

# DIGITAL COMMUNICATION, DESIGN, AND INNOVATION

**Chair: Robert Roffe**

Our Digital Communication, Design, and Innovation program focuses on the development, use, and management of computer science and communication technologies. Our curriculum places emphasis on innovation and the design process in order to prepare students to function as developers and managers of digital applications and content. Courses include instruction in programming, and robotics, as well as the design and development of digital animation, photography, audio, and video.

## MAJOR COURSES

### **DIGITAL ILLUSTRATION (FALL OR SPRING)**

This course offers an introduction to Adobe Photoshop and the basics of illustration. Students will learn how to navigate and organize the Photoshop UI, create custom brushes, use layers and layer effects, and design text to pair with imagery, among other basic skills, through projects focused on concept art and illustrated media. Projects will include illustrating a book cover, designing patterns, creating a character sheet, and painting a panoramic animation background. *For Fourth, Fifth, and Sixth formers. Recommended Prerequisite: Drawing (not required)*

### **DIGITAL MEDIA AND VIDEOGRAPHY (FALL OR SPRING)**

This course is a deep dive into video production and digital media. Through a series of prompts, students will be challenged to create multiple short films, exploring a variety of genres: including music video, narrative, mini-documentary, and experimental. Working in groups, students will master all aspects of production, from writing the script to lighting and sound, working in front of and behind the camera, to final editing and special effects. Students will also learn how to promote and distribute their work while developing their ability to think creatively and work under a deadline. *For Fourth, Fifth and Sixth Formers.*

### **ENGINEERING (FALL OR SPRING)**

This course encourages students to pursue engineering questions and technological solutions that emphasize research and problem solving using mathematical and scientific concepts. Students achieve a more advanced level of skill in engineering design by learning how to conceptualize a problem, develop possible solutions, design and build prototypes or models, and make modifications if necessary. Students will explore engineering design, construction technologies, energy and power technologies, including fluid systems, thermal systems, electrical systems, and communication and manufacturing technologies. *For Fifth and Sixth Formers.*

## MINOR COURSES

### **INTRODUCTION TO APP DESIGN (FALL)**

Students will be introduced to the design process behind creating an app. Students will learn UI design, basic programming concepts, how to integrate art and graphics into an app, all while learning how to effectively use the design process to develop their app through testing and feedback.

### **INTRODUCTION TO GAME DESIGN (SPRING)**

This course offers an introduction to Game Design and will offer a deep dive into the design process and programming that goes into game development.

### **DIGITAL PHOTOGRAPHY (FALL OR SPRING)**

Students will produce a portfolio of finished works while responding to the guiding question: How does perspective impact an image's message? Taking photographs from extreme points of view, students will focus on composition and the basic elements of design: line, value, shape, form, color, and texture. Creativity and self-expression will be encouraged as students have the freedom to explore while simultaneously working within the parameters of each assignment. Other topics covered will be depth of field, shutter speed, and basic image editing using Adobe Photoshop. *This course earns credit towards the Studio and Performing Arts graduation requirement.*

**INNOVATION LAB (FALL OR SPRING)**

This course is a hands-on, experiential class where students will have the opportunity to get their hands dirty by deconstructing, constructing, and repurposing materials in the pursuit of developing problem-solving skills in a fun, non-traditional format.

**INTRODUCTION TO CAD (FALL OR SPRING)**

This is a software focused course where students will learn the basics of designing 2D and 3D objects using CAD software. As students progress in the course, they will have the chance to create their designs on the school's 3D printers and laser cutter.

# ENGLISH

## **Chair: Madelaine Lord**

The members of the English Department strive to develop in each student the reading, writing, speaking, and critical thinking skills needed to meet the demands of a college curriculum. Novels, plays, short stories, and poems expose students to a rich variety of classic and contemporary world literature and encourage an interpersonal appreciation for literature of other cultures and all genders. Canterbury students practice revision techniques to produce polished essays in different modes, including the narrative, the descriptive, and the analytic. Fifth and Sixth Formers, except students in Honors Race Theory, AP Language, and AP Literature, select two semester-long English electives.

### **THIRD FORM ENGLISH – THE ELEMENTS OF LITERATURE & COMPOSITION**

Studying a variety of short stories, plays, novels, and poems, students look at the ways authors use literary tools to tell moving stories. Readings may include *A Raisin in the Sun*, *The House on Mango Street*, and a collection of short stories and poetry. Students learn to write effective sentences and paragraphs and have the opportunity to practice writing the above-mentioned essay modes. The study of grammar includes instruction on avoiding the more common writing problems. *Honors section available.*

### **FOURTH FORM ENGLISH – AMERICAN VOICES**

This course will explore what it means to write with a unique “American Voice.” We will consider how this definition has evolved since the birth of our nation by tracing its development through poetry, prose, drama, and film. The curriculum explores the complexities of society and the individual, the role of nature, neglected voices, and the American Dream. Students will explore current issues and high-interest topics through the close analysis of literature. The writing curriculum gives students the opportunity to focus on writing organized paragraphs and extended essays while practicing the various essay modes of the English Department writing curriculum. *Honors section available.*

### **ADVANCED PLACEMENT ENGLISH LANGUAGE**

This course cultivates the reading and writing skills that students need for college success and for intellectually responsible civic engagement. Students are guided to become curious, critical, and responsive readers of diverse texts, and become flexible, reflective writers of texts addressed to diverse audiences for diverse purposes. The reading and writing students do in the course should deepen and expand their understanding of how written language functions rhetorically: to communicate writers’ intentions and elicit readers’ responses in particular situations. The course prepares the student to take the AP English Language examination in May. *For Fifth Formers.*

### **ADVANCED PLACEMENT ENGLISH LITERATURE**

This course seeks to help students read, write, and think more deliberately. As readers, they focus on authors’ use of language to elicit responses from their readers. As writers, they strive to write consciously rather than as an afterthought, seeking to communicate ideas more effectively. By improving their reading and writing skills and practicing thoughtful discussion, students learn to think more clearly and precisely. The course prepares the student to take the AP English Literature and Composition examination in May. *For Sixth Formers.*

## FIFTH AND SIXTH FORM ELECTIVES

### **LITERATURE OF CONFLICT (FALL)**

The emotional trauma and confusion of war has led to countless novels, nonfiction narratives, memoirs, song lyrics, and poems often written by those who had fought, but also by those coping with the aftermath of the fighting. The writing continues to this day as many continue to make sense of fighting that still occurs. With a primary focus on the Vietnam Conflict, this course is offered in honor of Charles L. Bergevin ‘62, David M. Burke ‘65, and Paul M. McGrath ‘62, Canterbury Alumni who lost their lives in the conflict.

### **POST-INDUSTRIAL LITERATURE (SPRING)**

A century ago, leisure time was limited, and life on the farm and in the factory was hard. Over time, the labor movement, the industrial revolution, and the technology revolution have allowed more time for sports and pastimes. As more people watched and participated in leisure time activities, a body of literature inspired by these activities emerged. Our games have given us a rich variety of real and fictional characters as well as a window into the hearts and souls of towns, regions, and nations.

### **ACADEMIC WRITING (FALL OR SPRING)**

Academic Writing focuses on the foundational skills and elements of academic writing. Students will explore analysis, expository, critical reflection, and research components in their writing. It is the philosophy of the department to teach students how to write well, speak consciously, and read critically. The course aims to give students the agency to explain their thought and reasoning through summary, comparison, contrast, evaluation, synthesis, and problem-solving. Students will also need to engage in scholarly discourse and reading to supplement and support their written work. Finally, students will understand writing as a communal process through revision, constructive criticism and feedback.

### **GENRE IN LITERATURE (FALL OR SPRING)**

Genre in Literature is a study of various literary genres, such as poetry, dramas, novels, short stories, biographies, journals, diaries, essays, and others. Students examine literary works of varied genres that address similar topics or themes. Students analyze how each genre shapes literary understanding. This is a survey course that will allow students to experience all types of literary genres.

### **HONORS IDENTITY AND CULTURE (FALL OR SPRING)**

What do you know to be true about yourself and others? Do you ever wonder how you are perceived in your family, community and society? Honors Identity and Culture is a complex study of the way our outward appearance and identity have shaped the history of our communities, our nation, our culture, and the world. In this comparative literature course, we will explore not only the academic theory of race, but the stories of men, women, families and communities where race defined them. Finally, we will wrestle with difficult questions; we will step outside of our comfort zones, allow ourselves to consider new ideas and ultimately answer what we know to be true about ourselves and others.

### **HONORS LITERATURE OF THE RENAISSANCE (FALL OR SPRING)**

Out of the darkness of the Middle Ages springs the Renaissance, a period of vibrant and engaging literature which continues to shape modern thought. Students will explore the advent of new ideas, the influx of original thought, and the emergence of creative thinking and inspiring voices. Students will analyze these voices through thematic connections among authors, periods, and settings. Students will engage in a number of writing assignments that ask them to synthesize, analyze, and comment with their own original thought. They will have opportunities for creative expression in this course.

### **HONORS ORIGINS, MYTHS AND LEGENDS (FALL OR SPRING)**

Origin stories, myths, and legends are narratives that span many cultures but often attempt to make sense of and add explanation to universal questions of existence and life. Students begin with the origin of myths, proverbs, and legends that span all cultures by studying their similarities and differences. In addition to learning how to recognize mythological metaphors, allusions, analogies and symbols, students will also analyze the significance of how cultures use myths and legends.

### **SYRACUSE UNIVERSITY PROJECT ADVANCE:**

#### **CREATIVE NONFICTION WRITING (FALL OR SPRING)**

This course focuses on the genre of creative nonfiction. Students explore varieties of creative nonfiction, such as memoir; biography; the personal essay; travel, science, and food writing; and “new journalism.” As its name suggests, creative nonfiction borrows elements from fiction and poetry (e.g., description, scene construction, dialogue, etc.) yet still aims to tell the truth. For a writer to “tell it slant,” however, is

to acknowledge the ways in which one's subjective viewpoint shapes what counts as "the truth" in telling a story about one's own or another's experiences. Students will have the opportunity to experiment with style, genre, and subject in a writing studio environment and to read varied examples of contemporary creative nonfiction. *For Fifth and Sixth Formers.*

# HISTORY AND SOCIAL SCIENCES

## **Chair: Thomas Hamilton**

The History Department endeavors to promote in students an appreciation for historical knowledge, the critical thinking skills necessary to make sense of it, and the compassion to become active world citizens ready and willing to make a difference. While each course presents core subject knowledge necessary for students to develop a better interpersonal understanding of the world in which they live, the courses further aim to promote historical study as a hugely creative endeavor calling students to ask questions, demand substance, think interpretively, and develop an open mind. Students are expected to develop research skills appropriate to their level.

The department incorporates new classroom technologies into creative presentations, class debates, mock trials, and historical simulations in an effort to stimulate innovative thinking, group collaboration, and other cognitive skills. Student work includes analysis and interpretation supported by historical information. Where applicable, courses are related to current events in areas such as economics, politics, foreign affairs, and environmental issues.

## **FOUNDATIONS OF CIVILIZATION**

Foundations of Civilization is offered primarily to Third Formers with the purpose of establishing the basis for historical study. The course is designed not only to cover the content of major civilizations in Afro-Eurasia, but also to introduce and develop organizational, analytical, research, and writing skills. The course is built around those empires between 500 BCE and 1492 CE that had a disproportionate impact on the formation of the modern world. In the fall, students study the Greeks and the Romans and consider to what extent these two civilizations introduced novel democratic forms of government and notions of citizenship. Students then focus their studies on the rise of the Islamic World and debate the factors that facilitated its rapid expansion across Arabia, Persia, North Africa and Spain. Finally, in the spring, students examine the consequences of the Mongol invasions into China, Persia, and Eastern Europe and consider the extent to which the Mongols impacted the formation of early modern Europe. Students complete a number of writing assignments, including two short research papers in the second semester.

*Honors section available.*

## **WORLD HISTORY**

World History is offered primarily to Fourth Formers. The course builds on the "Foundations of Civilization" studied during the Third Form year by exploring several important turning points in European history and assessing their impact on modern civilization. Topics include the Renaissance & Reformation, the Age of Exploration, the Scientific Revolution & Enlightenment, the French Revolution, the Industrial Revolution, Imperialism, the two World Wars and the Cold War. Emphasis is given to the continued instruction and the practice and development of essential skills needed for the study of history, including reading comprehension, analyzing primary source documents, outlining historical arguments and applying an open mind to the study of historical issues. In addition to continuing their development of historical thinking and writing through independent assignments, students work collaboratively throughout the year on a series of "mini-projects" designed to develop specific research skills using a variety of library resources.

## **HONORS WORLD HISTORY**

Honors World History is offered primarily to Fourth Formers. The course uses a thematic approach to explore European history from the Renaissance to the fall of the Soviet Union and to assess the role of historical themes such as culture, religion, geography, technology, economics, war, and ideology in shaping modern western civilization. Students broaden their understanding of critical events by reading and analyzing a variety of source materials, thinking interpretively, and writing persuasively. Students are encouraged to "think 360" by exploring topics from a variety of perspectives and engaging in experiential learning through extended debates and simulations before casting judgment on a variety of historical issues. In addition to continuing their development of historical thinking and writing through independent assignments, students work collaboratively throughout the year on a series of "mini-projects" designed to develop specific research skills leading to a small research project in the spring semester.

## **ADVANCED PLACEMENT WORLD HISTORY**

AP World History is primarily for Fourth Formers. The course builds an understanding of cultural, institutional, and technological precedents that, along with geography, set the human stage. This understanding is advanced through the acquisition of selective factual knowledge, the application of appropriate analytical skills, and the integration of

small research tasks into the class curriculum. The course highlights the nature of changes in international frameworks, their causes and consequences, and comparisons among major societies. Students enrolled in this course are required to take the AP World History exam in May and complete a short research paper.

### **UNITED STATES HISTORY**

United States History is offered primarily to Fifth Formers. The course is presented chronologically from European arrival to the post World War II era with an emphasis on acquiring core knowledge and interpreting the meaning of the essential events and issues that make up the American heritage. Students continue to develop the essential skills needed to think and write like a historian by applying active reading strategies and engaging in student-centered enrichment activities designed to promote analysis of controversial issues. Each chapter is supplemented with primary source documents from the Stanford Reader series designed to develop skills in critical reading, source analysis, and interpretive thinking. Along the way, students continue to develop their persuasive writing and research skills by completing an independent research project during the second semester. *Required for graduation.*

### **HONORS UNITED STATES HISTORY**

Honors United States History is offered primarily to Fifth Formers. This course is structured around this central question: what does it mean to be an American? By this, we mean to search our history from the colonial period to the post-World War II era to discover the beliefs, character traits, and institutions that make America unique. Content is presented thematically by focusing on the role of citizenship, the role of the west, and connecting the past to the present in an effort to understand the consistencies and contradictions in the American Dream. Students engage in experiential learning in the classroom through extended simulations, trials, and debates to promote historical thinking by analyzing controversial issues through a variety of perspectives before casting judgment as an historian. Students learn strategies for critical thinking, persuasive writing, and research which culminates in an interpretive project during the spring semester.

### **ADVANCED PLACEMENT UNITED STATES HISTORY**

AP United States History prepares students for intermediate and advanced college courses. Students learn to assess historical materials, weigh evidence and interpretations presented in historical scholarship, arrive at conclusions based on informed judgment, and to present reasons and evidence clearly and persuasively in an essay format. Students enrolled in this course are required to take the AP United States History exam in May and to write a research paper.

### **ADVANCED PLACEMENT EUROPEAN HISTORY**

In AP European History, students investigate significant events, individuals, developments, and processes from approximately 1450 to the present. Students develop and use the same skills, practices, and methods employed by historians: analyzing primary and secondary sources; developing historical arguments; making historical connections; and utilizing reasoning about comparison, causation, and continuity and change over time. The course also provides seven themes that students explore throughout the course in order to make connections among historical developments in different times and places: interaction of Europe and the world, economic and commercial development, cultural and intellectual development, states and other institutions of power, social organization and development, national and European identity, and technological and scientific innovations. *Prerequisite: United States History. For Fifth and Sixth Formers.*

### **ADVANCED PLACEMENT GOVERNMENT AND POLITICS**

AP U.S. Government and Politics is an introductory college-level course in U.S. government and politics. Students cultivate their understanding of U.S. government and politics through analysis of data and text-based sources as they explore topics like constitutionalism, liberty and order, civic participation in a representative democracy, competing policy-making interests, and methods of political analysis. *Prerequisite: United States History. For Fifth and Sixth Formers.*

### **ADVANCED PLACEMENT MICROECONOMICS**

AP Microeconomics is a college-level course that introduces students to the principles of economics that apply to the functions of individual economic decision-makers. The course also develops students' familiarity with the operation of product and factor markets, distributions of income, market failure, and the role of government in promoting greater efficiency and equity in the economy. Students learn to use graphs, charts, and data to analyze, describe, and explain economic concepts. *For Fifth and Sixth Formers.*

## FIFTH AND SIXTH FORM ELECTIVES

### **HISTORY OF LATIN AMERICA (FALL)**

In this course, the 600 year period from Pre-Columbian Americas to the present day will be analyzed through economic, social, political, philosophical, and cultural lenses. This will provide a clearer understanding of how historians study history and Latin America in particular. Understanding why Latin America is so connected to the United States while having its own rich and exciting history will be essential themes of this course. All of this will be done by analysis of primary sources like books, paintings, songs, journals, and cultural items. Excerpts of secondary sources will also be looked at to understand the differing conclusions historians draw from the same information.

### **HOLOCAUST (FALL)**

This course introduces students to the historical origins of anti-Semitism and surveys German history from the twentieth century to World War II. Emphasis is placed on the political and social developments which elevated the persecution of Jews to official government policy and almost succeeded in the total extermination of Jews from Europe. Through independent reading and research, students will further hone their ability to read and write analytically. A short research paper is required.

### **HONORS PRE-COLONIAL AFRICA (FALL)**

This course introduces students to the history of colonial Africa from the late fifteenth century until the scramble for colonies in the 1880s. The course begins with students identifying those western stereotypes of Africa and Africans that continue to be perpetuated in the media, music and other forms of pop culture. Students then consider to what extent these pervasive images of Africa are actually the product of the colonial period, when missionaries and explorers sent back reports to Europe filled with sensational tales of their travels through the "Dark Continent." At the end of the course, students will evaluate how this mindset laid the foundation for Europe's eventual subjugation of the African continent in a short research paper. Readings will include a wide variety of primary, secondary, and literary sources.

### **SYRACUSE UNIVERSITY PROJECT ADVANCE: AMERICAN HISTORY TO 1865 (FALL)**

In this course, we will study history as a process through which our society and our country came to be as it is today. Our current society is the product of a diverse and complex past, and a fuller understanding of that past will give us greater insight and perspective into the historical roots of the problems that challenge us. One historian has written, "A nation's attitudes towards its own history is like a window into its own soul and the men and women of such a nation cannot be expected to meet the obligations of the present if they refuse to exhibit honesty, charity, open-mindedness, and a free and growing intelligence towards the past that makes them what they are." *Prerequisite: United States History. For Fifth and Sixth Formers. Students enrolled in this course will also need to enroll in SUPA American History Since 1865 in the Spring.*

### **CORPORATE COLONIALISM (SPRING)**

In this class, students will be learning about the rise of Multinational Corporations (MNC) and their role in imperialism between the 17th and 20th centuries as well as determining if it is still going on to this day. Three questions will frame this class throughout the semester: How did companies colonize European empires? If it did, how did Imperialism and MNC change by the 19th/20th centuries? Globalism or Imperialism? Students will look at companies as case studies throughout the centuries in question, such as the British East India Company, Belgian Free State, United Fruit Company, and Firestone. At the end of the course the students will research an aspect of MNC or Imperialism (social aspects, economic impacts, or political implications) and delve deeply into the subject to understand the nuances and impact of said aspect.

### **MODERN TIMES (SPRING)**

Students in this course will study contemporary world events involving political, social, cultural, and economic issues. Emphasis is placed on world events and the prevailing trends and leaders who are influencing current affairs. Students regularly examine periodicals and evaluate the opinions of reputable commentators reflecting on present day developments. The course challenges students to further refine their ability to read analytically and write a persuasive historical argument. A short research paper is required.



### **HONORS COLONIAL AFRICA (SPRING)**

This course introduces students to the history of colonial Africa between the 1820s and the 1960s. Students begin the semester by examining how in the early nineteenth century European powers used the excuse of combatting the slave trade to justify their growing influence on the African continent. As the course progresses, students debate the major economic, political, and psychological theories behind why Africa was partitioned in the later decades of the 1800s, culminating in a research project and class simulation where students are tasked with “pitching empire” to interested European powers. The third section of the course focuses on the imposition of colonial rule and the different strategies adopted by African rulers and elites to preserve their states in the face of partition and invasion. Finally, students learn about the factors that brought about an end to colonial rule, including the rise of African nationalism after the Second World War and the resistance movements that led to independence. Class materials will include a variety of primary and secondary sources by European and African authors. A short research paper serves as the exam for this course.

### **SYRACUSE UNIVERSITY PROJECT ADVANCE: AMERICAN HISTORY SINCE 1865 (SPRING)**

American History since 1865 is a study of US history from the end of the Civil War to the present. While such a course cannot be fully comprehensive, it will focus on many of the important developments and major trends that have shaped modern American life such as the impact of slavery, US expansionism, the Cold War, globalization, and much more. Through analyzing primary and secondary sources, class discussions, and various types of assignments, students will have a chance to *do* history: allowing them to learn how historians think about, and investigate, the past. By the end of the semester students will not only know more about the American experience, they will have learned how to construct persuasive arguments, to use evidence effectively, and to hone a variety of analytical skills that will be of value to them during their undergraduate experience and in their future. *Prerequisite: SUPA American History to 1865 and United States History. For Fifth and Sixth Formers.*

### **SYRACUSE UNIVERSITY PROJECT ADVANCE: PRINCIPALS & CONTEMPORARY ISSUES IN SPORT MANAGEMENT/ BUSINESS MANAGEMENT (SPRING)**

Principles and Contemporary Issues in Sport Management is an introductory course offered through the Syracuse University David Falk College of Sport and Human Dynamics. This course introduces the student to sport management concepts and sectors through an examination of problems and issues faced by contemporary sport management. Unique characteristics of sport and resulting social and ethical responsibilities of sport managers will be discussed. In addition to the use of traditional pedagogical teaching methods to deliver basic sport management concepts, students are required to complete a comprehensive, hands-on project that demonstrates their comprehension of the different sectors of the industry covered throughout the semester. *For Fifth and Sixth Formers.*

### **AMERICAN GOVERNMENT (FALL OR SPRING)**

This course is designed to help students understand the history and structure of the American government. The class begins with a study of the Articles of Confederation, the Constitution, and the three branches of government. The course then moves on to such topics as state and local government, the responsibility of the government in domestic affairs, and U.S. foreign policy throughout the years. Through the examination of the American government, students will be better equipped to make informed decisions as citizens. A short research paper is required. *Prerequisite: United States History.*

### **CHANGING LENS OF HISTORY (FALL OR SPRING)**

In this semester-long course, students will examine historical perspectives and “lenses” that reflect diverse populations and their contributions to contemporary narratives. The class inquiry is anchored by the reading of novels that have been published in the last 10 years. We will read texts that offer diverse viewpoints in order to provide students with “mirrors, windows, and sliding glass doors” (Sims-Bishop, 2014). Students will explore historical themes in the novels through writing and discussion. Each unit will also include historical research that utilizes primary and secondary sources to provide context for the contemporary narratives.

### **INTERNATIONAL DIPLOMACY (FALL OR SPRING)**

This course is dedicated to familiarizing students with the major traditions that have dominated foreign policy. Students will examine prominent theories in international relations while taking part in a series of case studies and

simulations. Students will then apply their knowledge of diplomatic history and International Relations theory from the course to discuss and debate the factors that contributed to events including the annexation of the Philippines, the Marshall Plan, the 1953 coup in Iran, the Cuban Missile Crisis, and the Iraq War.

**SYRACUSE UNIVERSITY PROJECT ADVANCE: ECONOMICS OF PERSONAL FINANCE (FALL OR SPRING)**

This Introduction to Personal Finance focuses on the foundations of financial planning—such as setting short-term and long-term financial goals—and then tackles essential aspects of consumer personal finance, including record keeping, budgeting, banking, saving, borrowing, investing, insurance, taxes, and retirement planning. *For Fifth and Sixth Formers.*

**SYRACUSE UNIVERSITY PROJECT ADVANCE: ENTREPRENEURSHIP/ GLOBAL ECONOMY (FALL OR SPRING)**

During this course, we will assess, explore, critique, and celebrate entrepreneurship. Entrepreneurship is approached as a way of thinking and acting, as well as an attitude and a behavior. Our emphasis is on entrepreneurship as a manageable process that can be applied in virtually any organizational setting. Moreover, our interest is in sustainable entrepreneurship, or entrepreneurship over the life cycle of a person's entire career; in organizations as they evolve from start-up enterprises to sizable corporations; and in societies as they move from undeveloped to post-industrial. *For Fifth and Sixth Formers.*

# LANGUAGES

## **Chair: Keiko Mathewson**

The Language Department strives to instill in each student a love for language, cultures, and the satisfaction derived from the relative mastery of a second language. We aim to develop in the student the ability to read with understanding and to speak and write correctly and effectively. We teach structures in context through storytelling and immersing the student in the language during the class period. Emphasis is placed on comprehensive input. We build on this by further presenting the language to the students through expanded reading, speaking, writing, conversation, and group work. Finally, we encourage the students to study language at the college level and to experience those languages and cultures first-hand through chaperoned trips and exchange programs creating inter/intrapersonal connections to the languages being studied.

Spanish language students can opt to partake in an exchange with the San Cayetano School in Palma de Mallorca, Spain. The Summer Institute in Puigcerdà is an academic and cultural program for students in all levels of Spanish.

In Latin, students develop reading fluency and cognitive skills. With continual exposure to vocabulary, forms, and grammatical structures within a text, we reinforce the students' understanding of these topics. We teach the Latin language and topics in Roman culture in context, with a view to enrich the students' experience of each author covered.

Language courses at all levels are scaffolded to the AP Exam allowing implementation of real life situations and more useful vocabulary to all students.

*Note: In addition to fulfilling the three-year language requirement, students may elect to take a second language. In doing so, they must commit to study that language for at least two years. Sixth Formers may not enroll in a first-year language.*

*The Donovan Center for Learning may waive the three-year language requirement for students with diagnosed language or learning differences. Students for whom English is a second language are expected to meet all of the School's distribution requirements with the exception of foreign language.*

## FRENCH

### **FRENCH 1**

In French 1 students acquire useful, high frequency vocabulary and practice all four skills from day one. Students are actively engaged in class and have periodic speaking and written assessments. By the end of the first year, the students are able to express themselves in the present and past tenses. Thematic vocabulary includes family, home, school schedule, sports, weather, places to go in a city, numbers, dates, and life at Canterbury.

### **FRENCH 2**

In French 2 students continue to acquire useful, high frequency vocabulary and practice all four skills from day one. Students are actively engaged in class and have periodic speaking and written assessments. Students in French 2 master the present, past and imperfect tenses as well as reflexive verbs and object pronouns. Thematic topics of vocabulary include household chores, food and drinks, clothing and colors, daily routine, health and wellness, and the countries of the world. A reader is introduced and students present projects on various topics and work frequently with a partner during in-class activities.

### **FRENCH 3 / FRENCH 4**

In French 3 and 4, the emphasis is on oral communication, culture, reading and films. Students round out their study of French grammar, continue the mastery of the past tenses and are introduced to the future tense and conditional mood. Students read short stories (such as "La dernière classe" or "Le grand Michu") and their first major work (Le

petit prince and/or Les aventures du petit Nicolas). Assessments are primarily oral or project-based, with some written tests as well.

### **FRENCH 3H / FRENCH 4H**

These rigorous classes are designed as a preparation for AP Language and Culture and focus heavily on grammar, culture and communication. French is spoken 100% and students continue to be actively engaged each day. Students refine their grammar through a final review of the major grammatical topics and verb tenses and are introduced to the subjunctive mood. In addition, the students read short stories (such as “La dernière classe”, “La parure” or “Deux amis”) and a full work (Rhinocéros or Le petit prince) and do frequent projects and presentations. *Departmental approval required.*

### **ADVANCED PLACEMENT FRENCH LANGUAGE AND CULTURE**

Conducted exclusively in French, this course is the culmination of multiple years of rigorous study and continues to develop all four language skills leading to proficiency. Through the study of the six cultural themes, students explore the French-speaking world and learn to compare various cultural aspects of it to their own community. The students also read articles online, watch videos of native speakers, keep a journal in French, make regular recordings for homework, compose and express more complex thoughts and ideas, review grammar, collaborate with the teacher on vocabulary lists, and become familiar with the format of the AP exam. The course prepares students to take the AP French Language exam in May, and requires permission of the instructor.

## **SPANISH**

### **SPANISH 1**

In Level 1 students acquire useful, high frequency vocabulary. By the end of the first year, the students are able to express themselves effectively in the present tense and can recognize the past tenses. Thematic vocabulary includes family, home, school schedule and sports, travel, clothes and colors, numbers and dates, and life at Canterbury.

### **SPANISH 2**

By the end of Level 2 students can tell stories using the present, past, and future. Students in Spanish 2 are proficient in the past tenses, the imperfect and preterit. Thematic topics of vocabulary include families and personal relationships, life at home and at Canterbury, and other topics related to our students’ lives.

### **SPANISH 3**

In Spanish 3 the students complete their study of grammar, focusing on the perfect tenses and the subjunctive. We continue the emphasis on oral and more advanced written communication at this level. Students who have shown a knack for and ease with the language may be selected for the honors Spanish 3 class where we begin to focus on Advanced Placement tasks. *Honors section available.*

### **SPANISH 4**

In Spanish 4 the students refine their grammar through a final, sweeping review of the major grammatical topics and verb tenses. In addition, the students study culture through film, original literature, and music. A series of film shorts supplement the learning. *Honors section available.*

### **ADVANCED TOPICS IN SPANISH - CONVERSATION AND CONTROVERSY**

Students will cover a variety of topics ranging from deforestation to immigration, racism, and the many challenges that arise with these issues. Through authentic documentaries, articles, and podcasts, students will live the issues facing many Spanish speakers in the United States and in their home countries. With the use of debates, speeches, and persuasive writing, the students will culminate their language experience by covering current topics and being able to speak to the topic in the second language.

### **ADVANCED PLACEMENT SPANISH LANGUAGE AND CULTURE**

Conducted exclusively in Spanish, this course continues to develop language skills. Students will also compose and express more complex thoughts and ideas, review grammar, and become familiar with the format of the AP exam.

Though the AP exam is the final assessment, this class continues language acquisition and fine-tunes language use and skills. The course prepares students to take the AP Spanish Language exam in May.

### **ADVANCED PLACEMENT SPANISH LITERATURE AND CULTURE**

Students in this class read representative prose (short stories, novels and essays), poetry, and drama from the Spanish speaking world. This is a survey course that follows the reading list published by the College Board. The students make connections between the works read and the historical period and regions in which they were written. Students develop a deeper understanding of the cultures of the Spanish-speaking world. The course prepares students to take the AP Spanish Literature exam in May.

## **CLASSICS**

### **LATIN 1**

Students learn the fundamentals of Latin grammar, vocabulary, and syntax as they focus on reading Latin and using conversational Latin. The reading passages are adapted from Plautus to Boethius, through which the students come to understand the many facets of the Roman and post-Roman world.

### **LATIN 2**

Students expand their learning of basic grammar and vocabulary as they read about Heloise and Abelard, Charlemagne, and Christopher Columbus. Cultural study includes aspects of the use of Latin in the Middle Ages, the Renaissance, and in early modern life.

### **LATIN 3**

Students begin the year by reading excerpts from Julius Caesar's *De Bello Gallico* and selections from Catullus and Cicero. In the second semester, the students read selections from books 1-6 of Vergil's *Aeneid* as well as excerpts from Horace's *Odes* and Ovid's *Metamorphoses* within the cultural context of the Augustan age. Finally, they will read post-antique era authors, including Erasmus, Petrarch, and John Parke. *Honors section available.*

### **LATIN 4**

Students in Latin 4 will read selections from Vergil's *Aeneid*, books I-VI, and will study the necessary grammar and syntax as well as versification and figures of speech. Students will take periodic tests on the material and will write essays on the meaning of the poetry and the historical background of the poem. *Honors section available.*

### **ADVANCED PLACEMENT LATIN**

AP Latin is equivalent to an upper-intermediate level college course in Latin focusing on the in-depth study of selections from two of the greatest works in Latin literature: Vergil's *Aeneid* and Caesar's *Gallic War*. Students cultivate their understanding of classics through preparing and translating readings and considering themes in the context of ancient literature as they explore concepts like literary techniques, Roman values, war and empire, leadership, views of non-Romans, history and memory, and human beings and the gods.

# MATHEMATICS

## **Chair: Christopher Roberts**

Our dynamic mathematics program makes use of iPads and Apple TV to create an interactive experience for students in class. Teachers are able to interact with the textbook and can create and make class notes available to students. Additionally, interactive calculators and course specific apps allow students to focus on problem-solving, critical thinking and the exploration of mathematical principles at the highest levels. By creating an interactive environment, teachers are able to engage students in discussions of multiple approaches to math problems and provide instant feedback. Math becomes more than an exercise in finding the right answer as students learn the richness of mathematical concepts and how they can be used. Students experience the flipped classroom, allowing them to watch informational videos at home and tackle challenging problems in a collaborative class environment. Eligible Fifth and Sixth Formers may continue with advanced studies in courses that include AP Statistics, AP Calculus, Honors Linear Algebra, and Honors Multivariable Calculus.

## **ALGEBRA 1**

Basic concepts and properties of elementary algebra are introduced early to prepare students for equation solving. Concepts and skills are introduced algebraically, graphically, numerically, and verbally, often in the same lesson to help students make connections. Frequent and varied skill practice ensures student proficiency and success. Special attention is given to signed numbers, positive and negative exponents, linear equations, factoring, radicals, simultaneous equations, verbal problems, and test-taking strategies.

## **GEOMETRY**

This full year course regards the properties of right triangles, similar triangles, polygons, and circles. Their geometric properties are treated synthetically with logic and proof, as well as analytically with coordinates and algebra. Multiple formats are supported through mastery including two column and indirect proofs. Students learn to value the need to think logically and present ideas in a clear order. Traditional geometry concepts and deductive reasoning are emphasized throughout, while measurement and applications are integrated to motivate students via real-world connections. Algebra 1 skills are reviewed at point-of-use, ensuring students maintain these skills. *Honors section available.*

## **ALGEBRA 2**

The goal of the intermediate algebra course is to introduce and automate the middle-level algebra skills. Practice in the fundamental topics including linear equations, exponents, logarithms, graphs, verbal problems, systems of linear and nonlinear equations, complex numbers, quadratic equations, and linear and quadratic functions is provided. *Honors section available.*

## **ELEMENTARY FUNCTIONS**

Elementary Functions will extensively review concepts covered in Algebra and Geometry. Additionally, we will explore both familiar functions and new functions through a more critical lens. Throughout the year your knowledge and skills acquired in previous courses will be strengthened through effort and practice. Some topics we will explore include—linear systems, polynomial functions, exponents, and logarithms. We will end the year with an extensive study of trigonometry both as the solution to triangles and as the study of circular functions.

## **PROBABILITY AND STATISTICS**

This course provides an elementary introduction to probability theory and mathematical statistics that emphasize the probabilistic foundations required to understand probability models and statistical methods. Topics include: basic combinatorics, discrete and continuous random variables, probability distributions, mathematical expectation, hypothesis testing, confidence intervals, and linear regression.

## **PRE-CALCULUS**

Pre-Calculus prepares students for a college-level Calculus course by extending the student's knowledge and skills acquired in previous courses. The course begins with a thorough review of selected topics—linear systems, polynomial functions, exponents, logarithms, sequences, series—and continues with an extensive study of trigonometry both as the solution to triangles and as the study of circular functions. At a more rapid pace, the honors section includes the usual topics treated at the beginning of a Calculus course (limits, derivatives, applications of derivatives). *Honors section available.*

**CALCULUS**

This course covers many of the topics included in a college-level Calculus course. Topics include limits, methods of differentiation, related rates, maximization, Riemann sums, methods of integration, and area. The course is not as rigorous as AP Calculus and will not cover all of the topics on the AP syllabus. *Honors section available.*

**ADVANCED PLACEMENT CALCULUS**

This course closely examines the theory behind and the applications of the derivative. A strong background knowledge of function analysis and trigonometry is required. The second half of this course closely examines integral calculus. The course curriculum satisfies the AB syllabus of the AP program. The course prepares students to take the AP Calculus exam in May.

**ADVANCED PLACEMENT STATISTICS**

This course covers the AP syllabus with specific emphasis in data exploration, experimental design, probability, and statistical inference. AP Statistics is a non-calculus based course which introduces students to methods and tools for collecting, analyzing, and drawing conclusions from data. This course is graphing calculator intensive. The course prepares students to take the AP Statistics exam in May.

**HONORS LINEAR ALGEBRA**

This course covers concepts and mathematical tools such as systems of linear equations, matrices, determinants, vector spaces, inner product spaces, eigenvectors, and linear transformations. These topics are particularly useful for students interested in pursuing engineering, physics, economics, statistics, or computer science. *Department approval required.*

# PERFORMING ARTS

Chair: Sarah Armstrong

## MAJOR COURSES

### CONTEMPORARY MUSIC BAND

The Contemporary Music Band is a high-level ensemble composed of a select group of instrumental and vocal students, specializing in music from a broad spectrum of contemporary music styles such as pop, R&B, rock, jazz, and funk. Students prepare music for performance at various concerts and special events throughout the year, both on and off campus. In addition, students are given the opportunity to record a digital portfolio in our on-campus recording studio. When selecting pieces for the group, students' musical experience as well as musical interests are considered. Students enjoy having some input into song selections. *By audition.*

### VARSITY VOICES

Varsity Voices is Canterbury's high-level vocal acapella ensemble, specializing in contemporary and popular music. Explore tight vocal harmonies, complex rhythms, and advanced vocal techniques in this challenging and fast-paced environment. Varsity Voices is an auditioned ensemble for all voice types as well as students who have interest and experience in vocal percussion/beat boxing. This ensemble will perform regularly both on and off campus. *By audition.*

### COMPUTER MUSIC 1: USING GARAGEBAND (FALL)

This is a course open to beginners as well as those experienced with GarageBand. Students learn how to record and edit music, create beats, and mix tracks. After taking this class students will be able to record a project, record a podcast episode and record a movie score.

### COMPUTER MUSIC 2: USING PRO-LOGIC (SPRING)

In this class students learn how to create, record, and mix music with Logic Pro X. This course is open to all students. Students will learn how to create their own music with Apple Loops, record MIDI with software instruments, learn how to write beats and learn how to record audio. At the end of this class students will be able to create their own beats and songs with the Logic Pro X Software. *(Computer Music 1 is not a requirement of Computer Music 2)*

### HISTORY OF ROCK (SPRING)

This course is designed to familiarize students with the history of Rock music. Prominent players and groups of each era will be covered, as well as sociological, economic and cultural factors that shaped the many styles of Rock music. *There is no prerequisite for this class. For Fourth, Fifth and Sixth Form students.*

### SYRACUSE UNIVERSITY PROJECT ADVANCE: PRESENTATIONAL SPEAKING (FALL OR SPRING)

Presentational speaking presents the conceptual and practical dimensions of formal presentations in organizational settings. Analysis, adaptation, strategic arrangement, development of ideas, and verbal and nonverbal presentation skills are examined. This course breaks down the skills needed to present a proper image, and reflects on many other elements of communication also required for good speaking. This course builds a solid understanding of the fundamentals of public presentations and of how to competently and flexibly employ these skills so that a speaker can adjust selected topics to specific audiences. *For Fifth and Sixth Form students. This course does not earn credit towards the Studio and Performing Arts graduation requirement.*

## MINOR COURSES

### CARILLON GUILD

This course introduces students to the art of playing the carillon. Students will work on the practice clavier, preparing music suitable for the instrument. Canterbury has the unique honor of housing one of Connecticut's eleven Carillons. Located in the Chapel of Our Lady, Canterbury's Carillon was installed in 1931, making it one of the oldest in



Connecticut, as well as the smallest, with twenty-three bells. When a student has reached an appropriate level of mastery on the practice clavier, they will have the opportunity to perform in the tower on the chapel's Carillon.

### **CLASSICAL CHAMBER**

Classical Chamber is made up of small groups of two to four players, who rehearse and perform selections from the standard chamber music repertoire and contemporary pop. The material is chosen based on the ability and instrumentation of each group. This is an excellent opportunity for students to be exposed to material that is often not studied on the pre-college level. Each student will be expected to participate in all rehearsals and performances of the ensemble. *Prerequisite: These ensembles are for more advanced students and are not classes in instrumental instruction. Students are expected to have an instrument available for full-time use. Private lessons are encouraged but not necessary, as long as the student can perform the music assigned. By audition.*

### **JAZZ/ROCK/POP ENSEMBLE**

The Jazz/Rock/Pop Ensemble plays contemporary styles of music in the pop, rock, and jazz genres. Students with experience playing the following instruments are welcome: alto sax, tenor sax, baritone sax, soprano sax, trumpet, trombone, piano, bass, guitar, and drums. Students in this ensemble will work together to prepare music for performance at concerts and special events. *By audition.*

### **ORCHESTRA**

The Canterbury Orchestra will perform various selections from an expanded repertoire including styles of music ranging from symphonic to contemporary pop selections. The material will be chosen based on the ability of the group as a whole. Students will be expected to participate in all rehearsals and performances of the Orchestra. *Prerequisite: This is not a class in instrumental instruction. Students must have played an orchestral instrument (woodwind, brass, or string) and have the basic knowledge thereof. This instrument must be available to the student for full-time use. Private lessons are encouraged but not necessary, as long as the student can perform the music assigned. By audition.*

### **ROCK BAND**

In Rock Band, students of beginner to intermediate level on the guitar, bass, drums, or vocals can enjoy preparing songs from a variety of rock music styles. Students will explore the stylistic elements of classic to modern rock and perform at concerts in the fall, winter, and spring. *By audition.*

### **SINGER'S STUDIO**

Singer's Studio is a supportive, safe, and fun place for anyone who likes to sing and wants to learn how to use their voice with confidence. The course content will guide students through how the voice works, how to keep it healthy, and how to combat stage fright. Students will have an opportunity to learn basic vocal technique, music theory, and keyboard skills through the study of solo and ensemble repertoire from a wide variety of genres. *Open to all students, no audition required or previous musical skills or experience required.*

### **PRIVATE LESSONS**

Private instruction is offered on guitar, bass, piano, voice, drums, sax, trumpet, clarinet, violin, and cello. All private instructors are experienced musicians in the fields of music education and performance. Private lessons meet once a week and can count towards fulfilling the Fine Arts credit requirement. This is a great opportunity for any student who wishes to learn an instrument or excel on an instrument they have experience in playing. *A fee is charged for private instruction.*

## **THEATER**

**Theater Director: Sarah Armstrong**

*Theater course credits count toward fulfilling the Studio and Performing Arts requirement.*

### **THEATER PRODUCTION (FALL)**

Student actors, through rehearsal and performance in the fall play, practice techniques unique to theatrical production. Analyzing character, understanding relationships between characters, vocal projection and body

expression are all part of the course. Actors are expected to display disciplined work ethic, teamwork and personal responsibility as basic requirements for participation. Two performances on the Canterbury stage for audiences culminate the course. This counts as either minor (.25) or major (.5) credit, depending on time commitment. *By audition.*

### **MUSICAL THEATER PRODUCTION (SPRING)**

Student actors, through rehearsal and performance in the spring musical, practice performance techniques unique to musical productions. Singing, dancing and the art of performance in this genre are part of the course. Actors are expected to display disciplined work ethic, teamwork, and personal responsibility as basic requirements for participation. Two performances on the Canterbury stage for audiences culminate the course. Counts as either minor (.25) or major (.5) credit, depending on time commitment. *By audition.*

### **TECHNICAL THEATER (FALL OR SPRING)**

Students will obtain knowledge of the behind-the-scenes collaboration that takes a production from an initial script selection through design and implementation to the final curtain. Students will learn the basics of set-building, lighting, and sound design for drama productions and will be well prepared to handle operations on their own at showtime. Students will become familiar with the proper use of tools for set-building, gain an understanding of set design as it applies to Canterbury's theater space and learn the basics of stage maintenance, lighting, and sound needs for the actors. Instruction will emphasize terminology, basic concepts and safety. Two performances on the Canterbury stage for audiences culminate the course. This course counts as either a minor (.25) or major (.5) credit, depending on time commitment.

# SCIENCE

## Chair: Cammy Roffe

The Science Department focuses on the excitement of learning about the natural world. Introductory courses provide a solid foundation in analytical and critical thinking, experimentation, and problem solving. Laboratory work and guided inquiry-based experiments engage students with modern science techniques that connect concepts learned in the classroom to practice and application in the lab. Recent technological innovations are used in the classroom and laboratory to reach a wide range of learners and increase student involvement. Applications and current events in science are addressed on a regular basis to create interpersonal connections with the material and apply knowledge to problem solving in the real world. Traditional laboratory courses in biology, chemistry, and physics are offered at three levels: regular, honors, and Advanced Placement (AP). Numerous advanced science electives are also available for Fifth and Sixth Form students. **\*Indicates a lab fee for the course.**

### **BIOLOGY (LAB)\***

This introductory laboratory course explores a molecular approach to the study of living systems by examining evolutionary development, genetic continuity, and biological and ecological diversity. Using actual data from laboratory evidence, students develop analytic skills consistent with the biological themes of change, diversity, energy, homeostasis and scientific inquiry. In the lab students investigate the molecular and cellular structures of living organisms, proceeding to larger and more inclusive organizational levels. This course provides many of the primary skills and knowledge necessary for success in the study of subsequent science courses. *Primarily for Third Formers.*

### **HONORS BIOLOGY (LAB)\***

This course includes an in-depth coverage of living systems with extensive laboratory experiences. Students develop analytic skills consistent with the biological themes of change, diversity, energy, homeostasis, and scientific inquiry. Students must demonstrate excellent understanding of the molecular and cellular structures of living organisms. In the lab, students investigate the molecular and cellular structures of living organisms, proceeding to larger and more inclusive organizational levels. In inquiry-based laboratory experiments students learn to critically analyze and interpret data. *Primarily for Third Formers.*

### **ADVANCED PLACEMENT BIOLOGY (LAB)\***

In Advanced Placement Biology, students explore science as a process where new properties emerge at each level in the biological hierarchy. They explore how organisms interact with each other and with the physical environment, energy transfer and transformation, and the correlation of structure and function at all levels of biological organization. Studying cells as an organism's basic unit, students proceed to studies of the heritable continuity of life in the form of DNA, the feedback mechanisms that regulate biological systems, and evolution as the overarching theme of biology. A strong emphasis on advanced laboratory analysis is critical for understanding the molecular and chemical functions of living organisms and systems. The course prepares students to take the AP Biology exam in May. *Minimum prerequisite: Honors Biology and Honors Chemistry. For Fifth and Sixth Formers.*

### **CHEMISTRY (LAB)\***

This introductory laboratory course covers fundamental chemical concepts and helps students develop their critical thinking and problem-solving skills. Students learn about matter, physical and chemical properties and changes, chemical composition and nomenclature, reactions and stoichiometry, energy, modern atomic theory and bonding, gasses, liquids, solids, solutions, acids and bases, and equilibrium. The course may be blended and include interactive activities and assignments in both traditional and web-based formats. Students practice collaboration and problem solving in the laboratory as well as at the whiteboards. In weekly laboratories, students observe and explore chemical phenomena in inquiry-based labs. Students keep a laboratory notebook and learn to collect, analyze, interpret, and present experimental data. A balance of traditional low-tech equipment and state-of-the-art probeware is used. *Minimum prerequisite: Algebra 1. For Fourth and Fifth Formers.*

### **HONORS CHEMISTRY (LAB)\***

This in-depth laboratory course covers fundamental chemical concepts and helps students develop their critical thinking and problem-solving skills. Students learn about matter, physical and chemical properties and changes, chemical composition and nomenclature, reactions and stoichiometry, energy, modern atomic theory and bonding, gasses, liquids, solids, solutions, acids and bases, and electrochemistry. The course is blended and includes interactive activities and assignments in both traditional and web-based formats. Students practice collaboration and problem

solving in the laboratory as well as at the whiteboards. In weekly laboratories, students observe and explore chemical phenomena in inquiry-based labs. Students keep a laboratory notebook and learn to collect, analyze, interpret, and present experimental data. A balance of traditional low-tech equipment and state-of-the-art probeware is used.  
*Minimum prerequisite: Algebra 1. For Fourth and Fifth Formers.*

#### **ADVANCED PLACEMENT CHEMISTRY (LAB)\***

Advanced Placement Chemistry is a college level course that provides students with a detailed understanding of foundational chemical principles. Critical thinking and problem-solving skills are developed as students learn about atomic theory and structure, chemical bonding, gas laws and kinetic-molecular theory, reaction types, stoichiometry, equilibrium, thermochemistry, and electrochemistry. Students perform advanced chemical calculations using data acquired during laboratory experimentation. The course prepares students to take the AP Chemistry exam in May.  
*Minimum prerequisite: Honors Algebra 2 and Honors Chemistry. For Fifth and Sixth Formers.*

#### **PHYSICS (LAB)\***

This is an introductory, laboratory-based course that emphasizes a conceptual understanding of physics. Topics covered include kinematics, Newtonian mechanics, momentum, collisions, energy, electricity and magnetism, heat, sound, and light. Numerous real-world applications are explored so that students come away from the course understanding the rules of nature and how things work. In the laboratory, students observe and explore physical phenomena and ultimately design experiments in inquiry-based labs. Experimental design methods, laboratory data analysis techniques, and error analysis are covered. A balance of traditional low-tech equipment and state-of-the-art probeware is used to appeal to a wide variety of learners. *Minimum prerequisite: Algebra 2, concurrently. For Fifth and Sixth Formers.*

#### **HONORS PHYSICS (LAB)\***

In this honors level course, advanced physics topics are covered without an emphasis on a strict schedule. Material is cumulative and covers the majority of a college level, algebra-based mechanics course. This includes kinematics, Newton's laws, work and energy, momentum and collisions, Newton's Universal Law of Gravity, and basic rotational kinematics and energy. If time permits, students will investigate advanced topics in group projects giving them the opportunity to present a research project, or participate in a final exam. Collaborative work is promoted in problem solving, laboratory experiments, and presentations. In the laboratory, students observe and explore physical phenomena and ultimately design experiments in inquiry-based labs. Experimental methods and techniques of data collection, interpretation and error analysis are covered. A balance of traditional low-tech equipment and state-of-the-art probeware is used.

#### **ADVANCED PLACEMENT PHYSICS 1 (LAB)\***

In this college level course, topics are covered in-depth and the material is cumulative. In the first semester, students study kinematics, Newton's laws, work, energy and power, momentum and collisions, as well as the universal law of gravitation. In the second semester they study circular motion, simple harmonic motion, torque, rotational kinematics and statics as well as rotational energy and angular momentum. Additionally, given extra time, topics within modern physics may be covered with an interest-based research project. Collaborative work is promoted in problem solving, laboratory experiments, and presentations. In the laboratory, students observe and explore physical phenomena and ultimately design experiments in inquiry-based labs. Experimental methods and techniques of data collection, interpretation and error analysis are covered. A balance of traditional low-tech equipment and state-of-the-art probeware is used. The course prepares students to take the AP Physics 1 test in May.  
*Prerequisites: Honors Chemistry, Honors Pre-Calculus. For Fifth and Sixth Formers.*

#### **ADVANCED PLACEMENT PHYSICS C (LAB)\***

In this college level course, topics are covered in-depth and the material is cumulative. In the first semester, students study kinematics, Newton's laws, work, energy, and power, linear momentum and collisions, circular motion, simple harmonic motion, rotational kinematics, rotational energy, angular momentum, and the universal law of gravitation. In the second semester they study electrostatics, conductors and dielectrics, circuits, magnetic fields, and electromagnetism. Both differential and integral calculus is used often throughout the course. Collaborative work is promoted in problem solving. In the laboratory, students observe and explore physical phenomena and ultimately design experiments in

inquiry-based labs. Experimental methods and techniques of data collection interpretation and error analysis are covered. A balance of traditional low-tech equipment and state-of-the-art probeware is used. The course prepares students to take the AP Physics C Mechanics test and the AP Physics C Electricity and Magnetism test in May. *Minimum prerequisites: Honors Chemistry and Calculus. For Fifth and Sixth Formers.*

#### **ADVANCED PLACEMENT PSYCHOLOGY**

The Advanced Placement Psychology course is designed to introduce students to the systematic and scientific study of the behavior and mental processes of human beings and other animals. Students are exposed to the psychological facts, principles, and phenomena associated with each of the major subfields within psychology. They also learn about the ethics and methods psychologists use in their science and practice. The course prepares students to take the AP Psychology exam in May. *For Sixth Formers.*

#### **SYRACUSE UNIVERSITY PROJECT ADVANCE: EARTH SYSTEM SCIENCE (LAB)\***

Earth System Science illustrates the interconnectedness of biologic, hydrologic, atmospheric, and geologic processes in shaping our planet. This new approach to geology reflects a more integrated view toward the study of Earth. In today's world, with increasing global population, the threat of global warming, and a growing demand for raw materials and energy, a basic understanding of the Earth system is more important than ever. *Minimum prerequisite: Pre-Calculus. For Fifth and Sixth Formers.*

### **ELECTIVES**

#### **ECOLOGY (LAB)\* (FALL)**

This semester lab course introduces basic concepts in the ecology of individual organisms, their populations, and the biological communities in which they live. Using the Canterbury environs as a case study, students explore forest and field ecosystems, identify and plot campus trees, and do a survey of the bird populations. Emphasis is on terrestrial plant and animal ecology. The historical, evolutionary, and ecological processes determining the distribution of ecosystems, habitats, and species are introduced. Theories of competition, predation, disease, and mutualism help explain the functioning of biological communities. *For Third and Fourth Formers.*

#### **HUMAN PERCEPTION AND BEHAVIOR (FALL)**

Why do we act the way we do? How do we process information? This course is designed to offer students a deep dive into the physical psychology of the brain. With topics including the Nervous System, Cognitive Functions, Neurons and Synapses, the class will focus on the larger more broad systems and functions of the brain. *For Fifth and Sixth Formers.*

#### **SCIENTIFIC PUBLICATIONS (FALL)**

How has social media changed the ways that people communicate scientific information? How do visual and media arts contribute to scientific learning? How does accessibility affect public understanding of scientific issues? In this class, students will explore these questions and more by engaging with a large variety of scientific materials ranging from traditional publications such as journal articles and documentaries to less conventional - but increasingly widespread - mediums such as podcasts, comics, Twitter threads, and Youtube videos. Students will learn to assess the educational value and credibility of a piece of literature based on scientific merit regardless of presentation style. Throughout the semester, students will perform several laboratory experiments and will communicate their results in a variety of ways with an emphasis placed on clarity and creativity. *For Fifth and Sixth Formers.*

**BIOENGINEERING (LAB)\* (SPRING)**

Bioengineers aim to solve real world problems through the purposeful manipulation of biological systems. This course provides a broad introduction to common bioengineering topics including protein design, genetic modification, disease treatment and prevention, and biomaterials. By performing both in-person and virtual labs, students will become familiar with an assortment of techniques used to study and design bioengineered products and their applications. *For Fifth and Sixth Formers.*

**ENVIRONMENTAL SCIENCE (LAB)\* (SPRING)**

This semester lab course introduces some of the Environmental issues facing our planet. Topics include population dynamics, how the human population drives these issues, biodiversity and endangered species, climate change and alternative energy sources, land use and agriculture, and water resources. The course will include several oral presentations. The students will spend time analyzing water quality of a local stream by collecting chemical and biological data. *For Third and Fourth Formers.*

**PSYCHOLOGICAL FUNCTIONS OF LIFE (SPRING)**

This semester long course takes a deep look at three of the five major senses. It explores touch and how our body accepts pain, our auditory pathways and how we hear, and vision and how we view our surroundings and our place in the world. This course also touches on topics such as emotion, psychological disorders, wakefulness and sleep - all things that are triggered, affected or based on how we perceive the world through our senses. *For Fifth and Sixth Formers.*

**ANIMAL ANATOMY (LAB)\* (FALL OR SPRING)**

Students in this course study the anatomy of a diverse selection of animal life in a project based approach. They learn the homologous and analogous structures and functions found in invertebrates and vertebrates. Students investigate structures at the cellular level through microscopes; the study of larger animals involves the dissection of preserved specimens. The course will also include how today's newer classification system reflects a more phylogenetic arrangement and more consistent evolutionary relationships. *Prerequisite: Biology. For Fourth and Fifth Formers.*

**ENGINEERING (FALL OR SPRING)**

This course encourages students to pursue engineering questions and technological solutions that emphasize research and problem solving using mathematical and scientific concepts. Students achieve a more advanced level of skill in engineering design by learning how to conceptualize a problem, develop possible solutions, design and build prototypes or models, and make modifications if necessary. Students will explore engineering design, construction technologies, energy and power technologies, including fluid systems, thermal systems, electrical systems, and communication and manufacturing technologies. *For Fifth and Sixth Formers.*

# STUDIO ARTS

Curator of The Edward J. Duffy Family Art Gallery: Charles Hollinger

## MAJOR COURSES

*(Course fee applies to all Studio Arts classes)*

### **CERAMICS (FALL)**

This course investigates various ways to create functional and sculptural objects with clay. Hand building techniques include pinch, slab, and coils along with a preliminary introduction to throwing on the wheel. *For Fourth, Fifth and Sixth Formers.*

### **SCULPTURE (SPRING)**

This course explores the processes of modeling, carving, construction, and assemblage in wood, paper, plaster, wire, and found materials. Students begin with projects that help them visualize the transition from two- to three-dimensional design. Assignments progress into sculpture-in-the-round or free standing works.

### **DRAWING (FALL OR SPRING)**

Students study the expression of visual thought through drawing. Areas covered include contour drawing, still life, portrait, perspective drawing, and experimental techniques. Students use pastels, charcoal, ink, pencils, markers and other mediums. Students will be assigned projects that utilize images from everyday surroundings and their imagination to form unique compositions.

### **PAINTING (FALL OR SPRING)**

Through experimentation and related exercises, students learn about painting as a medium of visual expression. Basic studies include drawing, color theory, and composition. Students explore a variety of subject matter from direct observation as well as from their imagination. Materials may include watercolor, acrylic, and collage. *For Fourth, Fifth and Sixth Formers.*

### **ADVANCED ART PORTFOLIO, ADVANCED 2-D OR 3-D DESIGN (SPRING)**

(OFFERED AS STUDENTS QUALIFY)

In this course, advanced students will focus on experiential techniques and concepts as they continue to develop skills to produce high quality works of art in two or three dimensions. Emphasis is placed on creating more complex visual statements using a wide range of materials and processes. Topics may include social or political statements resulting from in-depth studies of contemporary artists. Students will also have the opportunity to focus on a chosen subject or medium. The course is intended for advanced students creating a portfolio, but not taking the AP exam.

### **ADVANCED PLACEMENT TWO-DIMENSIONAL DESIGN**

(OFFERED AS STUDENTS QUALIFY)

This course is for the serious art student whose prior work exhibits advanced technical experience and conceptual thought processes. Students work in drawing, painting, photography, collage and mixed media. Students spend the academic year focusing on a chosen theme or concentration. Explored in-depth, this theme is expressed using various color, design, and compositional techniques. AP Portfolios are submitted in May.

### **ADVANCED PLACEMENT THREE-DIMENSIONAL DESIGN**

(OFFERED AS STUDENTS QUALIFY)

This course is for the serious art student whose prior work exhibits advanced technical experience and conceptual thought processes. The course focuses specifically on developing advanced spatial design solutions. An understanding of drawing, painting and sculpture is expected. Students spend the academic year focusing on a chosen theme or concentration. Explored in-depth, this theme is expressed using various color, design, and compositional techniques. AP Portfolios are submitted in May.

**ADVANCED PLACEMENT DRAWING**

(OFFERED AS STUDENTS QUALIFY)

This course is for the serious art student whose prior work exhibits advanced technical experience and conceptual thought processes. The course focuses specifically on using a variety of drawing media. Students spend the academic year focusing on a chosen theme or concentration. Explored in depth, this theme is expressed using various color, design, and compositional techniques. AP Portfolios are submitted in May.



# THEOLOGY

**Chair: Amy Omaña**

The Theology Department educates young men and women in the Catholic sacramental worldview and tradition in a challenging academic environment. Students discern their intrapersonal relationships with God and their neighbor and consider the moral rights and responsibilities that come with this relationship. The academic program includes an in-depth study of the life of Jesus and his mission, Scripture, tradition, Catholic social justice, morality, and world religions. The program informs our school community through active participation in service to others to build interpersonal relations in our surrounding communities and the liturgical life of the School.

## MINOR COURSES

### **THEOLOGY III: INTRODUCTION TO MORALITY**

This course introduces students to the concepts of morality and social conscience. Students will use Canterbury's Five Values as a framework to explore the aspects of the development of character and its influence on decision making as well as our relationship with God, self, and others. *For Third Formers.*

### **THEOLOGY IV: SOCIAL ACTION AND THE COMMON GOOD**

The common good as a foundational principle is closely intertwined with Human dignity and leads to solidarity. Because we are created as social beings, individual rights need to be experienced within the context of promotion of the common good. Modern Catholic Social Thought speaks of solidarity not only as a virtue to be enacted by individual persons one at a time, but also as expressed in the economic, cultural, political, and religious institutions that shape society. As human interdependence grows throughout the world, the common good takes on an increasingly universal complexion and consequently involves rights and duties with respect to the whole human race. Through topical readings, case studies, and personal reflection, students in the Fourth Form will imagine a new model of international interdependent responsibility and pursuit of the common good through the lens of Catholic Social Teaching and our relational roles as agents of moral action within society. Analytical reflection, critical thinking, and community dialogue will form the framework of the course. *For Fourth Formers.*

## FIFTH AND SIXTH FORM ELECTIVES

### **MORAL PHILOSOPHY (FALL)**

This semester course is an introduction to moral philosophy. We'll discuss various theories in moral philosophy regarding what makes actions right or wrong, what makes someone a good person, and what it takes for a person to be morally responsible for some action or attitude. We will ask a number of questions about such claims in order to better understand the nature of morality. With respect to all of the questions we will investigate competing answers and critically engage with them to evaluate their strengths and weaknesses. First, we will ask what we are doing when we say that an action is wrong: are we expressing a negative emotional reaction to it, offering our personal opinion, or making an objective claim about the action that it is possible to be mistaken about? Second, we will ask what makes actions right or wrong: is it the consequences of the action, or whether or not we have a duty to perform the action, or whether or not good people characteristically perform those actions? This course aims to evaluate these moral theories, in part, by focusing on how they bear on particular contemporary moral issues but also to improve the student's ability to think carefully and critically about ethical issues and to express his/her own views in a clear, well-reasoned way through both writing and conversation.

### **RELIGION AND CONFLICT (FALL)**

All religions teach that peace and justice are core components of their nature. Yet, the reality is that members of religions often use religious principles to justify violence towards others. What are we to make of this? How should we understand it? Religiously justified violence is a constant theme in our world. This course will look at various case studies of the interaction between religion and violence and their relevance to our current world from multiple religious perspectives.

## **LIBERATION THEOLOGY (SPRING)**

Liberation theology emerged as one of the most important theological movements of the twentieth century. Overcoming poverty became a fundamental teaching of liberation theology. From its beginning, this movement has focused especially on explaining what it means to follow Jesus in a world marked by staggering poverty and structural injustice. Liberation Theology is understood as a dynamic, modern, spiritual-political-social movement. Students will examine the social and biblical contexts out of which liberation theology was born; consider closely several seminal liberationist texts; analyze various critiques of liberation theology; and consider the present and future of the movement.

## **METAPHYSICS (SPRING)**

Metaphysics is the study of reality—of what exists. Questions within the field of metaphysics involve many of the "big" issues in life: Is there an absolute right and wrong? Does God (or a creator) exist? Who are we? Does free will exist or are we traveling on a predetermined path? What is the nature of evil and why does it exist at all? All of these concepts and more, as well as their implications for human thought and life, are part and parcel of the philosophical discipline of metaphysics. While most people may not think in terms of "doing metaphysical thought", the fact remains that all thinking human beings have some sort of metaphysics that guide their lives everyday and inform their basic "worldview." Students in this course will explore various topics in metaphysics with the aim of grasping a deeper understanding of their own reality, existence, and place in time and space. Students will be challenged to think and debate, as well as write and synthesize.

## **GRIEF AND LOSS (FALL OR SPRING)**

Grief and Loss is an exploration into the different aspects of grief, death, and life. Students will explore common misinformation about grief, as well as the different types of loss other than death. Other topics covered are different cultural perspectives on death, the survivor's experience of grief, and different cultural and religious beliefs about life after death. We also explore near-death experience and conclude the course by reading the book *The Shack*. The goal of the course is to introduce students to loss in a way that is informative and give them the tools to help navigate this experience in the future.

## **RELIGIONS OF THE WORLD (FALL OR SPRING)**

This is an introductory study of past and present world religions. Looking through a chronological lens, students begin with the development of religion as a way to interpret and understand the primitive world. In the first semester, students will study the earliest indigenous traditions as well as Hinduism and Buddhism. In the second semester, students go beyond the eastern traditions and explore the monotheistic traditions of Judaism, Christianity, and Islam. Added to our historical and doctrinal study is a review of the ethical stance each religion takes on the contemporary issues of peace and justice.

## **SOCIAL JUSTICE (FALL OR SPRING)**

Students in this course will explore social justice issues, the foundational principles of Catholic social teaching, and apply their knowledge and faith to their experiential service work by engaging in an ongoing community service project. This course requires students to engage in learning about the organizations and communities they serve, the challenges they face, and issues of social justice on a local, national, and global level. While students engage in their service projects independently, they meet as a group to examine the theological foundations of social justice, discuss readings, current events, and to share reflections on their experiences. The coursework includes assigned readings, a reflection journal, and culminates with a final project presentation or research project.

## **SPIRITUAL JOURNEY (FALL OR SPRING)**

Readings from scripture, literature, modern theologians, and spiritual heroes will be our guides through an exploration of the theme of life as a journey toward reality, universal truth, and ultimately God and spirituality. Students will also specifically explore the concept of pilgrimage. This course will cover topics such as mindfulness, spiritual renewal, intentional travel, and the sacred journey. Inspired by formulating more questions than answers, the value of searching for those answers, and the process of discernment, students will challenge themselves to consider how responses to experiences allow opportunity to draw into deeper understanding and connection with God, self, and others.