.D. Salinger, Jack Kerouac, and Sylvia Plath, all of whom were writing their most famous books at the dawn of the nuclear age. Among other things, we'll read A Catcher in the Rye, On the Road, and The Bell Jar.

### MODERN WORLD LITERATURE

Winter and spring trimester. In this course students sample literature from around the world – novels, short stories, poems, and graphic novels that reveal the great diversity of human experience. Among the possible readings are *Deep Rivers* by Jose Maria Arguedas (Peru), *Half a Yellow Sun* by Chimamanda Ngozi Adichie (Nigeria), *Men In the Sun and Other Palestinian Stories* by Anouar Benmalek, *Persepolis* by Marjane Satrapi (Iran), and *A Thousand Years of Good Prayers* by Yiyun Li (China).

### FICTION WORKSHOP

Winter trimester. The purpose of the Fiction Workshop is to give seniors an opportunity to explore and apply the narrative skills they've been honing over their previous years at Cate, with a clear emphasis on creating fiction. Students will experience how such workshops are run at the undergraduate, graduate, and postgraduate levels. To that end, all students will be asked to submit original work to the group on a consistent basis and to respond to the work of others in a manner that is critical, constructive, and supportive.

### CAUGHT BETWEEN WORLDS

Winter and spring trimester. Many of us in the U.S. lead divided lives – one of loyalty to a traditional culture and one of assimilation into mainstream America. In this course students will read stories that explore the unique tensions that arise for "hyphenated" Americans (African-Americans, Asian-Americans, Mexican-Americans and many others) as they grapple with opposing expectations and the difficulty of navigating two worlds simultaneously.

### CREATIVE NONFICTION

Winter trimester. This course is part study of literature, part workshop. In this senior elective students will read recently published nonfiction – from full-length memoirs to brief lyrical essays – seeking to understand how various types of nonfiction operate, and how we can use this understanding to write some of our own.

### VIRGINIA WOOLF

Winter trimester. Virginia Woolf was an English writer considered one of the foremost modernists of the twentieth century. Her career spanned the years between the end of World War I and the beginning of World War II. In this elective students will read a collection of her works that may include *Mrs. Dalloway, To the Lighthouse,* and *The Waves,* identifying both how she was influenced by and how she influenced the time and place in which she wrote.

### INTRODUCTION TO AMERICAN FILM

Spring trimester. Industry? Art? Technology? Popular culture? A consideration of American film might include history, cinematography, sound, editing, set design, special effects, acting, directing, production, distribution, merchandising, and more. This course is an introduction to the methods by which one "reads" a film. The abiding purpose is to examine each film as a purposefully created universe, whose tone, color, language, framing, and speed are all a product of specific and discernible choices.

### LOVE IN ALL THE WRONG PLACES

**Spring trimester.** This is a mixed-media course on the difficulty of having a lasting relationship in this crazy world – a world of ongoing political crisis and moral outrage. Students read and watch the work of modern masters such as Nadine Gordimer (*Crimes of Conscience*), Art Spiegelman (*Maus*), and Milan Kundera (*The Unbearable Lightness of Being*).

### SCREENWRITING

Spring trimester. This course will principally rely for its content on the submitted work of students. All work will be written in the screenplay or teleplay format. Given the technical requirements and peculiarity of such forms, students will be paying heed to the more rigorous approaches outlined in various different screenwriting programs (such as Mariner), with the idea of producing a serviceable draft of a finished piece by trimester's end. With that in mind, students will also be examining the work of masters past and present – including the original screenplays, adaptations, and professional reflections of (among others) Robert Bolt, Lillian Hellman, William Goldman, Robert Towne, David Mamet, the Coen brothers, and Charlie Kauffman.

### MATHEMATICS

#### MATH 10: ALGEBRA 1

Year course. This course introduces and emphasizes the basic concepts of algebra, including types of numbers and their properties, variables, operations with expressions, exponents, radicals, axioms, working with polynomials, solving linear and quadratic equations, solving inequalities, and working with rational expressions. Emphasis is placed on developing skills needed for future work in math, problem-solving techniques, logic, and applications to real-world situations.

### MATH 20: INTEGRATED GEOMETRY (ALGEBRA, GEOMETRY, AND STATISTICS)

Year course. This course introduces and stresses the basic topics and concepts of plane and solid geometry, coordinate geometry, including angles, triangles, lines, circles, polygons, area, similarity, congruence, and right angle trigonometry. Emphasis is placed on developing problem-solving skills, logical understanding of theorems and proofs, the deductive reasoning process, and relating the material to realistic applications. Algebra skills and descriptive statistics are integrated into the year to provide depth and math connections.

### MATH 21 H: INTEGRATED GEOMETRY HONORS

Year course. Students who meet a qualifying standard will have the option of participating in our honors Geometry program. This class is not separately scheduled, instead students will be expected to commit to meeting one flex period a week to pursue additional challenges and greater depth of material. Students will also need to meet a certain competency level in these challenges to earn honors credit.

### MATH 25: INTEGRATED PROBLEM SOLVING 2

Year course. Math 25 is a problem-solving course. We study algebra at the conceptual level, but emphasis is placed on the role it plays in mathematical modeling and as a problem-solving tool. Students are expected to be at the very center of the cooperative process, discussing, writing about, and presenting well-reasoned explanations. The pace is swift and requires dedication, but the classroom is also a cooperative environment, one that builds mathematical confidence, understanding, and appreciation of the material. The course includes a strong foundation and review of Algebra and Geometry.

### MATH 30: INTEGRATED ALGEBRA 2 AND GEOMETRY

Year course. This course builds a strong foundation of algebraic principles and skills by reviewing and extending the topics from previous courses. This is achieved through the study of polynomial, rational, radical, exponential, logarithmic, and trigonometric functions. In addition, discrete topics such as sequences, series, the binomial distribution, and combinatorics are considered. Emphasis is placed on the skills of graphing and analyzing functions, problem-solving, and relating the material to real-world applications.

### MATH 31 H: INTEGRATED ALGEBRA 2 AND TRIGONOMETRY HONORS

Year course. This challenging course provides more emphasis on depth, proof, and applications, in addition to studying more topics such as matrices and conic sections. Students are expected to work more independently, with a spirit of inquiry and willingness to seek challenge to investigate why methods work.

### MATH 35: INTEGRATED PROBLEM SOLVING 3

Year course. Math 35 is a problem-solving course, which places both the burden and the excitement of investigation on students' shoulders. Emphasis is placed on the role it plays in mathematical modeling and as a problem-solving tool. Students are expected to be at the very center of the cooperative process, discussing, writing about, and presenting wellreasoned explanations. The pace is swift and requires dedication, but the classroom is also a cooperative environment, one that builds mathematical confidence, understanding, and appreciation of the material.

### MATH 40: INTEGRATED FUNCTIONS

Year course. This course is designed to prepare students for calculus by providing a thorough study of functions, trigonometry, and applications. Students explore the algebraic, numerical, and graphical representations of these functions and their transformations in a variety of contexts.

### MATH 41 H: INTEGRATED FUNCTIONS AND CALCULUS HONORS

Year course. Students in this honors level course should already have a strong background in the various representations of toolkit functions and their transformations. This allows time for exploration of parametric and polar functions, recursion and series, as well as projects in mathematical modeling. Differential and integral calculus, following the Advanced Placement AB syllabus is woven in throughout the first two trimesters and is the main focus of study in the spring term.

### MATH 45: PROBABILITY, STATISTICS, AND CALCULUS

Year course. This course is intended as a non-advanced mathematics elective for juniors and seniors who do not choose to pursue one of the advanced options. In the fall and winter trimesters, the course provides an introduction to the discrete math topics of probability and statistics, including the analysis of data, the conducting of surveys, sampling, experiments, and inference. In the spring the major themes of calculus (the limit, derivative, and integral) are introduced in a conceptual approach with applications, with extensive use of the graphing calculator. Financial applications including the use of spreadsheets will be included.

### MATH 50: ADVANCED CALCULUS 1 (AB)

Year course. This college-level course is designed as in introduction to a variety of topics relating to integral and differential calculus including, functions, graphs, and limits, the conception and application of derivatives, the interpretation and application of integrals, and the fundamental theorem of calculus. The course outline focuses on the tools of Calculus for problem solving. Students will be prepared to take the AP examination in the spring.

### MATH 51 H: ADVANCED CALCULUS 2 (BC)

Year course. This course seeks to challenge students with Calculus topics and a number of topics that prepare students for the Calculus (BC) AP examination but also exceed that syllabus. Emphasis is on theory and more complex problems than those encountered in Calculus 1 and there is emphasis on proof and applications. Topics include a review of differential and integral calculus, advanced integration techniques, applications, infinite series, vector algebra, and vector calculus. Students will be prepared to take the AP examination in the spring.

### MATH 55: ADVANCED STATISTICS

Year course. This course is equivalent to a college level one-semester introductory course in statistics. Its purpose is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad conceptual themes: (1) Exploring data: observing patterns and departures from patterns; (2) Planning a study: deciding what and how to measure; (3) Anticipating patterns in advance: producing models using probability and simulation; and (4) Statistical inference: Confirming models. Students will be prepared to take the Advanced Placement examination in the spring.

#### MATH 61 H: ADVANCED STATISTICS, MULTIVARIABLE CALCULUS, AND LINEAR ALGEBRA

Year course. This course explores advanced collegiate math topics beyond Calculus. In the fall, students study descriptive and inferential statistics at an accelerated pace along with calculus applications. Interested students will be prepared to take the AP Statistics exam in the spring. The winter term will expose students to multivariable calculus including partial derivatives, double and triple integrals, and applications. In the spring, students will be introduced to Linear Algebra.

### MATH 71 H: DIRECTED STUDIES, EDUCATION PROGRAM FOR GIFTED YOUTH (EPGY)

For students who have taken the other math electives offered, independent study is available through our directed studies program. Students can design their own program or follow collegiate online options such as the Stanford EPGY program.

### HISTORY

### SOPHOMORE HISTORY: IMPERIALISM, IDENTITY, AND NATION

Year course. This year long course will explore issues of imperialism, identity, and nationalism, primarily in the nineteenth and twentieth centuries. A third of the year will be devoted to Europe, a third to China, and a third to sub-Saharan Africa. We will study transformation and tradition, inclusion and exclusion, and conflict and consensus. This course will continue to emphasize skills, especially careful reading, focused essay writing, and oral presentation and research methods.

### UNITED STATES HISTORY

Year course. Students will study the origins of the American political system, the development of the American economy and American culture, and the various crises that have beset the country in the 18th, 19th, and 20th centuries. An important goal of this course is to develop interest in America's past by showing its contemporary relevance.

### ADVANCED UNITED STATES HISTORY

Year course. The Advanced section provides a survey of American History with particular emphasis on the use of primary sources, in depth exploration of topics, and historical scholarship.

### ADVANCED SENIOR SEMINAR IN HISTORY

The following three intensive reading and writing courses are designed for seniors who have demonstrated sustained interest in history. They are conducted in the model of college seminars, so students must be committed to leading discussions, reading historical scholarship, conducting independent research, and performing substantive historical analysis.

### THE MODERN PRESIDENCY

Fall trimester. This course will focus primarily on the way in which the role of the presidency has changed and developed in the last century. Students will begin their investigation of the modern presidency by looking at patterns and policies, including various approaches to foreign affairs and to economic and domestic policy in the early twentieth century. The presidencies of Theodore Roosevelt and Franklin Roosevelt will figure prominently in this early discussion. Students will then look at the historical forces that have compelled the presidency to change and identify the ways in which contemporary presidents have developed beyond the Roosevelt models. Students will be expected to conduct individual research that explores a specific challenge of one modern president. They will also write several analytical papers that explore questions pertaining to the contemporary presidency. The course will culminate with a field trip the Reagan Library.

### COMPARATIVE REVOLUTIONS

Winter trimester. What is a revolution? Why do revolutions happen? How do revolutions change societies? This class is a theoretical and historical examination of revolutions, including origins, causes, and results. We will start the class by examining various theories about revolutions and examining two classic examples, The French and Russian Revolutions. We will then use the theories we have studied to examine more modern examples, including the Chinese, Nicaraguan, Iranian, South African, and Eastern European revolutions. Do these fit the model of a classic revolution? A major component of this class will be each student exploring and presenting another revolution outside of the ones we discuss in class using the theories of revolution we have studied and developed. The emphasis here will be on recent upheavals, including ones still in process. Throughout the course we will use a variety of sources, including classic political science essays and primary sources, but also art and film.

### THE MODERN MIDDLE EAST: HISTORY, CULTURE, AND POLITICAL RELATIONS

**Spring trimester.** Students begin the trimester by examining the rich history and dynamic culture of the region. From the dissolution of the Ottoman Empire to the rise of Arab nationalism, the Arab-Israeli conflict,

the role of Iran and beyond, students come to understand the deep historic roots of the many political, economic, social, and security issues that face the modern Middle East today. Simultaneously, by looking at key cultural issues such as Islam, fundamentalism, tradition, and modernity, students develop a cultural relative appreciation for the forces driving the peoples and societies of the Middle East. Finally, by combining the lens of history and culture, the students are then empowered to more critically assess the political interplay between nations of the Middle East and between the United States and the region.

### THE SUPREME COURT AND CIVIL LIBERTIES

Spring trimester. The trimester will focus on the judiciary branch and its influence on American life. Students will explore various issues of civil liberties and civil rights, how the courts have ruled over the years, and where these controversies stand today. There will be an emphasis on reading and understanding Supreme Court decisions and how they affect American society.

### MICROECONOMICS

Fall trimester. This course introduces the basic microeconomic analysis of the decision-making process of consumers, firms, and governments in the marketplace. Students will examine the functions of the four different market structures. Discussions will focus on economic issues such as the trade-off between equity and efficiency, sustainable resource use, and poverty and income inequality. Group presentations, current affairs, and guest speakers will supplement the background provided by the textbook.

### MACROECONOMICS

Winter trimester. This course provides an analytical framework for the understanding of the economy from a broad perspective. Students will analyze the function and purpose of the components of gross domestic product, the causes and cost of inflation and unemployment, and the differences between long-term trends and short-term fluctuations within the economy. A strong emphasis will be placed on using an interactive learning approach through active listening, guest speakers, and team-building projects and discussions.

### ECONOMIC POLICY

**Spring trimester.** This course examines macroeconomic principles and their applications to issues faced by policymakers. Students will learn about current challenges faced by governments and central banks and examine different strategies to address these challenges. The course will investigate certain macroeconomic models used to distinguish long-term trends and short-term fluctuations in key economic indicators such as gross domestic product, unemployment, inflation, consumer confidence, and deficits. The textbook curriculum will be supplemented by team presentations, current affairs, and guest speakers.

### HISTORY RESEARCH

**Trimester or year course.** The purpose of this course is to provide students the opportunity to learn about topics of their own choosing from any aspect of American, Asian, or European history they find interesting. The format for the course is student-conducted independent research, working with history and library faculty, and presentations to the class.

### ANTHROPOLOGICAL PERSPECTIVES

Winter trimester. This trimester elective aims to deepen students' curiosity about the cultural complexity of the world as well as to equip students with the anthropological perspectives and skills to better understand and navigate these complexities in their own lives, both locally and globally. Students will begin by exploring concepts such as: culture and micro-culture; ethnocentrism, cultural relativism, and self and social identity. In addition to interpreting global case studies in light of these concepts, students will be challenged to assess themselves in cultural terms. Students will also devote specific attention to questions of race, ethnicity, and culture as well as explore cross, sexuality, kinship, and marriage. Finally, students will be introduced to two research methods drawn from the field of anthropology: participant observation and ethnography. The trimester will culminate with an ethnographic research project, based on ethnographic research conducted here at Cate or in the local Carpinteria or Santa Barbara community.

### SCIENCE

#### CONCEPTUAL PHYSICS

Year course. Conceptual Physics is an algebra-based physics course designed for freshmen. Students investigate the traditional concepts of motion, force, work, energy, waves, sound, and electricity, in preparation for chemistry. Instructional methods follow a research-based guided-inguiry model that capitalizes on hands-on, cooperative learning where students construct their knowledge and find answers to their questions as they investigate and practice scientific inquiry in the laboratory. Students demonstrate their knowledge and are evaluated using traditional assessments, scientific journaling, and performance assessments. The course emphasizes finding and describing patterns in nature, depth over breadth of material, fostering and leveraging disciplined curiosity, and sharpening scientific inquiry practices. Students should leave the course with a firm conceptual understanding of physics and the nature of science. In addition, students they will leave with many skills including, but not limited to, scientific inquiry practices, lab set up and design, and data collection and analysis using digital probes and software.

### PHYSICS WITH TRIGONOMETRY

Year course. Physics with Trigonometry is the foundational science class for incoming freshmen at Cate with an advanced mathematical background. Students will construct an understanding of how things move (kinematics) and why things move (dynamics) as they conduct laboratory investigations and build conceptual and mathematical models. Students will also explore the great conservation laws, those of momentum and energy, as they deepen their understanding of the physical world. Finally, students will examine wave phenomena, from oceans to earthquakes, as a manifestation of the movement of energy. Throughout, students will develop their skills in inquiry as they ask and answer questions while conducting hands-on, collaborative investigations. Students will learn to approach problems through and as an extension of their deep conceptual understanding. Upon completion, students will be well-prepared to continue the application of scientific inquiry practices, digital data collection, organization, and analysis to chemistry, biology, and the rest of the Cate science curriculum.

### CHEMISTRY

Year course. This introductory lab-based course is designed to foster deductive reasoning in the context of environmental challenges. The curriculum will examine material, atmospheric, organic, water, and nuclear chemistry. After completing this year course students will be able to describe matter in terms of elements, atoms, compounds, and any changes in these fundamental building blocks during chemical reactions. They will be able to explain chemical and physical properties of materials through an understanding of the structure and arrangement of atoms, ions or molecules and the forces between them. Students will recognize that changes in matter involve the rearrangement of atoms and the sharing or transfer of electrons. They will be able to apply the laws of thermodynamics first explored in physics to explain and predict the direction of changes in matter.

#### CHEMISTRY HONORS

Year course. This introductory lab-based course is designed to foster deductive reasoning in the context of environmental challenges. The curriculum will examine material, atmospheric, organic, water, nuclear, industrial, and food chemistry. After completing this yearlong course students will be able to describe matter in terms of elements, atoms, compounds, and any changes in these fundamental building blocks during chemical reactions. They will be able to explain chemical and physical properties of materials through an understanding of the structure and arrangement of atoms, ions or molecules and the forces between them. Students will recognize that changes in matter involve the rearrangement of atoms and the sharing or transfer of electrons. They will be able to apply the laws of thermodynamics first explored in physics to explain and predict the direction of changes in matter. Students will use the concepts of collision theory to describe systems in terms of equilibrium and reaction rates. This course will prepare the successful student for the SAT Subject Test in Chemistry.

### BIOLOGY

Year course. This introductory biology course explores the core topics of ecology, cell biology, genetics, and evolution in the context of global environmental and ecological issues. Laboratory inquiry and collaborative research will be stressed in each of these major units and will involve students in real world problems. A rigorous laboratory component supports the exploration of these topics while involving students in the process of science as they pose questions and employ sophisticated equipment and concepts to conduct experiments to answers to these questions. Students will further develop their skills in scientific communications.

### **BIOLOGY HONORS**

Year course. This rigorous first year survey course addresses the core topics of ecology, cell biology, genetics, and evolution while placing particular emphasis on an understanding of biological systems at the molecular level. In the exploration of these concepts students will use sophisticated laboratory techniques to develop skills as functioning scientists. For example, students will participate in the international DNA Barcoding Project that seeks to document all life on earth through the description of species-specific DNA sequences. As part of this project students will be involved in the collection of specimens, the isolation and analysis of specific DNA sequences.

### ADVANCED BIOLOGY

Year course. This second year course allows students to engage in a deeper exploration of life on this planet. Comparable in complexity and depth to college-level biology, students will study the biological world and be well prepared for the demands of further study in life sciences at the university level. Students will examine biological systems at the biochemical, molecular, and cellular levels to better understand how components and processes influence organs, organisms and communities of organisms. Students will develop models to demonstrate understandings, work through case studies to apply their understanding to real world situations, and utilize student generated data to justify and support their scientific explanations. A rigorous laboratory program develops advanced laboratory skills while engaging students in sophisticated inquiry work, which requires students to develop original questions, and design experiments to test and analyze hypotheses both guantitatively and gualitatively. Students will become proficient with sophisticated laboratory equipment, computer interfaced probes and computer modeling programs. Formal and technical writing is emphasized throughout the course.

### ADVANCED CHEMISTRY

Year course. This course is the equivalent of an introductory college course. Each unit begins with a quick review of topics studied in Honors Chemistry and moves quickly to in-depth examinations of atomic and molecular structure, thermochemistry, states of matter, kinetics, equilibrium, oxidation and reduction, and thermodynamics. Emphasis is placed on developing problem-solving skills and understanding the experimental basis of theories. The course has an extensive laboratory component, with many of the labs being guided inquiry.

#### ADVANCED GLOBAL SYSTEMS

Year course. This course examines the integrated system of physical, chemical, biological, and human interactions that determine the past, current, and future states of the Earth. Laboratory and fieldwork allow students to explore course concepts. The course proceeds through three main topics: Human Population and Resources:

An analysis of the prevailing model of human population dynamics and the factors that affect food production, water availability, and ecosystem services.

Earth's Climate: Past and Future:

An examination of the evidence of the Earth's last 550 million years of climate change and an evaluation of the models for predicting future climate.

Energy, the Environment, and Policy:

An exploration of atmospheric pollution and energy development and an analysis of the regional and international political efforts to address them.

### ADVANCED PHYSICS: MECHANICS

Fall trimester. This hands-on course is an introduction to the principles of mechanical engineering. Essential concepts in Newtonian mechanics are examined through a series of group projects designed to improve students understanding of the engineering process and collaborative learning. Topics to be covered include kinematics, dynamics, vector analysis, systems in equilibrium, gravitation and rotational kinematics and dynamics. Engineering design principles will be emphasized throughout the course. Students will test, analyze and predict experimental outcomes by combining a series of individual laboratory results, and communicate conclusions with both written and oral presentations. The course will culminate with a competitive, teambased project focusing on the design and operation of a remotely controlled robotic device.

#### ADVANCED PHYSICS: NEWTONIAN MECHANICS

Winter trimester. This problem-based course honors the historical relationship between physics and calculus, the latter having been created to address problems in the former. Students will develop strong individual and group problem-solving skills as they merge the physics learned in Advanced Physics: Mechanics and with the mathematics from Calculus 1. Students will learn how to handle changing forces and accelerations as well as the dynamics of distributed bodies. Students will further broaden their problem-solving toolkit with an introduction to numerical methods in science.

### ADVANCED PHYSICS: ELECTRONICS

**Spring trimester.** This hands-on course begins with an examination of electrostatics and electrical theory, starting with the simple DC circuit and Ohm's Law. Students will explore the basic components encountered in electrical circuits – resistors, capacitors, inductors etc., and move into circuit analysis and design taking into account reactance and impedance in AC circuits. In conjunction with the study of basic electrical systems students will examine magnetism and Faraday's Law to understand the basic theory and types of transformers, from which they will move on to study solid state electrical elevtrice. The course presents rectifiers and filters, before an in-depth look at amplifier theory, applications and types, including oscillators and tuned, differential and operational amplifiers.

### TRANSMISSION GENETICS

Fall trimester. This trimester elective examines the details by which genetic information is transferred from one generation to the next and how that information is transformed into the physical expression of traits. Students will begin by identifying basic cell structure, distinguishing between asexual and sexual reproduction, and learning to recognize the basic patterns of inheritance described by Gregor Mendel and to predict the outcome of crosses using Punnett Squares. Advanced studies will include the ability to distinguish more subtle patterns of inheritance, such as sex-linked traits, incomplete and co-dominance, multiple alleles and linked genes, as well as types and effects of different chromosomal mutations. The course will conclude with an examination of the interaction between genes and the environment. Lab work will include the examination of cell anatomy and reproduction, the application of modes of inheritance to crosses with living organisms (yeast), and modeling an experiment to determine the effects of the environment and heredity on human behavior. Students will discuss and debate the ethical issues raised by their studies in stem cells, reproductive technology and eugenics.

### ADVANCED MOLECULAR GENETICS

Winter trimester. This advanced course of study examines the biochemistry of the gene and the applications of current biotechnology. Students will identify the molecular structure of DNA and the mechanics of DNA replication and protein synthesis. Some of the more recent discoveries in molecular genetics will be introduced in order to enhance students' appreciation of the complexity and intricacy of gene expression. Students will become proficient with current biotechnological skills and techniques involving DNA extraction, gel electrophoresis, the polymerase chain reaction, and genetic engineering. Students will simulate, using actual DNA and professional grade equipment, scenarios in crime scene forensics, DNA sequencing, and DNA microarrays. Each student will extract, amplify, and analyze a section of his/ her own DNA, and genetically engineer and clone bacteria to produce a genetically modified organism. Throughout the course, students will consider and discuss the ethical dilemmas associated with the development of these revolutionary ideas and techniques.

### PHYSICAL OCEANOGRAPHY

Fall trimester. The world ocean, which covers 70% of the Earth's surface, is the defining feature of our planet. This elective examines the major physical forces that created our planet and continue to be at work to maintain the ocean as a dynamic. Beginning with important concepts in earth structure and plate tectonics, students will examine how the interaction of the world ocean with continental landmasses and the atmosphere shape the features of our planet. Students will use a variety of Internet resources, such as real-time satellite images, USGS and NOAA data, and color-enhanced and infrared imagery, to explore and better understand how the ocean's chemistry, three-dimensional structure, and global circulation, create the range of habitat that supports Earth's rich marine biosphere.

#### CALIFORNIA COAST

Winter trimester. California's 1,100-mile coastline is an iconic geographical feature and one of the State's most precious resources. This course examines the geological and oceanographic processes that have shaped California's coast, and created a diverse and rich chain of biological communities. Students will explore the ecology and community structure of California's biological marine resources with an emphasis on tidal areas and near shore marine communities. The political and financial ramifications and ecological efficacy of fishery management in coastal waters will be considered in the context of human impact on California's coastline. This course will require two extended field trips and local fieldwork. Our work off campus will focus on an understanding of the nature of California's active coastline.

### **BIOLOGICAL OCEANOGRAPHY**

Spring trimester. This course examines the marine environment as vast interconnected living space with diverse and unique ecosystems distributed horizontally by latitude as well as vertically through the water column – from the pelagic surface and to the abyssal depths. Students will survey major groups of organisms that populate these communities and examine the patterns of interaction that characterize marine ecosystems. Lab work will emphasize representative adaptive strategies of animals from the world ocean's most significant warm and cold-water communities. Field trips will include a day at the Long Beach Aquarium of the Pacific.

### SPORTS MEDICINE 1: INTRODUCTION TO ATHLETIC TRAINING

Fall trimester. This course will serve as a basic introduction to the fields of exercise physiology and kinesiology, physical therapy, emergency management and orthopedic medicine. Through a variety of hands-on experiences and laboratory inquiries, students will be exposed to the basic skills and concepts relating to the prevention, recognition and management of athletic injury, as well as the collaborative health care approach utilized by sports medicine professionals. Students will increase their knowledge and awareness of human anatomy and physiology, a variety of health related conditions, basic first aid and emergency management procedures.

### SPORTS MEDICINE 2: INJURY ASSESSMENT AND REHABILITATION

Winter trimester. Students in the course will further their knowledge and understanding through increased emphasis on practical utilization of skills and knowledge. Coursework will emphasize the hands-on application of assessment techniques and design of appropriate rehabilitation plans based upon case study materials, theoretical scenarios, and observational experiences with athletic trainers and physicians. Students will complete advanced coursework in the areas of anatomy, physiology, exercise physiology and kinesiology. Emphasis will also be placed on the profession of athletic training and concepts related to the practice, professional responsibilities and advancement of the profession.

### FOREIGN LANGUAGE

### FOREIGN LANGUAGE 1 (CHINESE, FRENCH, JAPANESE, SPANISH)

Year courses. Level 1 courses provide an in-depth introduction to French, Spanish, Chinese, and Japanese. The classes emphasize the acquisition of the basic knowledge and skills required for effective communication, including grammatical principles, accent, intonation, and pronunciation. Reading and listening comprehension are also stressed, as are writing skills. Students speak French / Spanish / Chinese / Japanese from the first day of class. A Spanish 1.5 course is also offered to students with previous language study.

### FOREIGN LANGUAGE 2 (CHINESE, FRENCH, JAPANESE, SPANISH)

Year courses. These courses continue to develop the basic language skills introduced in Level 1, with considerable focus on grammar and vocabulary. Besides continued refinement of speaking and listening skills, these courses emphasize the development of concise, well-organized compositions. French and Spanish students also begin to read literature. Honors Spanish is offered at this level.

### FOREIGN LANGUAGE 3 (CHINESE, FRENCH, JAPANESE, AND SPANISH)

Year courses. These are intermediate courses in which students are able to refine and apply the skills acquired in the first two years. Students are required to make numerous oral presentations, read increasingly sophisticated works, and begin to write more fully developed essays. Honors French and Honors Spanish are offered at this level.

### CHINESE 4

Year course. Students in this course will further develop intermediate skills in speaking, listening, reading and writing Chinese, as well as engage in cultural enrichment exercises. Students will refine their abilities to speak clearly about a variety of topics. Particular emphasis will be devoted to raising fluency of the spoken language, expanding vocabulary in traditional and simplified characters, and internalizing more complex grammatical constructions. Directed activities will include role-play situations, observation of native speakers in authentic situations, writing pen-pal letters, practicing calligraphy, reporting on topics of current interest in China, and reporting on field trip experiences.

### CHINESE CINEMA

Winter trimester. Students in this course will view and analyze films from China and Taiwan that are rich in cultural, historical, and artistic significance. In addition to enhancing their knowledge of the complexity and richness of Chinese cultures, students will continue to develop their language fluency and critical thinking skills. Students will also gain comprehension confidence as they sharpen their sensitivities to accents from different regions.

### THE CHINESE IDIOM: ORIGINS OF CHINESE THOUGHT

Fall trimester. This course is designed to immerse students in classical Chinese idioms and popular folktales. For thousands of years, four-character idioms have played an essential role in Chinese culture and literature. They were widely used in Classical Chinese literature and are still common in contemporary Chinese writing and spoken language. Students will learn how idioms are used to communicate and express ideas.

### CHINESE LITERATURE: CLASSICAL TO CONTEMPORARY

**Spring trimester.** This course is intended to give students a basic understanding of traditional Chinese literature. Students in this course will read, analyze, and discuss several short literary masterpieces from classic and contemporary Chinese artists. As some literature is expressed as song lyrics, students will learn how to sing pieces as well. Works to be covered include poems from Tang and Song dynasties, contemporary novels, the Analects, and others.

### **JAPANESE 4**

Year course. Students in this course will develop advanced language skills and cultural sensitivities through close examination of the Japanese

soul. From the immigration experience during the early Meiji Era through internment and the atomic bombings of World War II, students will delve into the Japanese value system and its impact on behavior, perspective, and language elements (keigo, *kotobazukai*, etc.). Students will also explore origins, contexts and applications of these values as they connect the teachings of 16th century tea master Sen no Rikyu to 20th century poet and philosopher Kenji Miyazawa, *haiku* verse and modern environmental policy.

### FRENCH 4

Year course. Students in this class will develop strong language proficiency through the study of literature, art, current events, and cinema. Students will also enrich their cultural competence of the Francophone world through a variety of media (podcasts, videos, TV5 Monde recordings, documentaries, etc.), which are used throughout the course to heighten sensitivity to and comprehension of the myriad perspectives and linguistic characteristics of French across the globe.

### ADVANCED FRENCH LANGUAGE AND CULTURE

Year course. Students in this class will develop strong language proficiency through the study of literature, art, current events, and cinema. Students will also enrich their cultural competence of the Francophone world through a variety of media (podcasts, videos, TV5 Monde recordings, documentaries, etc.), which are used throughout the course to heighten sensitivity to and comprehension of the myriad perspectives and linguistic characteristics of French across the globe. This course will focus on integrating written and aural language skills, as well as acquiring and analyzing information from authentic sources.

#### ADVANCED FRENCH LITERATURE

Year course. The class is conducted entirely in French. Students will approach francophone literature determining the role of justice and its application in the texts studied. Students will discuss content, style, philosophy, gender, race, class, and culture. In this course, students will explore the historical and cultural contexts of the works explored which will include novels, plays, poems, short stories, and film.

### **SPANISH 4**

Year course. This course develops the four skills (reading, writing, speaking, and listening), with particular emphasis on oral communication and cultural competency, promotes student-centered learning, as well as critical thinking skills, and develops reading as a basis for general discussions. The cultural component consists of a general study of the twenty-one countries of the Spanish-speaking world, organized geographically in eight units. Short readings, music, and videos are part of this component, as are projects on art history, geography, and other historical, economic, and cultural topics. Students will be expected to achieve a general understanding of the issues that the Spanish-speaking world faces.

### ADVANCED SPANISH LANGUAGE AND CULTURE

Year course. Through the study of literature, history, art and current events, students will develop strong command of the Spanish language and expand their cultural understanding. A variety of media and materials (such as articles from newspaper and magazines, literature pieces, literary and cultural blogs, videos, documentaries, online news and podcasts, among others) will serve students as a platform for exploration of the Hispanic language and culture. This course will focus on student development of proficiency in integrating language skills, synthesizing written and aural material, acquiring and analyzing information from authentic sources in Spanish, being able to comprehend different dialects and accents of the Spanish-speaking world, and communicating confidently. Students completing this course in good standing will be adequately prepared to take the AP Spanish Language and Culture examination.

### ADVANCED SPANISH LITERATURE

Year course. Students will embark on a literary adventure by reading Spanish works from the 14th to the 21st century. In addition to examining and discussing content and stylistic elements, students will explore the historical background of plays, short stories, novels and poetry. This course requires students to engage in deep analytical thinking and writing while deepening their knowledge of the cultural values, traditions, achievements, and history of the Spanish-speaking world. Students completing this course in good standing will be adequately prepared to take the AP Literature examination.

### HISPANIC CINEMA

Fall trimester. Students in this intensive course will analyze films from a variety of Spanish-speaking countries that are rich in cultural, historical, and artistic significance. In addition to enhancing their knowledge of the complexity and richness of Hispanic cultures, students will continue to hone critical interpretation, analysis and comparison skills. They will continue to develop sophistication and confidence in their speaking and writing as they sharpen their sensitivities to the spectrum of accents, customs, and linguistic nuance Hispanic cultures.

### MAGICAL REALISM

Winter trimester. This course explores Magical Realism and The Fantastic depicted in Hispanic narrative, film, and art. Dating to the early twentieth century, the magical realism genre weaves magical elements into otherwise realistic human situations. Students will examine works from representative authors and artists, such as Cortázar, Dalí, García Márquez, Kahlo, Allende, Borges, Bioy Casares, and Esquivel. Students also view films such as *El laberinto del fauno, Como agua para chocolate* and *Volver*.

### MASTERWORKS OF HISPANIC LITERATURE

**Spring trimester.** Students in this intensive course will read, analyze, and discuss one literary masterpiece of the contemporary Spanish-speaking world. Independent research, documentaries, interviews, and supplementary readings will provide students with the historical and socio-cultural background necessary to understand the culture and context in which the novel was written. Titles include Gabriel García Márquez's *El amor en los tiempos del co'lera*, Mario Vargas Llosa's *La fiesta del chivo*, Carlos Fuentes' *La muerte de Artemio Cruz*, or Isabel Allende's *La casa de los espíritus*.

### HUMAN DEVELOPMENT

### FRESHMAN SEMINAR: WELL-BEING AND SERVICE-LEADERSHIP 1

Year course. Meeting two periods per week and required of all freshmen, this course explores topics of wellbeing and service leadership within the Cate community and beyond. The topics of wellbeing include: nutrition, exercise, meditation, healthy relationships, sexual health, drugs and alcohol, reflective practice, sleep, emotional health and use of technology. Students will also build a foundation in service leadership through the introduction of discovery-based initiatives, outdoor trips and service projects on campus and in the local community.

### FRESHMAN RESEARCH SKILLS

This course introduces students to valuable print and digital resources that they may use for their projects across disciplines; we teach students how to correctly cite sources and how to create lists of works cited; we discuss issues of academic honesty and plagiarism, as well as the ethical use of the Internet; we introduce students to the online resources available at Cate, and we teach them how to become more successful searchers using appropriate keywords and other strategies; we teach students how to effectively use the Internet to find more authoritative websites for their research projects; and we introduce students to the interlibrary loan process.

### FRESHMAN STUDY SKILLS

The Freshman Seminar study skills course will introduce students to the concepts, skills, and strategies of *active* versus *passive* study habits. Students will learn to utilize effective strategies in note taking, reading texts, writing essays, preparing for and taking tests while leveraging their personal learning styles and strengths in the process. In addition, students will cover material regarding important discoveries in brain research, nutrition and learning, and use of multiple intelligences in learning and in the classroom.

### SOPHOMORE SEMINAR: WELL-BEING AND SERVICE-LEADERSHIP 2

Year course. This required sophomore course builds on the foundational skills and material from Freshman Seminar. Students will personalize the wellbeing material to current research and their own lives. Then, continuing

to use the model of service-leadership, students explore several models of leadership, ethics and morality help to establish their own values and develop greater empathy for others. Also, through the development of greater self and group awareness and a growth mindset, students actively engage in leadership as a practice.

### SENIOR TEACHING ASSISTANTS

Year course. Senior Teaching Assistants are selected in the spring of their junior year on the basis of their commitment to work with younger students, their proven dependability and their ability to lead and work cooperatively with others. All TAs are trained in teaching, group leadership and peer counseling skills. Both freshman and sophomore TAs provide personal guidance and support for students and assist in running class discussions and exercises. TAs meet with their section twice a week and meet with other TAs once a week to plan and prepare for the week's classes.

### NEUROSCIENCE AND BEHAVIOR

Fall, winter, and spring trimesters. This course will investigate the structure and function of the brain and nervous system as it relates to complex human behavior. In the fall trimester, students will learn functional anatomy of the brain as well as the biology of nerve cells. During the spring and winter trimesters, students will address mechanisms behind learning, memory, perception, cognition, and emotion as well as disorders such as Alzheimer's, schizophrenia, psychopathy, post-traumatic stress and others. An interactive case study approach that relies heavily upon student research and problem-solving will be used.

### ARTS

### FOUNDATION ARTS

The Foundation Arts program, a prerequisite for higher-level coursework, consists of the combination of Foundation Visual Arts and one of several performing arts course options.

### FOUNDATION VISUAL ARTS

Year course. Foundation Arts students learn essential skills and principles of design through project-based work organized around the core artistic goals of description, expression, function, and aesthetic appeal. They develop an effective creative thinking process, learn valuable skills of project management, and develop the ability to recognize strengths and areas for improvement in their own work and that of others. Foundation Visual Arts students gain familiarity with the media of studio, sculpture/ceramics, and digital arts.

### FOUNDATION PERFORMING ARTS

Year course. Students take one of the following courses as the performing arts component of Foundation Arts: Chorale, Orchestra, Jazz Ensemble, or Introduction to Music.

### ADVANCED TOPICS IN ART HISTORY

Year course. The arts have always been the means through which men and women have given form to the most amazing and profound ideas, beliefs, and emotions, so we encounter wonderful things in our study of art history. Students will gain a clear overview of cultural history, including a framework of key events and ideas, as depth of study on most topics replaces sheer volume. The art history program develops skills in reading, writing, and observation, and students learn how to read a wide range of written works, including texts, critical and analytical pieces, works of journalism, and literature. They develop skills of expository and analytical writing essential for college study as well.

### INTRODUCTORY CERAMICS/SCULPTURE 1

Year course. Ceramics 1 students spend the majority of the year learning how to throw and trim clay on the pottery wheel. By the end of the year, they will be able to throw and trim bowls, platters, vases, jars with lids, pitchers, jugs, mugs, and a teapot. Basic decorating practices are also utilized to enhance each piece. By the end of the year, Students will begin to demonstrate through the glazing of their pieces a harmony in the relationship between a form and its colors and decoration.

### INTERMEDIATE CERAMIC DESIGN

Year course. This course focuses on more sophisticated throwing and trimming techniques and offers opportunities for greater self-expression. Hand-building and slab construction are also important aspects of the curriculum. By the end of the year, students will be able to create larger forms by throwing sectionals and using a variety of slab construction techniques. Greater focus is devoted to general aesthetic principles, and time is spent comparing classical Western ideals with those of a strong Japanese influence within the world of ceramic art. By the end of the year, students will have used a variety of more advanced decorating techniques – including slip trailing, carving, incising, and fluting – to capture elements of different aesthetics.

### ADVANCED CERAMICS/SCULPTURE

Year course. This advanced course provides an ambitious and intensive exploration of the expressive and functional aspects of stoneware and porcelain clays. A developmental sequence of assignments during the first semester helps students gain the advanced technical skills for both sculpture and thrown ware. During the second semester they design their own projects with an emphasis on in-depth exploration of form, design, decoration and glazing. Advanced students are called upon to instruct beginning potters in the capacity as teaching assistants during the first semester. Students who wish to participate in the Advanced Placement program of the College Board will develop a portfolio of work to be submitted in the spring. That body of work must conform to the curriculum mandated by the AP program.

### STUDIO ART 1

Year course. Through a series of structured and open-ended assignments, students develop advanced creative and technical skills through work in a variety of media and forms of expression. Drawing (including figure drawing and personal expression), collotype printing, scratchboard, assemblage, painting, and collage are among the many techniques students may use. Projects are increasingly ambitious and students develop finished pieces of high quality, beginning to build strong portfolios. They learn to manage and assess their own pieces and to critique each other's work constructively.

### STUDIO ART 2

Year course. Studio 2 is recommended for students who want to continue developing their creative-thinking and artistic skills with 2-D media and techniques. Students work with the media introduced in Studio 1 in addition to other media such as linoleum printing, caran d'ache, pen and ink, and monoprinting. Figure drawing will remain an important part of the program. Students will begin to develop portfolios that may be used as support material for college applications or AP standing.

### ADVANCED ART (AB), ADVANCED ART (A)

Year course. These courses bring together Cate's most accomplished and engaged student artists, across all media, to pursue advanced individual, directed studies in a studio environment that also allows them to see and learn from each other's work. Working with several members of the department, students will develop and execute challenging independent projects, expanding their portfolios, while also coming together regularly to learn advanced principles of art and design, to develop critical and analytical skills, and to learn from their peers.

### PHOTOGRAPHY AND FILMMAKING 1

Year course. This introductory course in static and motion photography assumes little or no previous knowledge of digital still or video cameras. Over the course of the year students will begin with photography as means of capturing imagery and then move toward capturing motion through stop-motion animation. Students will use photography as a medium for communicating information and ideas in effective visual form. Topics include operation of the cameras; artistic compositions; computer operation; file compression and formatting; and use of related software (like Adobe Photoshop and iMovie). Students will learn to operate their digital cameras and post-production software; to print and present their photographic work; and to create and present a video.

### PHOTOGRAPHY 2

Year course. This course explores intermediate photographic and digital techniques and concepts. Students will learn how to solve photographic problems through a series of guided, individualized assignments. Students will work on developing knowledge of post-production software and will

print and present their photographic works. They will also be introduced to alternative techniques, such as photo encaustic and book making.

### ADVANCED PHOTOGRAPHY

Year course. This course explores advanced photographic and digital techniques and concepts. Students will plan, shoot, develop, and print bodies of work that are conceptually motivated and technically proficient. Topics in Advanced Photography include portraiture, non-traditional approaches to photography, and photography as sculpture.

### DIGITAL FILMMAKING 2

Year course. Digital Filmmaking 2 students work as individuals and as collaborative teams. Using equipment and techniques ranging from the simplest and most direct (such as cell phone video) to ambitious and advanced (professional quality DSLR cameras) students will learn and apply a valuable and essential set of design and production skills. Projects extend from brief moving images (5-7 second videos) to silent films, music videos, and completed short subjects. For larger group projects, students may take on roles from screenwriting and storyboarding to direction, camera work, lighting, performance, and post-production work.

### DIGITAL FILMMAKING 3 + FILM STUDIES

Year course. Digital Filmmaking 3 + Film Studies students continue to work as individuals and as a collaborative team. This course builds upon the creative and technical skills students have developed and will open up an opportunity for students to explore filmmaking further with the addition of a trimester dedicated to film studies. Students will continue to use equipment and techniques ranging from cell phone video to DSLR video capture. Projects extend from brief videos and completed short subjects, to non-narrative projects and installations. For larger group projects, students may take on roles from screenwriting and storyboarding to direction, camera work, lighting, performance, and post-production work.

### DIGITAL ARTS 1, 2

Year course. Working with Adobe Photoshop, Illustrator, InDesign, and 3D modeling programs, students will be introduced to design concepts used to develop print media, posters, identification, letterhead, logos, product design, packaging. Students will also create models using Makerbot and Form Plus 3D printers, along with other forms of visual design and communication.

### FILM PRODUCTION 1, 2

Year course. Film Production students work as individuals and as a collaborative team. Using equipment and techniques ranging from the simplest and most direct (such as cell-phone videos) to ambitious and advanced (those of professional quality), students will learn and apply a valuable set of design and production skills. In Film Production 1, projects extend from brief moving images to completed short subjects. In Film Production 2, projects range from completed short subjects and documentaries and substantial films. For larger group projects, students may take on roles from screenwriting and storyboarding to direction, camera work, lighting, performance, and post-production work.

### ACTING 1, 2

Year course. This course is designed to familiarize students with the theater – its intent, structure, effectiveness, and value – through performance. Through the study of a wide variety of scenes, monologues, and short plays, students in Acting 1 will be able to communicate effectively and work cooperatively with an ensemble; take creative risks; develop physical, vocal, and mental skills through active participation in warm-up and acting exercises; analyze text to determine the author's intent and historical/cultural context; and constructively evaluate and critique their own work, as well as being able to deliver tactful and thoughtful criticism to others. Acting 2 students will be called upon to demonstrate and model these skills in a mentorship role, building toward the ultimate goal of directing scenes and leading class exercises.

### TECHNICAL THEATER PRODUCTIONS AND DESIGN 1, 2, 3

Year course. This course is designed to help students develop a practical knowledge of theater through production analysis, technical design, and construction. Through hands-on instruction, Level 1 students will learn to manage and care for the theater space and equipment; implement basic

sound, lighting, and scenic designs for theater events; collaborate and communicate effectively; and combine purpose with artistry. Level 2 students will be called upon to demonstrate and model these skills in a mentorship role, building toward the ultimate goal of managing a crew to help create and implement their own designs.

### INTRODUCTION TO MUSIC

Year course. Introduction to Music is a broad survey of music history, theory, and performance. Students will play on instruments from around the world, from West Africa to India to Indonesia. They will study the past 3,000 years of Western music and follow its development to present day in the United States, while learning the basic elements of music theory. Students will compose original pieces on digital audio workstations and receive an introduction to reading music notation. Finally, they will form rock bands and learn how to play various rhythm section instruments.

### CATE CHORALE

Year course. This course is designed to foster an understanding of choral music and a love of singing. By participating in the ensemble, students will be expected to prepare choral repertoire for public performances; develop musicianship skills, such as pitch, rhythmic accuracy, and sight-singing; develop vocal and breathing techniques, tone production, and diction; expand their individual potential within a group; and identify the historical context for the choral selections and explain their cultural relevance.

### HONORS CHORALE

Year course. Juniors and seniors who have completed one year of Chorale may apply for Honors Chorale, which is also a year course. In addition to following the Chorale curriculum, Honors Chorale students will assume a leadership role within the choir. They will be called upon to lead sectional rehearsals and help less experienced singers learn their music.

### ADVANCED CHORAL MUSIC: CAMERATA

Year course. Camerata is an advanced singing group that explores a wide variety of genres and styles from 16th-century madrigals to contemporary pop songs. Singers will be expected to prepare choral repertoire for public performance; build and practice exemplary vocal and breathing technique, tone production, and diction; hone their sight-reading and musicianship skills; expand their individual potential within a group; and identify the historical context for the choral selections and explain their cultural relevance.

### ORCHESTRA

Year course. This is a performance-oriented course designed for string, woodwind, brass and percussion players who wish to play classical music with fellow musicians. Several performances are scheduled throughout the year. In addition to regular rehearsals and performances, there may be occasional sectionals, master classes, and musical quizzes scheduled.

### HONORS ORCHESTRA

Year course. Honors Orchestra takes place in addition to regular orchestra rehearsals and performances. The Honors group will divide into small chamber ensembles and rehearse more challenging repertoire. The pieces will be performed at various Cate events throughout the year.

### JAZZ ENSEMBLE

Year course. This is a performance-based course. Students are introduced to the elements of improvisation including jazz harmony, soloing strategies, and ensemble playing. Selected music will span the history of jazz, from Dixieland to Big Band and Bebop to Modern. Performances are scheduled throughout the year at various Cate events.

### HONORS JAZZ ENSEMBLE

Year course. This group will divide into small groups and rehearse more challenging material. The honors rehearsals and performances will take place in addition to regular jazz band commitments.

### MUSIC THEORY

Fall trimester. Students will study the elements of music and learn how musicians create music. Rhythm, harmony, melody, scales, intervals and song structure will be explored. These essential components will be used to study chord progressions and musical forms. We will study other songwriters' compositions in order and begin to create our own pieces.

### SONGWRITING

Winter trimester. Students will begin writing songs, chord progressions, and musical forms. A special section on lyric-writing will be included. These songs will be brainstormed, created, edited and played live and/or in the recording studio. Students will learn how to record themselves and put together a portfolio of original compositions.

### MUSIC COMPOSITION

**Spring trimester.** Students will study the elements of music and create longer-form compositions, including electronic, jazz, film and classical. The basics of music theory knowledge will be employed as we study other composers' music and create our own more advanced pieces. The direction of this class will be based on the interest and levels of the students.

### ELECTRONIC MUSIC

Winter trimester. Students will learn the process of creating music using Macintosh computers, DAWs, and midi workstations. Cate uses Garage Band, Logic Express, Logic Pro 9, and Pro Tools, but students are also welcome to bring their own computers and software. By the end of the course, students will be able to write their own music, produce it using the technologies available, edit it for the listening audience, and bounce it out for publication.

### RECORDING STUDIO

**Spring trimester.** Students will gain firsthand knowledge of a working studio. Cate's recording studio uses Logic Pro 9 and ProTools software, four microphones and an assortment of amps and instruments. After learning the ins and outs of getting quality sound recordings on various instruments, students will learn to mix and edit their recorded music. Students will test their skills using live musical groups on campus to build their production portfolio.

### PERCUSSION ENSEMBLE

Fall trimester. Students will learn the basics of playing percussion instruments from many cultures, including West Africa, the Middle East, India, the Caribbean, Brazil, and Indonesia. In addition, the techniques of playing with sticks will be employed as students practice on marching drums, mallet instruments, and drum sets. The goal of this course is to create a performing group that will share its beats with the rest of the school community.

### GUITAR ENSEMBLE

Winter trimester. Students will participate in a guitar ensemble that will perform pieces chosen for their appropriate skill level. They will study scales, chords, and other components of music theory. Although it's not required, students will be encouraged to sing as we play tunes from many different genres: rock, pop, folk, country, jazz, and classical. The goal of this course is to prepare several pieces for performance.

### ROCK/POP ENSEMBLE

**Spring trimester.** Students will learn the basics of playing a variety of musical instruments, including piano, guitar, bass, and drums. They will understand how songs are composed, arranged, and performed in small ensembles. They will study the history of rock and gain basic concepts of music theory. The ultimate goal of the class is to put together several songs for performance and/or recording.

### INTERDISCIPLINARY ELECTIVES

Credit for these electives can be given by either department.

### SCIENCE/ENGLISH

### THE AMERICAN WILDERNESS

This **two-trimester** elective may be taken as either an English or science course, and is designed to deepen understanding and appreciation of the natural world and to develop a sense of its role in defining both American culture and individual perspectives. Students are asked to think deeply and consider the profound meaning of wilderness beyond an aesthetic resource. Classroom work will include a variety of academic disciplines – English, environmental science, and philosophy – as well as strong outdoor component to this course to ensure that students have the opportunity to experience the natural world in a manner less abstract than the classroom.

#### THE AMERICAN WILDERNESS 1: THE WILDERNESS ETHOS

Winter trimester. In the first trimester, students will examine the role of wilderness in American culture – historically and currently – using the writings of authors such as Thoreau, Abbey, Stegner, Leopold, and McPhee to develop a personal understanding of the value of wilderness in their own lives. While developing their critical reading and writing skills, students will examine current environmental and political implications of our impact on the American wilderness and, through the use of a journal, work actively to articulate their own developing perceptions about the role of wilderness in American culture. In the winter trimester, there will be an overnight solo backpacking trip, and students will begin to learn the skills of whitewater kayaking in preparation for the river trips of the spring trimester.

### THE AMERICAN WILDERNESS 2: LOOKING INWARD

**Spring trimester.** The classroom component of the second trimester in this two-trimester sequence shifts from analytical reading, critical writing, and argumentation to personal introspection and creative writing with a study of the novel *The River Why* by David James Duncan. Students will explore how the American wilderness has shaped various spiritual paradigms found in American society and use class discussions and journal writing to develop their own sense of their place in the natural world. In the spring trimester, students will continue to develop their kayaking skills locally and will spend a weekend on the Kern River applying their whitewater skills to moving water. Prior to Commencement, the course culminates in a weeklong desert wilderness river trip in Utah.

### SCIENCE/HISTORY

### WORLD WAR II: SCIENCE, TECHNOLOGY AND THE GERMAN WAR MACHINE

Spring trimester. In this course, we will explore the role of scientific, mathematical and technological advances from German rearmament to the development of atomic weaponry. No war was as affected by science, mathematics, and invention as WWII, and no country had a richer research and development program than Germany. As we delve into the German push to create a scientific juggernaut, we will examine primary source materials to consider several fundamental issues in the relationship between warfare and technology. What is the role of science, and scientists, in war? What technological weapons are morally acceptable and what are not? This course seeks to provide a context to evaluate and analyze such questions, and, ultimately, synthesize personal responses to them during our own era of rapid technological advancement.

### SCIENCE/MATHEMATICS ADVANCED COMPUTER SCIENCE (MATH 56): SCIENTIFIC PROGRAMMING

Year course. This advanced course in scientific problemsolving will provide students with the programming skills to ask and answer a broader class of questions than can be addressed by conventional means. Using concepts from physics, chemistry, biology, environmental science and mathematics, students will design, code, and run computational models to conduct virtual experiments. Using the open source Python programming language and the rich set of free scientific, mathematical, and graphical packages built for it, students will learn to think like a programmer as they work through case studies and classical algorithms. They will depen their understanding of population dynamics by modeling a zombie apocalypse. They will appreciate the subtleties of random numbers and probability by constructing a blackjack simulator. They will develop techniques for numerical integration and data visualization as they analyze the recordbreaking Red Bull Stratos jump. At the end of the course, students will own a toolkit of transferable problem-solving skills applicable to any discipline at the college level.

### ENGLISH/HISTORY

### GENDER MATTERS

**Spring trimester.** Students will begin this course by pursuing the question: How did we get here? In this vein, students will examine key historic events and seminal theoretical texts and, from these, infer the essential, and in many cases shifting, assumptions, concepts, questions, and critiques that are foundational to Gender Studies. We will devote specific attention to identifying how, throughout the history of gender studies, the 'we' itself has been redefined, ultimately becoming more inclusive of the diverse experiences of not only women, including non-Western women, but also of men and LGBTQ+ communities. We then will turn our inquiry to the question of: How and why is gender perceived and experienced today? Here, we will rely heavily on contemporary, literary 'artifacts.' These literary artifacts, both fiction and nonfiction, will allow us to explore gendered perspectives and experiences in today's world and also to identify how gender shapes (and is shaped by) factors such as politics, class, race/ethnicity, nationality, religion, age, and education as well as assumptions about biology and sexuality.

### LINCOLN AND THE CIVIL WAR

Spring trimester. On March 4, 1861, just prior to taking the oath of office, Abraham Lincoln said to a crowd of thirty thousand citizens, "In your hands, my dissatisfied fellow countrymen, and not in mine, is the momentous issue of civil war. The government will not assail you. You can have no conflict, without being yourselves the aggressors. You have no oath registered in Heaven to destroy the government, while I shall have a most solemn one to 'preserve, protect and defend' it." Yet war came and lingered, nonetheless. This course examines that very conflict, the means by which it was initiated, the manner in which it was conducted by both the citizens who fought and the leaders who waged it, and the lasting legacy of insight and suffering it left behind.

### THE RISE OF AFRICA: HISTORY AND NARRATIVE

Winter trimester. This course seeks to understand Africa through its literary and cultural products. Since the independence movements of the 1960's, the African continent has experienced tremendous change. The substantial economic and political transitions experienced by each nation have been chronicled and captured in historical texts, rich stories and audio-visual media. Using these creative artifacts, we will undertake a study of themes such as imperialism, post-colonial identity, modernization, and gender, which have impacted and continue to shape the ongoing development of various African nations and peoples. In doing so, we will also consider the way that historical and literary narratives construct Africa in the Western imagination. Sources for this class will consist of short stories, selected readings on African political and economic history, as well as contemporary articles and short films. This class is open to seniors for English credit and to both juniors and seniors for history credit.

### DIRECTED STUDIES

Directed Studies are meant to satisfy an interest that lies outside the established curriculum, and are trimester-long or yearlong. They are designed by any student in conjunction with a faculty director who is willing to supervise and grade the study. Directed Studies courses are available to junior and seniors.

### SENIOR INQUIRY PROJECT

Independent, self-initiated challenge brings authentic intellectual adventure. As such, the senior inquiry program enables 12th-graders to take on a project of their choosing, mentored by faculty. Those with a scientific turn of mind may consider cosmology, geology, biology, meteorology, or neurology, while humanists might explore literature, psychology, political science, economics, history, theater, communications, religion, or art history. Once approved, the student will work independently as faculty advisors provide guidance and criteria for assessment of the project. In the last weeks of the school year, students will showcase their projects with publications, performances, exhibitions, or events. Previous senior inquiry projects have included: "What is Matter?" "Colorism Within the Black Community," "Astrophotography as Data and an Art Form," and "What Modern Understanding of Biology's Core Processes Means for Society."

### CATE SCHOOL

1960 CATE MESA ROAD CARPINTERIA, CALIFORNIA 93013 WWW.CATE.ORG

