

2020

**course**

descriptions

**ready ...  
set ... discover!**

Create your own path of discovery  
from among our more than  
120 course offerings  
and 22 programs

**high  
school**  
offerings:

# ACADEMIC ENRICHMENT

*Note: Boarding students take two major courses and one minor course. Day students may take less than a full course load.*

## FIVE-WEEK COURSES

### ARTS (Double-Period Minor Courses)

#### fa012 Ceramics

This course introduces students to the medium of low-fire clay. Students explore hand-building, wheel work, glazing, underglazing, and a variety of other finishing and sculptural methods. Students are encouraged to concentrate on developing a single technique and on finishing a project that expands the student's knowledge of the craft. They produce multiple pieces during the course, which culminates with a show of student work at the Paul Mellon Arts Center Gallery. *(Note: Matriculating and current Choate students who wish to take the course to fulfill a diploma requirement must first obtain permission from the academic year Arts department head as part of the application process for Summer Programs, and must then comply with all attendance and course expectations. The Arts department head will determine final eligibility for diploma credit based upon the student's successful completion of the course.)*

#### fa013 Drawing

In this drawing course, students explore concepts of line, form, and composition. A wide variety of materials and techniques are used to realize this objective. Students are taught to draw from observation and from their imaginations. Emphasis is placed on individual growth and development, and the course culminates with a

show of student work at the Paul Mellon Arts Center Gallery. *(Note: Matriculating and current Choate students who wish to take the course to fulfill a diploma requirement must first obtain permission from the academic year Arts department head as part of the application process for Summer Programs, and must then comply with all attendance and course expectations. The Arts department head will determine final eligibility for diploma credit based upon the student's successful completion of the course.)*

#### fa014 Oil Painting

This course introduces students to the basic techniques of oil painting through an exploration of the key elements of still life, portraiture, and landscape. Students are taught how to see and mix color, modulate values, and develop form. Assignments are based on traditional and contemporary painting techniques and are designed to stimulate the student's imagination and technical facility. At the end of the program, students display their works at the Paul Mellon Arts Center Gallery. *(Note: Matriculating and current Choate students who wish to take the course to fulfill a diploma requirement must first obtain permission from the academic year Arts department head as part of the application process for Summer Programs, and must then comply with all attendance and course expectations. The Arts department head will determine final eligibility for diploma credit based upon the student's successful completion of the course.)*

#### fa015 Digital Movie Making

This class takes students through the pre-production, production, and post-production steps in the creation of video projects. In pre-production, students plan, script, and storyboard their ideas. In production, students learn how to use a digital video camera to collect images that communicate a story to the audience. Camera technique and control, balanced with good composition, are mastered in conjunction with sound capture and reproduction so that ideas can be effectively expressed to an audience. In post-production editing, students need to be comfortable with basic computer operations as rough video footage is captured and then edited using non-linear editing software. Student projects begin with the isolation of elements of production and design and progress to short but complete group video projects. At the end of the session, projects are presented to the community at an informal screening. *(Note: Matriculating and current Choate students who wish to take the course to fulfill a diploma requirement must first obtain permission from the academic year Arts department head as part of the application process for Summer Programs, and must then comply with all attendance and course expectations. The Arts department head will determine final eligibility for diploma credit based upon the student's successful completion of the course.)*

**ENGLISH** (Major Courses)

The following courses are open to students who will have completed the U.S. equivalent of grades 8 and 9 by the start of Summer Programs.

**EN11 Short Story, Short Novel**

This course focuses on the development of analytical reading and writing skills through the study of a variety of pieces of short fiction from a global perspective. Students examine how writers from different cultures explore similar themes, conflicts, and characters.

**EN12 Intermediate Writing Skills**

Students receive instruction in writing clear, coherent, and balanced sentences and in constructing unified paragraphs. They also review basic grammar and usage and work on vocabulary development. This popular course is wonderful preparation for many higher-level English classes. Readings, which complement the varied writing assignments, may include short stories, essays, and poems.

**EN15 Debate**

On one level, debate is an intellectual sport, but on another, debate is superb preparation for life. Students learn to be objective and analytical, to research and organize cases, to prioritize and extemporize, to overcome shyness and handle criticism, to reach an audience, and to work as a team. Beginning with simple extemporaneous debates, (e.g. “winter is better than summer”), students work up to prepared team debates on substantive and subtle issues of public policy, moral ethics, history, and science. The course is intended for potential tournament debaters as well as non-debaters who want to learn how to think faster on their feet.

The following courses are open to students who will have completed the U.S. equivalent of grades 10 and 11 by the start of Summer Programs.

**EN22 Advanced Writing**

By definition, an essay is an attempt or effort. Designed for upper-level students, this course centers on the notion of the essay as a trial and challenges students to hone their style and craft. To this end, students compose three pieces – an analytical, expository, and personal essay – and take each through the writing process, devoting ample time for peer review and revision. Students consult models based on their readings from the anthology, *50 Essays*. By the end of the course, students have a polished essay to use in the college application process.

**EN24 American Short Stories**

This course introduces students to the many voices of American culture through close readings of a series of short stories, beginning with Edgar Allan Poe, Nathaniel Hawthorne, Herman Melville, Sarah Orne Jewett, F. Scott Fitzgerald, and Ernest Hemingway, and concludes with the broad diversity of more recent fiction: Flannery O’Connor, John Cheever, Raymond Carver, Chang Rae-Lee, Amy Tan, Louise Erdrich, Alice Walker, Tim O’Brien, Jhumpa Lahiri, Julia Alvarez, Sherman Alexie, Junot Diaz, and Phil Klay. While the close reading of the texts and many short stories are useful for all Summer Programs students to develop their reading and writing skills, many international students also find it a valuable introduction to American culture.

**ENGLISH** (Minor Courses)

The following courses are open to students who will have completed the U.S. equivalent of grades 8, 9, 10, or 11 by the start of Summer Programs, unless otherwise noted.

**en011 Public Speaking**

Building a speaker’s confidence is the main goal of the course. This course introduces students to types of speeches, methods of delivery, and qualities an audience looks for in a speaker, allowing ample practice in both prepared and extemporaneous speaking. Students deliver their own prepared speeches as the culmination of their work. They speak in a variety of settings and are videotaped at least once for self-critiquing purposes.

**en013 Reading and Study Skills**

This course emphasizes active reading and study skills to help achieve success across disciplines. Students learn strategies for note taking, annotating and summarizing texts, mapping concepts in texts, and varying their reading rate. Students practice “reading for the conversation” and determine the primary audience and significance for a text. By the end of the course, students are prepared to tackle future reading assignments.

**en021 The Personal Essay**

Knowing how to write a compelling personal essay is important, for it has a wide variety of uses including college, scholarship, and employment applications. Assignments for this course, therefore, focus on writing the personal essay for the appropriate audiences as well as artistic expression. Also covered is a general overview of English grammar and punctuation. By the end of the course,

students produce two or three working drafts of personal essays that may be used for application purposes.

*(Note: Open to students who will have completed the U.S. equivalent of grades 9, 10, or 11.)*

## **HISTORY AND SOCIAL SCIENCES** (Major Courses)

The following courses are open to students who will have completed the U.S. equivalent of grades 8 and 9 by the start of Summer Programs.

*Please note: Students with a special interest in politics should consider the John F. Kennedy '35 Institute in Government. See description on p. 8.*

### **HS10 World Religions**

This course exposes students to the beliefs, practices, ethics, and histories of five major world religions: Judaism, Christianity, Islam, Hinduism, and Buddhism. Students study each of the religions in order to gain an understanding of its meaning to individual believers and its impact on human history. The course utilizes resources available through technology as well as a standard text.

*(Note: Matriculating and current Choate students who wish to take the course to fulfill the diploma requirement in philosophy/religion must first obtain permission from the academic year History, Philosophy, Religion, and Social Sciences department head as part of the application process for Summer Programs, and must then comply with all attendance and course expectations. The department head will determine final eligibility for diploma credit based upon the student's successful completion of the course.)*

### **HS11 World Issues**

A variety of media sources (newspapers, magazines, the Internet, video) serve as the source material for an in-depth study of the current state of affairs around the world. Careful reading and research skills are emphasized. Students write weekly essays on important topics covered in the course.

The following courses are open to students who will have completed the U.S. equivalent of grades 9, 10, or 11 by the start of Summer Programs

### **HS21 Economic Principles**

A carefully paced study of important economic concepts is presented in this course. How much money should be in circulation? Should the government tell business owners and consumers how to behave? Why do we have inflation? How do presidents make economic policy? The concepts of supply and demand, opportunity cost, scarcity, national debt, and international trade are discussed to gain a greater understanding of the U.S. economy and its links to the global economy.

### **HS25 Introduction to Psychology**

Focusing on recent developments in psychology and self-understanding, this course covers several theories of personality, neuroscience, and human behavior. A developmental approach to various psychological theories (e.g. those of Freud, Horney, Skinner, Erikson, and Rogers) creates a framework for the study of identity and self-image, family and peer relationships, and conformity and prejudice. *(Note: Students who successfully complete*

*this course will have fulfilled the prerequisite for Choate's upper-level psychology courses.)*

## **HISTORY AND SOCIAL SCIENCES** (Minor Courses)

### **hs011 The Spy Game**

How does intelligence relate to national security? How vital was the creation of intelligence in America? Students learn about the Golden Age of Central Intelligence, spanning the period between Pearl Harbor to the end of the Cold War. A simulation intelligence game is a culminating class project.

### **hs012 Exploring Ethical Dilemmas**

Each of us has to wrestle with a wide range of ethical questions in our lives. Some of these questions are personal: Should I cheat? Should I keep my promise? Is it ever acceptable to lie? Some of these questions are about broader values and policies in society: Should we allow stem cell research? What responsibility do we have to help the poor? Should capital punishment be practiced? This course examines frameworks for approaching these kinds of questions and encourages students to investigate moral issues using research and reasoning, developing their own responses and defending them articulately.

### **hs021 Wall Street**

Though only a mile long, Wall Street may be the most celebrated street in the world. This course emphasizes basic microeconomics, an understanding of the current stock market, a history of the stock market in the 20<sup>th</sup> and 21<sup>st</sup> centuries, and an overall investigation of the financial

world and the decision-making processes of corporations. Students develop and track their own portfolio in this course while gaining an understanding of the stock market and financial terminology.

## **LANGUAGES** (Major Courses)

### **LN10 Introduction to Arabic**

This introductory Arabic course is a five-week intensive immersion program. The course introduces high school students who have no previous knowledge of Arabic to the Arabic language and culture. Students learn the Arabic alphabet and sounds, build vocabulary, acquire basic grammar and sentence structures, and read and comprehend short authentic texts in Modern Standard Arabic. Students gain a better understanding and appreciation of Arabic culture through music, poetry, movies, and culinary art. Different media are used in this student-centered class to make the learning experience fun and effective. This course helps prepare students for the possibility of study abroad in high school.

### **LN11 Introduction to Latin**

This course is designed for students with no prior Latin background who wish to gain an advantage in their future language studies. Latin is the fundamental root of all Romance languages (French, Spanish, Italian) as well as English. This introductory Latin course explores the structure of language. Students master parts of speech and basic syntax (the formation of phrases, clauses, and sentences) using Latin vocabulary. Students read short stories in Latin and focus on sentence structure, original Latin quotes, and etymology.

### **LN12 Introduction to Chinese**

This course is designed to introduce non-heritage learners to the basic skills of Mandarin Chinese. There is a focus on Mandarin tones, sounds, and numbers, as well as writing characters in standard simplified form using the proper stroke order. Fundamental grammar patterns are also introduced. Other goals include reading and speaking dialogues that feature activities such as asking directions, telling time, making requests, and addressing family members. Students are exposed to the traditions, culture, and current affairs of China. This course helps prepare students for the possibility of study abroad in high school.

### **LN13 Introduction to French**

Spoken as a native language in countries on five continents, French has contributed enormously to language and culture worldwide. This course, which is aimed at students with little or no background in the language, introduces students to rules of grammar, vocabulary, and conversation central to mastering French. Furthermore, students explore French culture as it exists from the serpentine streets of the Latin Quarter to the Congo. This course helps to prepare students for further study in French.

### **LN15 Conversational French: French Language Through Social Media**

Through a study of various social media (YouTube, Instagram, Twitter) and French news outlets (*Le Monde*, *Libération*, TV5monde), this continuation of intermediate to advanced French will allow students to develop both their oral and aural

language skills through analysis and discussion of video clips, short movies, news reports, images, Tweets, and even #hashtags. With the Internet as our primary resource, students will be able to travel virtually to a variety of countries in the francophone world, thereby developing their awareness and appreciation of various cultures and identities. The ACTFL standards of interpersonal, interpretive, and presentational speaking skills will be emphasized, and grammar will be reviewed according to the students' specific level and needs. This conversational class will be taught entirely in French, helping to hone students' speaking skills and prepare them for the possibility of studying abroad in high school.

### **LN16 Intermediate Spanish**

Students explore contemporary Spanish and Spanish-American culture while building vocabulary and sentence structure. While delving into themes such as global challenges, the arts, family, and community in a level-appropriate manner, students work to strengthen speaking, listening, reading, and writing skills. Students study vocabulary and grammar, and engage authentic material in the language by listening to songs, reading short stories, and studying works of art from the Spanish-speaking world. Intermediate Spanish helps prepare students for the possibility of studying abroad in high school.

### **LN18 Introduction to Ancient Greek & Classical Humanities**

Homer's *Odyssey* is a core text for freshman high school curriculum. This summer course introduces students to the world of ancient Greece—its

language, art, religion, history, geography, and literature. Through an in-depth study of this magnificent legacy, students will gain a unique level of understanding and preparation for both high school English and foreign language study, as the Greek language will be a significant component of the course.

## **MATHEMATICS, COMPUTER SCIENCE, AND ROBOTICS** (Major Courses)

### **MA11 Introduction to Algebra I**

This course is for students who need additional preparation before entering an Algebra I class in the fall. Assuming sound arithmetic skills, including operations with signed numbers, students explore the concept of a variable and its use in problem solving, with an emphasis on linear relationships. Specific topics include understanding and interpreting rates of change, graphing linear functions, and solving linear equations. Throughout the course, students work to strengthen their mastery of skills necessary for success in future algebra classes.

### **MA21 Introduction to Algebra II**

For students who have completed Algebra I and desire to be introduced to Algebra II, this course aims to enhance the understanding of fundamental concepts and offers ample opportunity to strengthen skills. Topics include evaluating algebraic expressions, solving linear equations, and working with inequalities. Students also explore various techniques for solving systems of linear equations, as well as linear programming applications. Additional

topics include an introduction to mathematical functions and exploration of quadratic equations.  
*Prerequisite: full-year course in Algebra I.*

### **MA22 Concepts in Geometry**

This course exposes students to various topics in geometry, including the Pythagorean Theorem, angle relationships, properties of parallel lines, polygon angles, and tessellations. The students may use GeoGebra, a free dynamic software package, to enhance understanding of course concepts. Students also encounter the idea of mathematical proof.

### **MA23 Introduction to Computer Programming**

This course provides students with a solid foundation in programming. Concepts such as program design and control, looping, Boolean logic, variables, arrays, and basic object-oriented programming are covered. By the end of the course, students have a portfolio of artistic projects including a generative art program and a game. This course assumes no background in formal computer programming, but a laptop computer is required. *(Note: Open to students who have completed Algebra I.)*

### **MA26 Introduction to Game Theory**

Game Theory is the mathematical study of competition, collaboration, and conflict. In this applied-mathematics course, students explore classic game theory “games” including Prisoner’s Dilemma, Chicken, Tragedy of the Commons, and Stag Hunt. Topics covered include payoff matrices, the Nash Equilibrium, zero-sum games, and various types of strategies. Armed with a newfound

understanding of strategy and decision-making, students challenge each other to popular games such as poker, Settlers of Catan, Battleship, Magic, and Stratego as well as simple games like Tic-Tac-Toe and ConnectFour. *Prerequisite: Algebra I required and Algebra II preferred.*

### **MA34 Advanced Topics in Mathematics**

This course examines a variety of advanced topics in high school mathematics. Areas of focus will be determined by student and instructor interest, previous coursework and a diagnostic exam given at the start of the course. Topics could include: functions (exponential, logarithmic, rational, trigonometric, parametric), limits, polar graphs, sequences and series, conic sections, trigonometry, statistics, and/or advanced topics in trigonometry. In the process of looking at the chosen topics, students will review techniques for solving equations (exponential, logarithmic, polynomial, rational, and radical), graphing, and analyzing functions using a graphing calculator. A graphing calculator is required (the math department recommends the use of the TI-84 CE for this course).  
*Prerequisite: Geometry and Algebra II.*

### **MA35 Introduction to Robotics**

This course introduces students to the fundamentals of robotics using the VEX platform. Students learn to design and build robots, to program autonomous behaviors, and to use sensors to improve a robot’s ability to interact with its environment. Robots will compete in challenges, including racing and navigating over and around a variety of obstacles. This course

also serves as an introduction to some aspects of computer programming, including program design and control, looping, and Boolean logic. Prior programming experience is not necessary. *(Note: Matriculating and current Choate students who complete this course may utilize the experience as a supplementary prerequisite in applying to Choate's Advanced Robotics Signature Program. Applying to the program does not guarantee admission.)*

## SCIENCE (Major Courses)

The following courses are open to students who will have completed the U.S. equivalent of grades 8 and 9 by the start of Summer Programs

### SC11 Introduction to Biology

Designed for students planning to study biology in the fall, this course stresses the study, laboratory, report writing, and analytical skills necessary for successful work in biology. Topics include evolution by natural selection, biochemistry, cell structure and function, membrane transport, mitosis, meiosis, and genetics. Students use microscopes, molecular models, and other tools to better understand the material.

### SC12 Introduction to Physics

Designed for students planning to begin the study of physics in the fall, this course stresses laboratory work, report writing, and problem-solving skills necessary for successful work in physics. Topics include mechanics, vectors, optics, motion, force, and waves. Students practice solving problems and gaining familiarity with several fundamental principles. They also experience the excitement

of laboratory work and of drawing conclusions from lab experiments. *Prerequisite: Algebra I.*

### SC15 Global Scientific Issues: Searching for Solutions

This non-laboratory course takes up various scientific problems confronting the human species on our fragile planet and also examines ideas for combating these problems. What sources of energy will best serve humankind in the future, while doing the least harm? How can we best employ water for personal use and irrigation without leading to health problems and soil degradation? What are the causes and effects of global warming, and how can Earth's temperatures be stabilized? What measures have proven effective, and what innovations may be employed in the future, in controlling AIDS, malaria, and possible pandemics? How will the growing populations of the world obtain adequate nutrition and shelter? These questions call upon students to consider various viewpoints as they seek ways to achieve sustainability for the human species. The course includes oral presentations and debates as well as writing and assessments. *(Note: Matriculating and current Choate students who wish to fulfill the diploma requirement in contemporary global studies must first obtain permission from the academic year Science department head as part of the application process for Summer Programs, and must then comply with all attendance and course expectations. The Science department head will determine final eligibility for diploma credit based upon the student's successful completion of the course.)*

The following courses are open to students who will have completed the U.S. equivalent of grades 9, 10, or 11 by the start of Summer Programs

### SC21 Introduction to Chemistry

This course stresses the study, laboratory, report writing, and problem-solving skills necessary for successful work in chemistry. Different laboratory exercises along with data analysis and class discussion complement the study of introductory concepts. Topics include chemical reactions, chemical equations, the mole, and stoichiometry. All students are required to have a scientific graphing calculator.

### SC23 Anatomy and Physiology

Systems of the human body and their interactions are examined through dissections, class discussions, and readings. Laboratory experiments include dissection of mammalian organs such as the heart and eye, and recording of muscular, circulatory, and respiratory responses to rest and exercise. The final lab exercise consists of a whole mammal dissection, during which the anatomy of the major systems of the body are explored over the course of three days. *Prerequisite: Biology.*

### SC24 Forensics

The application of scientific principles to modern criminal justice is examined through a range of inquiry-based units. Activities and laboratory experiments are used to introduce aspects of crime scene investigation, including: fingerprint analysis, DNA and protein typing, a comparison of animal and human hair, forensic skeletal remains, and simulated



bloodstain analysis. The final lab exercise consists of a crime scene investigation, during which students collaborate to examine the evidence before presenting their findings in a final report. *Prerequisite: Biology.*

### SC26 Environmental Science

Environmental Science combines elements of physics, chemistry, and biology to develop an understanding of the interactions of the physical environment and the organisms that live in it, including humans. Understanding these interactions is important for anyone with an interest in science or public policy. This class introduces central concepts in environmental science and prepares students for further study in the field. Topics may include soils and substrates, nutrient cycling, land use planning, water and hydrology, the atmosphere, climate, and energy resources. Class discussions include current issues in environmental science and provide background for students to better understand these issues.

### SC28 Data Analysis and Visualization in Environmental Science

Large datasets have become increasingly valuable in making decisions that help to guide sustainable development policy, protect species diversity, manage alternative energy systems, and shape climate change mitigation and adaptation strategies. In this course, students learn to find and filter large public datasets, to analyze and visualize data, and to develop and interpret mathematical and conceptual models important for conducting

scenario analysis. Students also collect data from energy and weather monitoring systems at the Kohler Environmental Center. Software and languages such as R, Tableau, Mathematica, Python, and ArcGIS are used throughout the course. Students complete independent and group projects using datasets of their choosing. Demonstrated ability in a science course and Algebra II or above are required to enroll in this class; however, no previous coding experience or familiarity with particular software programs is necessary. Expectations for project work are based, in part, upon the previous experience of the student.

*Prerequisite: Algebra II*

### SCIENCE (Minor Course)

#### sc017 Astronomy

This non-laboratory course integrates historical, descriptive, and modern technical aspects of astronomy with theories about the evolution of the universe. Students have the opportunity to view planets, nebula, and galaxies. The emphasis of the course is on the historical growth of modern astronomy, the observed characteristics of the planets and the minor members of the solar system, and the theories that account for them. Students have the opportunity to view the night sky with Choate's telescopes.

## HIGH SCHOOL SIGNATURE PROGRAMS

In addition to Academic Enrichment courses, we offer unique and distinctive Signature Programs that allow High School students the opportunity to advance in a particular area of study. Signature Programs courses may not be combined with Academic Enrichment courses. However, students may combine 2, two-week Signature Programs to create an individualized four-week program.

### FIVE-WEEK PROGRAMS

#### IMMERSION GEOMETRY

This intensive course covers the standard year-long geometry curriculum. At a brisk pace, students explore the fundamentals of Euclidean geometry as well as various applications of these concepts in the real world. As time permits, algebra is incorporated to help students review and strengthen their problem-solving skills. After gaining experience making conjectures and testing hypotheses, students progress to writing formal deductive proofs, using paragraphs as well as the two-column format. In order to complete this year-long course in the summer session, students attend class for the full academic day and may not enroll in additional courses. Enrollment carries a full five-week boarding or day tuition. This course is appropriate for highly motivated students who have completed Algebra I. A graphing calculator is required. *(Note: Choate students who*

*successfully complete this course may fulfill the diploma requirement in geometry. Returning and matriculating students entering the fourth form who have not yet completed a geometry course may choose this course for that purpose. Students entering the third form are generally not approved to take this course. In all cases, students must first obtain permission to take the course for credit from the academic year Mathematics and Computer Sciences department head, and then must comply with all attendance and course expectations. The Math department head will determine final eligibility for diploma credit based upon the student's successful completion of the course. Students in Immersion Geometry receive a traditional letter grade which is included on the Summer Transcript.)*

### **THE JOHN F. KENNEDY '35 INSTITUTE IN GOVERNMENT**

Established to honor the memory of President Kennedy — a member of Choate's Class of 1935 — The John F. Kennedy '35 Institute in Government is designed to stimulate curiosity about public policy and the desire to serve the public interest. As Kennedy Institute participants, students take three KI classes on campus over the course of four and half weeks and experience government in action during a multi-day trip to Washington, D.C. where they watch House and Senate debates, observe committee hearings on Capitol Hill, and spend time with officials in The White House and the Supreme Court. In D.C., students build on what they have learned in the classroom and get a real insider's feel for politics in meetings with representatives of interest groups, national political parties, and the

media. *Prerequisite: While knowledge of politics is not necessary for the program, the desire and willingness to learn about politics, economics, U.S. history, and international affairs both in class and in D.C. is essential.*

#### **KI41 American Government and Politics**

In this foundation course, the Constitution and federalism are viewed through the lens of contemporary politics. Students learn how the offices of the President, Congress, and the Supreme Court operate in theory and reality. This course focuses on topics of current interest and major political candidates and their respective party platforms.

#### **KI42 Foundations of Political Thought**

This course explores the underpinnings of Western political philosophy and exposes students to the basic tenets of modern economics and the ways in which public policy shapes and is shaped by economic conditions. The course explores the meanings of conservatism and liberalism in contemporary politics and provides comparisons with other political and economic systems where appropriate.

#### **ki020 Topics in Public Policy**

*The New York Times* and other national and international newspapers serve as the lens through which students analyze how different groups influence American public policy. This work prepares Kennedy Institute students for meetings on the Washington trip.

### **ENGLISH LANGUAGE INSTITUTE (ELI)**

The English Language Institute (ELI) attracts talented students from around the world who have studied English for at least three years and who seek to enhance their English language skills in a supportive and rigorous five-week program. Through the use of a wide variety of language learning strategies, ELI courses in reading and writing drive substantive changes in each student's ability to read, write, speak, and understand spoken English. Course placement is determined by a diagnostic test administered on the first day of classes. Several trips and activities within New England are included in the program and enable students both to practice their language skills and to experience American culture in a variety of settings.

#### **(Major Courses)**

##### **HSEL10 Writing Workshop I**

This course reviews the structures of English and expands vocabulary. Students practice their writing ability through personal, persuasive, and expository essays. Language skills are further developed through discussion, grammar exercises, reading, assigned compositions, and free writing exercises.

##### **HSEL11 Reading Skills**

This course strengthens strategies for reading in English through the study of a broad range of texts and multimedia. Analysis of literary devices, character development, and themes encourages students to become reflective learners and active participants in class and the world around them.

**[Minor Courses]****hsel007 Foundational Reading Skills**

This course reviews foundational reading skills such as how to identify the six basic syllable types and syllable division. In addition, students study intonation, rhythm, and how to place emphasis on certain words when reading out loud. Students also practice reading comprehension skills such as annotation, inferencing, and making connections through a variety of short stories and poems.

**hsel011 Toefl Prep**

This course enables students to assess and improve their level of skill in three areas of English proficiency measured on the Test of English as a Foreign Language: listening comprehension, structure, and reading comprehension. The course requires constant drilling, diligent completion of TOEFL-based exercises, and continuous practice with vocabulary terms.

**SUMMER STUDY ABROAD**

Choate Rosemary Hall's Summer Study Abroad programs offer a life-changing experience of language immersion, intellectual discovery, and cultural exchange. Located in France, Jordan, and Spain, Choate's four-week to five-week programs enable participants to live and learn in a new and different environment. By stepping out of their comfort zones, participants challenge preconceived notions about other cultures and ways of thinking, becoming more flexible, versatile, and creative. Choate continuously monitors world events and may, when safety and/or security dictates, move a program's location, or cancel a program entirely.

*The application deadline for Choate's Summer Study Abroad programs is March 15, 2020.*

**France**

Our five-week program in Paris offers intermediate to advanced level high school French language students the opportunity to live in Parisian homes, take courses conducted exclusively in French, participate in cultural outings that use the city as an extension of the classroom, and travel to the Loire Valley. Through art history and French history, and during several museum visits per week, as well as regular reading and writing, students improve their interpersonal, interpretive, and presentational skills. Daily immersion in French studies and in the routines of life in Paris enables participants not only to improve their knowledge of French language and culture, but also to gain self-confidence and a better understanding of themselves as global citizens. Upon successful completion of the Art History course, Choate students earn a visual arts credit. Successful completion of Summer Study Abroad in France also fulfills the contemporary global studies graduation requirement for Choate students.

**Jordan**

Our four-week program in Jordan is open to beginning through advanced level Arabic language students who are interested in deepening their knowledge of the Arabic language and exploring the rich culture of the Hashemite Kingdom of Jordan, a land of mesmerizing beauty and contrasts. During this month-long program, students live with host families in Amman, take Modern Standard Arabic

and Levantine colloquial courses, engage in history and current issue workshops conducted in English, and participate in cultural activities. Immersion in the routines of daily Jordanian life enables participants to hone their language skills and also to gain self-confidence and a better understanding of themselves as citizens of the world. Excursions to Jerash, Wadi Rum (the desert), and Petra, among others, round out the experience. Successful completion of Summer Study Abroad in Jordan fulfills the contemporary global studies graduation requirement for Choate students.

**Spain**

Our five-week program in Spain offers intermediate to advanced level high school Spanish language students the opportunity to live, study, and travel in Spain. Students reside with families in La Coruña, Spain (Galicia) and take courses taught exclusively in Spanish by our in-country faculty. Daily immersion in Spanish studies and in the routines of life in La Coruña enables participants to improve their knowledge of Spanish language and culture, and to gain self-confidence and a better understanding of themselves as global citizens. Visits to historical and cultural sites in and around La Coruña, including a trip to the capital city of Galicia, Santiago de Compostela, as well as trips to Salamanca, Segovia, Toledo, and Madrid complement the classroom experience. Successful completion of Summer Study Abroad in Spain fulfills the contemporary global studies graduation requirement for Choate students.

## FOUR-WEEK PROGRAM

### THEATER ARTS INSTITUTE

The Theater Arts Institute offers students a total theater immersion experience. Students learn the process of theater through daily classes in acting, singing, dance, set and costume design, and playwriting. In addition, students attend nightly laboratory sessions to work together on performance and design projects and attend master classes in movement, voice and diction, improvisation, lighting design, children's theater, and stage management. All aspects of the dramatic experience are highlighted, with opportunities for young artists to grow in many areas. Throughout the summer, students complete scene work in classical and modern drama, rehearse and perform numbers from a variety of musicals, and design set and costume pieces for different periods. Weekly field trips to professional theater and artistic performances throughout New York and New England inform our work and inspire our students. This program is designed for young people who are serious about expanding their knowledge and willing to take risks in all areas of theater.

## TWO-WEEK PROGRAMS

Combine two-week offerings from Session I and Session II to create an individualized four-week program.

### DOCUMENTARY FILMMAKING

**(Session II)** This program offers a two-week introduction to documentary filmmaking for high school students. Week one focuses on identifying the

strategies and tools of documentary filmmakers through screenings and discussion of a wide array of documentary content. Week two focuses on a shooting and editing practicum and the production of a documentary short film. This hands-on course offers real-world skills and experience in project planning and development, interviewing subjects, and using film to tell a story. Field trips to local businesses and facilities expand the scope of subject matter available to students, and guest artists visit the classroom to share their professional journeys and offer workshops in their area of expertise. Evening lab hours complement class day sessions and enable students to accomplish even more with their projects.

### INTRODUCTION TO OCEANOGRAPHY

**(Session II)** In this two-week introduction to Oceanography, students are exposed to content, skills, and technologies used by oceanographers. Topics include bathymetric maps, mineral identification, salt marsh habitats, ocean currents, tides, and the health of our oceans. When possible, students experience science happening in real time by connecting with researchers on board the exploration vessel Nautilus. Numerous field trips provide opportunities to learn about biotic and abiotic factors, to interact with the myriad of creatures that live in an estuary such as plankton, crabs, and a variety of fish. Recent trips have included the Peabody Museum at Yale University, Mystic Aquarium, Hammonasset State Park, and a marine life excursion on Long Island Sound.

## MATH AND SCIENCE WORKSHOPS

### MA60 Concepts in Algebra II

This workshop is designed to give students an introduction to some of the core topics and functions covered in a typical Algebra II course. Families of functions (linear, absolute value, quadratic, cubic, reciprocal, root, exponential, and logarithmic) will be covered with a focus on domain, range, and transformations. The course will explore composition of functions as well as inverse functions. Solving equations will be taught as a means to help analyze functions and graphs. After further study of the families of functions, polynomial and rational functions may be introduced. Connections will be made between functions and their real world applications. Time permitting, the course may include other topics such as: systems of equations or inequalities, matrices, regression analysis, or conic sections. A graphing calculator is required (the math department recommends the use of TI-84 series calculators for this course). *Prerequisite: Algebra I*

### SC40 Concepts in Chemistry

Designed as an introduction to some of the central concepts in first-year chemistry courses, this course exposes students to some of the more challenging parts of the traditional chemistry curriculum so they have a greater chance for success. Classroom demonstrations as well as lab exercises will provide a framework for making connections between phenomena and theory. Proper problem-solving techniques are emphasized in those segments dealing

with quantitative analysis. Some of the topics covered include chemical equation writing and predicting products, mole conversions, and stoichiometry. A scientific calculator is required. *Prerequisite: Algebra I.*

### **SC50A Concepts in Physics: Mechanics**

**[Session I]** This workshop focuses on increasing student comfort level in this often challenging discipline. The course focuses on several introductory topics including kinetics and Newton's Laws of Motion in order to help students transition into their prospective high school courses. Hands-on experimentation provides students practical examples of the phenomena they study in a traditional physics curriculum. In addition, students are exposed to problem-solving techniques that support much of the quantitative analysis that they are likely to see. A scientific calculator is required. *Prerequisite: Algebra I.*

### **SC50B Concepts in Physics: Waves and Light**

**[Session II]** This workshop focuses on several introductory topics included in a study of sound and light waves such as interference, refraction, diffraction, and dispersion in order to help students transition into their prospective courses. Hands-on experimentation provides students practical examples of the phenomena they study in a traditional physics curriculum. In addition, students are exposed to problem-solving techniques that support much of the quantitative analysis that they are likely to see. A scientific calculator is required. *Prerequisite: Algebra I [Concepts in Physics - Mechanics is preferred, but not required.]*

### **SERVICE AND SOCIETY**

Service and Society gives students two weeks of unforgettable experience doing, creating, and reflecting in an array of settings close to the Choate campus. Multiple hands-on opportunities in the local area equip students with the knowledge to become change-agents in their home communities. Recognizing the importance of service in the lives of youth, the program offers an academically reflective service-learning experience. Through daily excursions to nearby organizations, students learn about topics relating to socioeconomic inequities and the subsequent impact on communities and individuals, the experiences of refugees and displaced peoples, the importance of environmentalism, the importance of understanding and combating food insecurity, and ways to provide for special needs populations including eldercare. Three evenings a week, students view documentary films and hear personal stories from those affected by the topics addressed at the program's service sites. Social issue documentaries and group discussions provide students with an expanded view of some of the persistent forces resulting in societal issues. Working together as an internationally diverse group of students and sharing reflections on the volunteer experience gives program participants the opportunity to learn about similarities and differences between the challenges faced in Connecticut and those faced in other parts of the world. Students leave with the tools and inspiration to contribute to positive change in their home environment. *[Note: Matriculating and current*

*Choate students who wish to earn Choate community service credit while participating in Service and Society must first obtain permission from the Community Service Director as part of the application process for Summer Programs, and must then comply with all attendance and course expectations. The Community Service Director will determine final eligibility for service hour credit upon the student's successful completion of the program.]*

### **WRITING WORKSHOPS**

The focus of this two-week intensive curriculum is to develop student mastery in writing. Students practice both creative and analytical writing and are challenged to incorporate higher-order thinking and skills into their writing.

#### **Writing Workshop Level 2**

**[For students who will have completed the U.S. equivalent of grades 8 or 9 by the start of Summer Programs.]**

This two-week course explores various forms of writing with a focus on drafting and revising. Within this curriculum, students both read and try their hand at a variety of forms, with an emphasis on fictional narrative, poetry, and personal essays. Participants work closely with classmates as pieces are carried through the writing process, learning the value in having immediate, thoughtful feedback as they each prepare a formal portfolio by the end of the session.

#### **Writing Workshop Level 3, Visual Storytelling**

**[Session I - For students who will have completed the U.S. equivalent of grades 10 or 11 by the start**

of Summer Programs.) For decades, directors have created film adaptations of beloved novels, and today, illustrators are increasingly creating graphic novel adaptations of bestsellers. In our visual storytelling course, students learn how directors and illustrators use visual mediums to give new energy to classic works. Over the course of the two-week session, students examine the art of storytelling and transform written stories into graphic novels and video vignettes all while enhancing their writing and visual literacy skills.

### Writing Workshop Level 3, Writing Truth and Crime

**(Session II - For students who will have completed the U.S. equivalent of grades 10 or 11 by the start of Summer Programs.)** *The Adventures of Sherlock Holmes*, *Serial Podcast*, and *Letter from Birmingham Jail* are three texts that reflect how the pursuit of justice shapes literature and society. In *Writing Truth and Crime*, students explore the tropes that make detective fiction so popular and also consider how writing about injustice is a powerful tool that spurs social change. This is the ideal course for aspiring lawyers, future fiction writers, and budding community leaders. Students in this two-week workshop analyze common figures in crime fiction, such as the troubled detective and the curious butler, and they write their own spin on these classic characters. Students also review real-life accounts of legal debates and civil disobedience and analyze how the written word aids the quest for justice and truth.

## ONLINE PROGRAM

Learning online is an accessible and practical educational option. No matter where a student is in the world, a computer and a reliable Internet connection are all that are needed to participate in one of our online courses using Canvas, Choate's online learning platform. Canvas is an intuitive, self-contained environment that requires no additional software and is easily accessible via our homepage.

### INTRODUCTION TO ARABIC, ONLINE

This learner-centered online course provides students with a comprehensive experience that integrates synchronous (two hours per week) and asynchronous web tools in teaching and learning. Students work with a variety of online media to master the Arabic alphabet and sounds, build vocabulary, develop speaking and listening skills, and acquire grammar concepts at the basic level. Focusing on the three modes of communications (interpretive, interpersonal, and presentational), students learn how to speak about themselves, their families and their environment, to initiate and sustain conversations, and to compose paragraphs related to their daily routine. This course focuses on Modern Standard Arabic with an exposure to Levantine colloquial through music, songs, and short videos. By the end of this course, students will have both a solid command of linguistic structures and skills in Modern Standard Arabic at the basic level, in addition to a deeper understanding and appreciation

of Arab culture and art. Students' progress is assessed through performance on weekly assignments and projects. **Students must have a computer with Internet access running Windows 10 or Mac OS X High Sierra or higher.**

## COLLEGE BOUND

The following test prep courses are open to students who will have completed the U.S. equivalent of grades 8, 9, 10, or 11. Test prep group courses meet twice a week in the early evening and have an additional fee. Test prep individual instruction courses meet twice a week during the class day or early evening and have an additional fee.

### SAT Preparation Course

Pillars of Learning's SAT class is eight sessions long. The first four sessions introduce the critical problem-solving methodologies and education about processing that students need to improve their scores. The last four sessions focus on tailored instruction with individualized worksheets that help students recognize patterns of errors, understand how to approach troublesome problems, and apply what they've learned in both difficult and complex contexts. Using proprietary metrics, the course collects data on what specific stimuli and problem types cause issues with the students' cognitive processes, then disseminates that information to the students quickly via email. All test results and tailored recommendations are emailed to both parent and student so that future practice can be guided from the insights gained through the course. The course includes 8 hours of lectures and two full-length proctored practice tests. Class size is limited to 14 per section; students receive all requisite test materials including practice tests, prep book, and customized worksheets. Average score improvement last year was 200 pts composite between practice tests.

### SAT Individual Instruction

Individual SAT Instruction provides students with specialized tutoring in test preparation. Students enjoy the same material and methods utilized by the SAT Preparation Course, but in a one-on-one dynamic with an expert tutor. The first two sessions focus on methodologies and problem solving in general and the remaining six sessions are tailored and customized based on patterns of errors in the student's tests and practice materials. Individual sessions move at a faster pace and offer greater flexibility in adapting the curriculum to the specific needs of the students. Average score improvement was approximately 240 pts composite between practice tests.

### ACT Preparation Course

While similar in length and format to the SAT course, the ACT course offered by Pillars of Learning is built around the essential problem-solving methodologies and education about processing for success on the English, Math, Reading, and Science sections of the ACT. While the first four sessions build those skills, the last four sessions focus on tailored and individualized worksheets and group work sessions. Through that variety of practice, students recognize their patterns of errors, understand how to approach troublesome problem types, and apply what they've learned in the most challenging of contexts so that the test itself feels familiar if not predictable when students take the actual ACT. Using proprietary metrics, the course collects data on what specific stimuli and problem types cause issues with the students' cognitive process, then disseminates that information to the students quickly via email. All test results and tailored recommendations are emailed to both parent and student so that future practice can be guided from the insights gained through the course. The course runs 8 hours of lectures and two full length proctored practice tests. Class size is limited to 14 per section; students receive all requisite test materials including practice tests, prep book, and customized worksheets.

### ACT Individual Instruction

Individual ACT Instruction provides students with specialized tutoring in test preparation. Students enjoy the same material and methods utilized by the ACT Preparation Course, but in a one-on-one dynamic with an expert tutor. The first two sessions are focused on methodologies and problem-solving in general and the remaining six sessions are tailored and customized based on patterns of errors in the student's tests and practice material. Individual sessions move at a faster pace and offer greater flexibility in adapting the curriculum to the specific needs of the students.

**middle  
school  
offerings:**



# ACADEMIC ENRICHMENT

*Boarding students take two major courses and one minor course. Day students may take less than a full course load*

## FIVE-WEEK COURSES

### ARTS (Double-Period Minor Courses)

#### msa010 Ceramics

This hands-on course develops basic fundamentals in clay construction, wheel work, glazing, underglazing, and a variety of other finishes. Strong emphasis is placed on freedom of expression using hand-building and wheel-throwing skills.

#### msa020 Digital Photography and Imaging

The goal for this course is to teach young photographers how to tell an engaging story with their pictures. Emphasis is placed on the principles of good composition and how to find the most effective ways for framing a shot. The subjects for projects range from the “selfie,” the portrait, to more abstract concepts such as light and patterns. While a dedicated digital camera may be preferred and can provide more options for control over the pictures, a camera phone is an acceptable tool for this class. Post-production editing is explored using Adobe’s Photoshop on the art studio’s computers. A portfolio of student images are printed at the end of the session and included in our art exhibition during the final week of the session.

#### msa030 Drawing

Students expand their visual literacy through the drawing process. Using a variety of media, students sharpen

their skills through projects created from observation and the imagination. Such fundamental elements as line, form, value, and composition are explored. Emphasis is placed on individual growth and development.

### ENGLISH (Major Courses)

#### MSE1 The Language of Literature: Critical Reading and Critical Writing

The twin tasks of reading literature and writing critically about it are expectations of all students in their educational careers. Students in this course read, consider, discuss, and write about important works of literature. The course aims to impart tried and true methods for critical reading and successful techniques for effective critical essay writing.

#### MSE3 Gods and Goddesses

Mythology serves as a reference point for countless works of art and literature and is a keystone of Western culture. In this course, students read and discuss major mythological cycles, explore the shared themes in world mythology, and begin to recognize mythological characters and their significance in contemporary culture.

#### MSE5 Inquiry-Based Writing

Throughout the summer, students use 21<sup>st</sup> century skills to research a topic and share their ideas with others. Students use a variety of print and digital sources to dig deeper than their prior understanding of the topic. With

their new knowledge, students are able to share their findings with others.

### ENGLISH (Minor Courses)

#### mse012 Public Speaking and Debate

Oral presentation is an essential component of effective communication. Learning to organize one’s thoughts and to present them effectively are critical life skills. In this course, students learn to express themselves with greater confidence in small and large groups, and practice prepared and extemporaneous speeches in both informal and formal settings.

#### mse013 Reading and Study Skills

In this course, students will learn how to identify their learning styles and how best to apply that to work completion and studying. In addition, students will learn skills such as time management, task analysis, and how to use a planner. Using research-based strategies, students will be introduced to study skills that they can carry over to other academic courses.

### HISTORY AND SOCIAL SCIENCES (Major Courses)

#### MSH1 From Athens to Washington, DC The Evolution of Democracy

First imagined in ancient Greek city-states, democracy has evolved over the centuries into one of the most important and polarizing political ideals in the history of civilization. This course explores the earliest

seeds of democracy, as well as its modern iterations. Students examine what democracy is and what democracy is not, and ultimately are better equipped to understand our own nation's government.

### **MSH3 Everyday Economics**

Why do fruits and vegetables cost more in the winter? What market forces determine the price of gas at the pump? Economics is vital for educating students to live in our global economy. In this course, students explore fundamental concepts of supply and demand, opportunity costs, and trade through real-world examples and hands-on demonstrations.

## **HISTORY AND SOCIAL SCIENCES** (Minor Courses)

### **msh011 How Government Works in the United States**

As citizens, we have a responsibility to understand the workings of our governments. In the U.S., we are bombarded daily with news that originates with the Executive, the Legislative, and the Judicial branches. What are these institutions? How do they work both independently and in concert with each other? This course looks at several examples of public initiatives, the process by which a bill becomes law, and how the Court applies issues of constitutionality to challenge a law.

## **LANGUAGES** (Major Courses)

### **MSL1 Introduction to Latin**

Latin is the fundamental root of all Romance languages and for centuries served as the language of choice for Europe's greatest scholars, writers,

and philosophers. In this course, students explore the structure of language through a mastery of Latin parts of speech, syntax, and vocabulary. Coursework also includes daily readings of short stories and quotes, as well as lessons in etymology.

### **MSL2 Introduction to Spanish**

The study of Spanish opens doors to a language spoken by nearly 400 million people worldwide. This course introduces students to the rules of grammar, vocabulary, and pronunciation crucial to conversational Spanish, and is designed for those with little or no background in Spanish. This course helps prepare students for further language study.

### **MSL3 Introduction to Chinese**

This course aims to introduce students to the basic skills of Mandarin Chinese. Coursework focuses on Mandarin tones, sounds, and numbers, as well as writing characters in standard simplified form using the proper stroke order. Lessons also include fundamental grammar patterns, reading and speaking dialogues, and exposure to the traditions, culture, and current affairs of China. This course helps prepare students for further language study.

### **MSL4 Introduction to French**

Spoken as a native language in countries on five continents, French has contributed enormously to language and culture worldwide. This course, which is aimed at students with little or no background in the language, introduces students to rules of grammar, vocabulary, and conversation central to mastering French. Furthermore, students explore French

culture as it exists from the serpentine streets of the Latin Quarter to the Congo. This course helps to prepare students for further study in French.

### **MSL5 Arabic for Beginners**

This introductory Arabic course is designed to introduce middle school students who have no previous knowledge of Arabic to the Arabic language and culture. By the end of this five-week course students learn to read and write in Arabic, to understand and initiate basic conversations about daily life topics, and to explore some aspects of the Arabic culture through music, poetry, and culinary art. It is a student-centered class where different media are used to make the students' learning experience fun and effective. This course helps prepare students for further language study.

## **MATHEMATICS, COMPUTER SCIENCE, AND ROBOTICS** (Major Courses)

### **MSM1 Pre-Algebra**

This course is designed for students who have not yet studied any algebra and would like to gain some experience with algebraic concepts prior to enrolling in an Algebra I course. Beginning with a brief review of arithmetic skills, students are introduced to the early Algebra I topics, including signed numbers and variables and their use in problem solving. Students also learn basic equation-solving techniques, as well as additional algebra concepts as time permits.

### **MSM2 Introduction to Algebra I**

This course is intended for students who are comfortable with pre-algebra

topics, but would like some additional preparation before enrolling in Algebra I in the fall. Students are expected to have a basic understanding of signed numbers as well as the concept of a variable. Students review basic equation-solving techniques and explore additional topics, including systems of linear equations and inequalities, rates of change, and the graphing of linear equations. Additional topics may be included as time permits. This course is not intended to replace a full year of study of Algebra 1.

### **MSM3A Special Topics in Algebra I**

This course is for students who already have extensive experience with Algebra I concepts. Beginning with a brief review of rates of change, linear equations, inequalities, and graphing, students will explore additional topics, including absolute value, factoring, rational expressions, and quadratic relationships. As much as possible, students will consider real world applications and gain problem-solving experience. Strong arithmetic skills are essential. A diagnostic test on the first day of class is given to confirm placement.

### **MSM3 Concepts in Geometry**

Students explore topics such as the Pythagorean Theorem, angle relationships, properties of parallel lines, polygon angles, and tessellations. The students may use GeoGebra, a free dynamic software package, to enhance understanding of course concepts and to develop the idea of proof.

### **MSM4 Introduction to Computer Programming**

This course introduces students to programming concepts such as variables, loops, events, logic, arrays, program design and control, and basic object-oriented programming. Students begin their exploration of code in Scratch, and then move on to program in Processing, a Java-based programming language created to teach computer programming fundamentals within a visual context. This course assumes no background in formal computer programming, but the expectation is that students have had some prior computer experience. *Note: A laptop computer is required.*

### **MSM5 Introduction to Robotics**

This course introduces students to the fundamentals of robotics using the VEX platform. Students learn to design and build robots, to program autonomous behaviors, and to use sensors to improve a robot's ability to interact with its environment. Robots compete in challenges, including racing and navigating over and around a variety of obstacles. This course also serves as an introduction to some aspects of computer programming, including program design and control, looping, and Boolean logic. Prior programming experience is not necessary. *(Note: Prospective Choate students who complete this course may utilize the experience as a supplementary prerequisite in applying to Choate's Advanced Robotics Signature Program. Applying to the program does not guarantee admission.)*

## **MATHEMATICS (Minor Courses)**

### **msm011 Puzzles and Logic**

Learning how to solve puzzles and win strategy games is not only fun, but it also strengthens critical thinking and reasoning skills. By exploring some of the classic riddles, problems, and strategy games of mathematics history, students develop oral and written communication skills as they are asked to defend their thinking and explain their solution strategies. Students also explore multiple ways to approach logic problems, with an emphasis on clear organization of work and given information.

### **msm012 Dynamite Data**

What is data? How can data help us learn something about the world? Gathering, organizing, summarizing, displaying, analyzing, and interpreting data are essential 21<sup>st</sup> century skills. In this course, students explore randomness and calculate basic probabilities in order to begin learning how to unravel the story that data is trying to tell.

## **MATHEMATICS (Double-Period Minor Course)**

### **msm013 Games and Strategy: An Introduction to Game Theory**

Through playing and discussing a variety of games, students explore the foundations of game theory, the mathematical study of competition and cooperation. Students play traditional games such as checkers, chess, ConnectFour, Stratego, Risk, Settlers of Catan, and Magic while seeking to answer questions about how these games work. Are there strategies

that make winning more likely? Why do those strategies work? Are there strategies that make it impossible for either player to win? This course also introduces some of the fundamentals of game theory including equilibrium, payoffs, and zero-sum games.

### **SCIENCE** (Major Courses)

#### **MSS1 Marine Biology**

With marine life as a focus, students explore biological principles in order to understand better our world's oceans. This course draws on local resources such as a boat trip on Long Island Sound.

#### **MSS2 Environmental Science**

Through an interdisciplinary scientific look at the Earth's systems, students explore the delicate interconnectedness of their environment. This hands-on course introduces key elements from the physical, chemical, and biological sciences.

#### **MSS3 Phenomenal Physics**

What makes a baseball curve? How do eyeglasses help you see? This hands-on course explores various properties of physics, such as force, motion, and energy, and applies them to hands-on laboratory experiences.

#### **MSS5 Science of Alternative Energy**

In this course students explore the science behind sustainable, alternative energy technologies and green building design. Classes take place in Choate's USGBC LEED-Platinum certified and net-zero energy Kohler Environmental Center so that the specific energy systems

and design elements of the building can be examined. These include photovoltaic arrays, solar thermal systems, insulation, geothermal heat pumps, biodiesel fuel, and passive solar design. Through projects and labs, students are introduced to basic physics and chemistry principles underlying the green technology movement.

### **SCIENCE**

(Double-Period Minor Course)

#### **mss010 Mad Scientist**

This course helps students better understand the scientific method and basic lab practices. Fun-filled labs familiarize students with lab apparatus, writing lab reports, data presentation, and interpretation for scientific inquiry—skills necessary for future, more advanced science coursework.

## **MIDDLE SCHOOL SIGNATURE PROGRAMS**

In addition to Academic Enrichment courses, we offer unique and distinctive Signature Programs that allow Middle School students the opportunity to advance in a particular area of study. Signature Programs courses may not be combined with Academic Enrichment courses. However, students may combine 2, two-week Signature Programs to create an individualized four-week program.

### **FIVE-WEEK PROGRAM**

#### **ENGLISH LANGUAGE INSTITUTE (ELI)**

The English Language Institute (ELI) attracts talented students from around the world who have studied English for at least two years and who seek to enhance their English language skills in a supportive and rigorous five-week program. Through the use of a wide variety of language learning strategies, ELI courses in reading and writing drive substantive changes in each student's ability to read, write, speak, and understand spoken English. Course placement is determined by a diagnostic test administered on the first day of classes. Several trips and activities within New England are included in the program and enable students both to practice their language skills and to experience American culture in a variety of settings.

(Major Courses)

#### **MSEL70 Expository And Creative Writing**

Students improve their skills in writing English by completing forms of expository writing such as a description, a personal narrative, and a compare-and-contrast essay; then, for creative writing, they write pieces such as a poem and a short story. For each writing assignment, students pursue the process of planning, writing a first draft, revising, completing the second draft, and sharing their work. They also write regularly in a dialogue journal and engage in class discussions to increase their fluency in the language. In addition, students have opportunities to review and

improve their work through writing conferences with the teacher.

### **MSEL80 Reading Non-Fiction And Fiction**

Students improve their skill in reading English. First, students read a variety of non-fiction works such as autobiography, biography, newspaper and magazine articles, as well as works on the Internet. Next, students read a variety of fiction genres such as poetry, short story, and excerpts from novels. Students are expected to volunteer in class discussions, read aloud, participate in small group activities, and write short critical and creative responses to the reading. They also practice a variety of organizational techniques using various graphic organizers and notetaking skills.

#### **{Minor Courses}**

### **mse1011 Research Skills**

Utilizing topics in American culture, this course introduces students to a variety of research techniques that support their academic work. As part of the research process, students learn how to identify key words, choose credible sources, and create proper citations. Students develop their English language skills, both spoken and written, and deepen their understanding of American culture and current events while working on their research projects.

### **mse1012 Public Speaking and Performance**

In this course, students develop their speaking skills by studying and presenting a variety of speeches including informational, persuasive, and debate. They learn how to create

and implement effective visual-aids and presentations that fit their audience and adjust to listener feedback. Through performance and observation, students become more fluent, confident, and active English speakers.

### **FOUR-WEEK PROGRAM**

#### **THEATER ARTS INSTITUTE**

The Theater Arts Institute offers students a total theater immersion experience. Students learn the process of theater through daily classes in acting, singing, dance, set and costume design, and playwriting. In addition, students attend nightly laboratory sessions to work together on performance and design projects and attend master classes in movement, voice and diction, improvisation, lighting design, children's theater, and stage management. All aspects of the dramatic experience are highlighted, with opportunities for young artists to grow in many areas. Throughout the summer, students complete scene work in classical and modern drama, rehearse and perform numbers from a variety of musicals, and design set and costume pieces for different periods. Weekly field trips to professional theater and artistic performances throughout New York and New England inform our work and inspire our students. This program is designed for young people who are serious about expanding their knowledge and willing to take risks in all areas of theater.

### **TWO-WEEK PROGRAMS**

Combine two-week offerings from Session I and Session II to create an individualized four-week program.

#### **WRITING WORKSHOP**

This two-week curriculum focuses on the development of critical thinking skills and independent analysis. Students learn the importance of including detail and description in their creative writing and evidence and support in their analytical writing.

#### **Writing Workshop Level 1**

**(For students who will have completed the U.S. equivalent of grades 6 and 7 by the start of Summer Programs.)**

This two-week course focuses on the development of personal creativity, critical thinking, and independent analysis through the reading and writing of both fiction and nonfiction. Students gain confidence as they learn techniques for building good writing sentence by sentence and become fully comfortable with writing as a process, all while developing a portfolio of unique pieces.

#### **INVENTION AND DESIGN LAB**

This two-week intensive workshop is a hands-on exploration of topics in designing and making. Students are introduced to design thinking, sketching, modeling, 3D printing, electronics, and basic computer programming with Arduino micro-controllers. Utilizing Choate's state-of-the-art Lin i.d.Lab, students are guided through a series of projects which help them build skills and unlock their creative potential. Part engineering and part art, and always fun, this course helps students turn their ideas into reality through the steps of brainstorming, sketching,

designing, prototyping, and constantly revising. Evening lab hours complement class day sessions and enable students to accomplish even more with their projects.

### **INTRODUCTION TO ROBOTICS**

This robotics workshop is a two-week program that facilitates the development of STEM skills: engineering building and design, C programming, resource management, and electrical and programmable debugging. Students design, assemble, operate, and program a robot to complete complex tasks through both remote control and autonomous systems. The program utilizes VEX hardware and Robot C++ programming language to complete several projects. Each assignment has a unique objective from a robot balloon battle to an autonomous ball collector. Students are put to the test and encouraged to release their creative energy by making their robot dream fantasies into reality. *(Note: Prospective Choate students who complete this course may utilize the experience as a supplementary prerequisite in applying to Choate's Advanced Robotics Signature Program. Applying to the program does not guarantee admission.)*

### **A BIOLOGIST'S WORLD**

This two-week program provides middle school students with a hands-on laboratory and field-based approach to the fundamental topics of biology, ranging from a study of cells and the molecules that make up cells to the study of organisms, populations, and ecosystems. An understanding is developed by exploring how energy flows through ecosystems and how populations change over time due to evolution, reproduction, and genetics. Students will set up and conduct experiments in the classroom and will also explore aquatic and terrestrial ecosystems on campus and on field

trips. Choate's USGBC LEED-Platinum certified and net-zero energy Kohler Environmental Center will be utilized for a portion of the course, allowing students to conduct experiments and explore that area of campus. The program is designed to provide a solid background for future life science and environmental studies.

### **DOCUMENTARY FILMMAKING**

This program offers a two-week introduction to documentary filmmaking for middle school students. Week one focuses on identifying the strategies and tools of documentary filmmakers through screenings and discussion of a wide array of documentary content. Week two focuses on a shooting and editing practicum and the production of a documentary short film. This hands-on course offers real-world skills and experience in project planning and development, interviewing subjects, and using film to tell a story. Field trips to local businesses and facilities expand the scope of subject matter available to students, and guest artists visit the classroom to share their professional journeys and offer workshops in their area of expertise. Evening lab hours complement class day sessions and enable students to accomplish even more with their projects.

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### **INTRODUCTION TO ARABIC, ONLINE COURSE**

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## **PREP SCHOOL BOUND**

The following test prep courses are open to students who will have completed the U.S. equivalent of grades 6, 7, or 8. Test prep group courses meet twice a week in the early evening and have an additional fee. Test prep individual instruction courses meet twice a week during the class day or early evening and have an additional fee.

### **SSAT Preparation Course**

The SSAT classes offered by Pillars of Learning are eight sessions long. The first four sessions introduce the critical problem-solving methodologies and education about processing that students need to improve their scores. The last four sessions focus on tailored and individualized worksheets and group work sessions that help students recognize their patterns of errors, understand how to practice efficiently, and complete difficult problems similar to the ones they missed on the tests. Using proprietary metrics, the course collects data on what specific stimuli and problem types cause issues with the students' cognitive process, then disseminates that information to the students quickly via email. All test results and tailored recommendations are emailed to both parent and student so that future practice can be guided from the insights gained through the course. The course runs eight hours of lectures and two full length proctored practice tests. Class size is limited to 14 per section; students receive all requisite test materials including practice tests, prep book, and customized worksheets. Average score improvement was 25 percentile point increase quantitative (roughly from 50<sup>th</sup> percentile to 75<sup>th</sup>) and a 10 percentile point increase in reading (roughly from 50<sup>th</sup> percentile to 60<sup>th</sup>) and a 15 percentile point jump in vocabulary (roughly from 45<sup>th</sup> percentile to 60<sup>th</sup>).

### **SSAT Individual Instruction**

Individual SSAT Instruction provides students with specialized tutoring in test preparation. Students enjoy the same material and methods utilized by the SSAT Preparation Course, but in a one-on-one dynamic with an expert tutor. The first two sessions focus on methodologies and problem-solving in general and the remaining six sessions are tailored and customized sessions based on patterns of errors in the student's tests and practice material. Individual sessions move at a faster pace and offer greater flexibility in adapting the curriculum to the specific needs of the individual student. Average score improvement was 35 percentile point increase quantitative (roughly from 50<sup>th</sup> percentile to 85<sup>th</sup>) and a 15 percentile point increase in verbal and reading (roughly from 50<sup>th</sup> percentile to 65<sup>th</sup>).



## APPLYING TO CHOATE SUMMER PROGRAMS

Applications are accepted on a rolling basis at [www.choate.edu/summer/apply](http://www.choate.edu/summer/apply)

A completed application must include:

- Application (student information and course selections, as applicable)
  - Personal Statement
  - Two teacher recommendations (Study Abroad applicants only need one teacher recommendation)\*
  - School Official Recommendation\*
  - Current school transcript, which includes **current academic year courses and grades**
  - Graded English essay from current year, with teacher comments
  - A \$100 non-refundable application fee
- \* *Recommendation Request Forms are available online (PDFs of the forms are available upon request)*

### DEPOSIT

**For Summer Programs:** Within two weeks of acceptance, students who wish to secure a spot must pay the non-refundable \$1,000 deposit. The final balance due must be paid no later than May 1. Summer Program fees include tuition, books, field trips, recreational activities, meals, and housing (as applicable for boarding students).

Students accepted after May 1 must submit their payment in full including the non-refundable deposit.

**For Summer Study Abroad:** Within two weeks of acceptance, students who wish to secure a spot must pay a non-refundable \$2,000 deposit. The final balance due must be paid no later than April 18.

Students who are accepted after April 10 must submit their payment in full by April 18, including the non-refundable deposit.

### FINANCIAL AID

Choate Rosemary Hall seeks the best qualified students from a variety of backgrounds and offers need-based financial aid to students who could not otherwise attend. Because of limited funds, Financial Aid is primarily available only for on-campus programs and to U.S. residents filing IRS income tax returns. Financial Aid can help cover the on-campus program fee (which includes tuition, books, field trips, recreational activities, meals, and housing for boarding students), but

does not cover travel expenses, health insurance, or test prep courses. Please note that priority in awarding of aid is given to qualified first-time applicants, and that receiving aid for one summer does not guarantee additional funding for subsequent summers. Financial aid applicants should supply all supporting IRS documents including a copy of the 1040 form and any other income tax forms by the deadline indicated on [www.choate.edu/summer](http://www.choate.edu/summer). Materials that arrive after the deadline will be considered on a rolling basis for any remaining funds.

### INTERNATIONAL APPLICANTS

Please note that a TOEFL or TOEFL Junior Test is strongly recommended for the English Language Institute and **required** for all other programs.

### DAY STUDENTS

Summer Programs welcomes day students who live close enough to commute to campus. Day students are required to participate in all aspects of the academic program they enroll in – including evening commitments and field trips – and are encouraged to participate in sports and recreational activities.



CHOATE  
ROSEMARY HALL

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