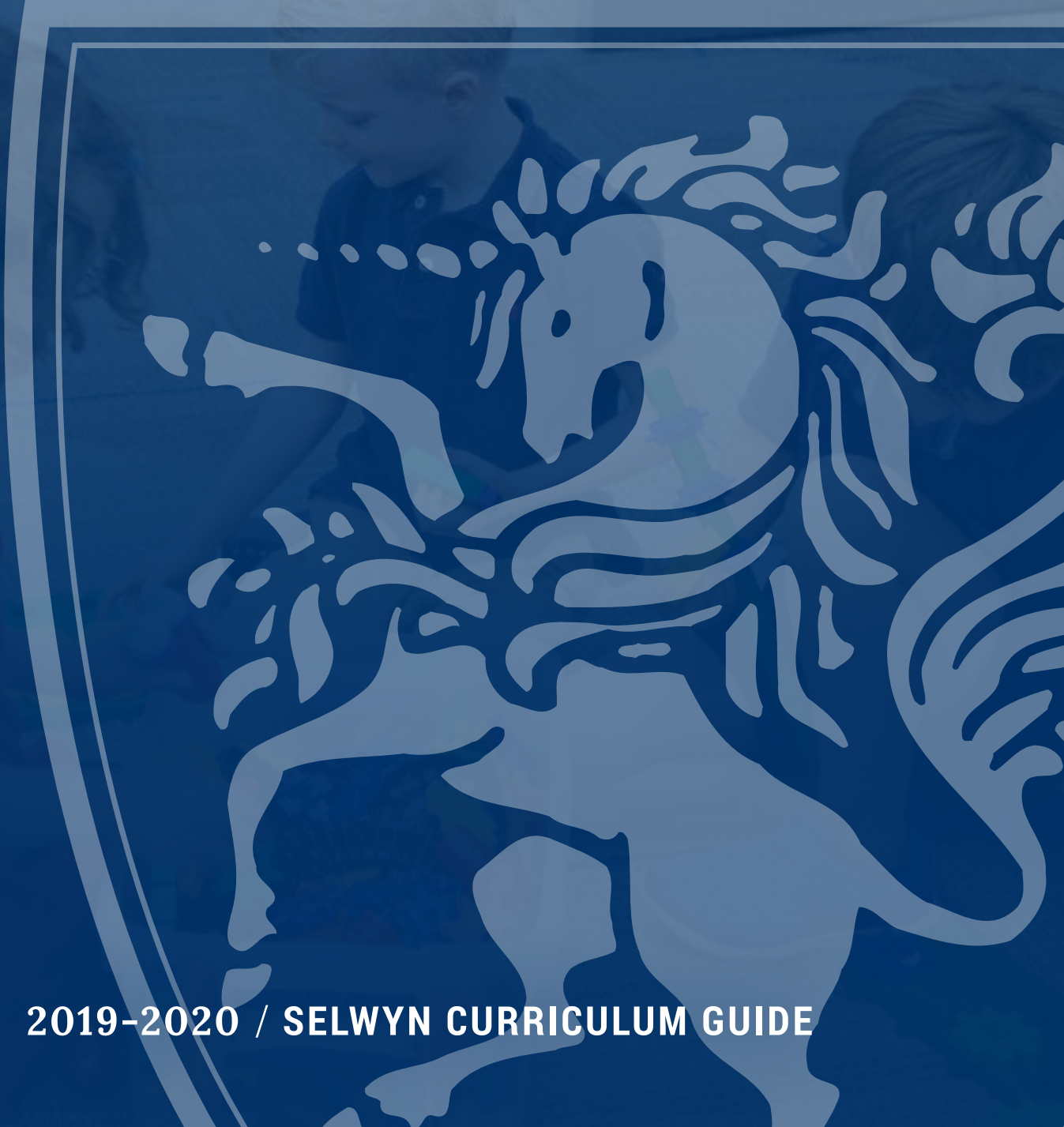




# SELWYN SCHOOL



2019-2020 / SELWYN CURRICULUM GUIDE



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# INTRODUCTION TO THE SELWYN SCHOOL

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## Curriculum Guide

Selwyn is an independent, non-sectarian, college-preparatory day school serving pre-kindergarten through grade 12 students. A member of the National Association of Independent Schools, Selwyn provides the most thoroughly individualized, comprehensive and developmentally appropriate array of student-focused experiences in North Texas. Our students grow into independent thinkers and creative problem solvers who are highly resilient and emotionally intelligent leaders prepared for effective citizenship in a global society.

At Selwyn School, our mission is to educate students to embrace complex challenges with empathic and innovative thinking, such that they are prepared to embrace their future as global citizens.

## Selwyn Is About Inclusion

Selwyn School is an inclusive environment, and admits students of any race, color, national or ethnic origin to all the rights, privileges, programs and activities generally accorded or made available to students at the school. It does not discriminate on the basis of race, color, national or ethnic origin in administration of its educational policies, admissions policies, scholarship and loan programs, athletic or other school-administered programs.

# SELWYN SIGNATURE PROGRAMS

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## Pre-K Program

Our Pre-K Program is inspired by the Reggio Emilia educational philosophy, a belief that children learn best from three different educators: their parents, their school teachers, and their environment. Parents, the “first teacher” in Reggio Emilia, are an active partner and guide in their child’s education. They are invited to contribute to the process of discovery and share ideas, materials or skills that help deepen learning for the children. The “second teacher,” our teachers, act as a “co-researcher” alongside our children. They create environments that encourage them to explore deeper and make the students’ voices visible through listening, questioning and documentation. The environment, their “third teacher,” is designed to nurture the children’s learning and encourage discoveries. As the children’s interests change, or their inquiries evolve, so does the environment.

This is why we’ve worked so hard to create a learning space that will immerse our young students in a highly stimulating environment that embraces their love of learning from all three types of instructors. In our program, each child will receive the individualized attention they need to thrive and grow into first grade and beyond. Children learn best by interacting with their environment, which is why our preschool students enjoy play as one of the essential elements of their educational experience. In addition, our teachers will actively involve you in your child’s education so the learning process can continue at home.

## Middle School Academy

Extensive research indicates that children in the early stages of adolescence have an underlying need to feel a sense of connection, importance, and belonging from their peers, adults, and school. That sense of connection is a key factor in the development of their social identity, and in turn many other measurements of success. Selwyn's Middle School Academy is customized for adolescents in 7th and 8th grade, designed to support their unique needs during some of their most fragile and transformative years.

Through an engaging, interdisciplinary curriculum seamlessly integrated with our outdoor education program, Selwyn students have the tools and guidance to build critical-thinking skills, lifelong values of personal responsibility, mutual respect, and a healthy curiosity to understand and interact with the world around them. Ultimately, middle school students need a safe and nurturing community where they can feel comfortable developing a strong sense of themselves as individuals, which is why we intentionally keep our classrooms small. Our goal is to build genuine connections between both our students and our teachers that cultivate trust and security, allowing our children not just to get through their middle school years, but thrive.

## Middle School Humanities

A key differentiator in our middle school program is our purposeful approach to humanities, the invaluable lens through which humankind interprets our traditions and ourselves. The Selwyn School recognizes the necessity of creating a curriculum aimed at balancing content and skills in order to facilitate the formation of well-rounded persons and lifelong learners. Our deepest desire is for each student to develop an appreciation of the human condition through thoughtful, careful engagement with complex ideas and movements past and present. In line reasoning, The Middle School Humanities Program views the study of humanity's moral, spiritual and intellectual struggles as an indispensable lens by which to interpret our traditions and ourselves.

Our experiential, project-based curriculum affords 7th and 8th grade students an opportunity to evaluate better their assumptions by, as best as possible, inhabiting the minds of others. In order to achieve this lofty goal, we look at lessons, patterns, and major ideas in myriad historical, cultural, religious, social and political contexts. Situating these concepts within larger thematic frameworks, such as the history of science or the nature of cultural rebirths, each school year emphasizes different aspects of greater human experiences. Studying the humanities provides rich opportunities for colloquia, simulation, and projects, and we build classes and assignments that dive deeply into questions and circumstances with no easy moral or social solutions. This structure enables students to think lucidly and disagree civilly in a close-knit academic community—one that resembles a diverse family more than a scattered population.

Selwyn's program integrates the methods of variegated disciplines, from the more traditional fields of history and English language arts to the crucial, but often undervalued arenas of philosophy, anthropology, ethics, economics, music appreciation, and art history. It is our belief that in the fast-paced, rapidly changing landscape of our contemporary world, a foundation in areas of knowledge which consider not merely the how of a question, but also the why, remains more important than ever. Therefore, amid great turmoil, disintegration, and confusion, we hope to educate our students in a manner that provides clarity in both thought and purpose.



## Outdoor Education (K-12)

A prime demonstration of Selwyn's commitment to experiential learning, our Outdoor Education efforts extend a hands-on, collaborative approach to cross-disciplinary topics across grades, K-12.

Outdoor Education creates an experiential learning environment that builds on and strengthens classroom lessons. An outdoor education program builds community and culture, raises expectations and standards, increases connection between students, and develops positive associations around school and the outdoors.

Outdoor education consists of coordination between all teachers, across all grades and subjects, on project-based learning activities. This program complements skills and knowledge taught in the traditional classroom. In this sense, outdoor education should be understood as an extension of the classroom, allowing students to combine multiple skills, technologies, and lessons taught in the regular classroom with project learning activities. Activities are designed so that older students can help lead lessons, allowing for peer teaching and development of leadership and community.

Selwyn's Lower School students participate in an array of Outdoor Education activities and programs that expose students to the natural world, allowing them to apply what they learn in the classroom to the outdoors. They learn the basics of archery and enjoy a variety of hikes and nature walks to several local parks. Students learn their roles as members of a larger community as they take part in yearly activities such as World Water Monitoring Day and Stream Clean. Through a variety of projects, from planting, harvesting, and eating, Lower School students are introduced to gardening by working in Selwyn's garden. Through Selwyn's Outdoor Education, Lower School students build their observational skills, confidence, teamwork, and sense of place.

As a crucial part of Selwyn's Middle School Academy, the project-based curriculum comes alive as students work on activities designed to complement and reinforce the content and skills taught in the classroom. Students work on their archery skills, learn to fish, go on hikes and explorations, and take part in the 8th Grade Leadership camping trip. Academy students take on leadership responsibilities, leading activities for both their peers and for younger students. To taking an active role in caring for Selwyn's garden, learning to cook, working with solar ovens, and heading up campus-wide sustainability initiatives, Selwyn's Outdoor Education program works to instill leadership, teamwork, and confidence in Academy students.

In the Upper School, Selwyn's Outdoor Education works to instill a sense of confidence, place, and excitement in students. Students learn how to kayak and stand-up paddle board, take part in hikes and outdoor lessons, and further develop their archery skills. Upper School students take on an active role in running Selwyn's garden by planning what to grow, caring for the plants, and managing the budget. Students lead school-wide activities such as World Water Monitoring Day and the Great American Cleanup, and work with a variety of Citizen Science programs, helping to identify and map the plant and animal species in our region.

## Upper School Research Program (9-12)

Given the competitive nature of higher education and the academic rigors of collegiate life, Selwyn recognizes the need for robust scholarly challenges in preparing its upper school students for what lies ahead. To meet this need effectively, beginning in grade 9, faculty guide students through a yearly project designed to provide an understanding of university-level research expectations. Research projects are assigned in a new academic field each school year, exposing our students to a variety of disciplinary styles and intellectual pursuits.

Since different areas of expertise have different standards, students will gain an appreciation for how research in one discipline, such as chemistry, is distinct from that of another, like English. Through this process, students demonstrate proficient or above grade-level writing, analytical skills, and verbal abilities by composing a final paper and delivering a formal presentation based on their work.

The current course plan for Selwyn's research program is as follows: 9th grade—Human Geography, 10th grade—chemistry, 11th grade—U.S. History, and 12th grade—English or, for advanced students, an independent study.

## Non-Traditional Students

Selwyn recognizes that student lives can be far more complex than in years past. At Selwyn School, we can customize schedules and programs for many non-traditional students in 7th to 12th grade, including:

- Upper school students also enrolled in college programs
- Home school students who want to attend one or more campus-based classes
- Accelerated students
- Working students whose schedule takes them off campus for extended periods of professional, athletic or personal development

Our admissions office will work with families to determine the best way to accommodate the needs of such non-traditional students.

## Perspectives Travel

Each year and at each grade level, Selwyn hosts annual student trips through our Perspectives Travel Program, an integral part of our curriculum from Lower School to graduation. This is a cherished tradition at our school, dating nearly all of our 60-plus year history. It provides students with unique, hands-on experiences designed to help them develop a sense of personal responsibility and self-reliance. Interpersonal relationships between the students are enhanced as they learn how to problem solve and work together while braving new adventures outside of their usual comfort zones. Every successive year the length of the Selwyn travel program trips increase, as do the students' responsibilities for planning and implementing their travels.

In Lower School, first and second grades go on a day trip within the Dallas/Fort Worth metroplex. Second graders also have an overnight camping trip on or near the school's grounds. In third and fourth grades, students travel several days together, usually to an overnight recreational camp where they explore nature, history and science in a fun, engaging setting. Venues usually change for grades five and six, with a slightly longer trip and age-appropriate adventures and challenges.

Middle School students often travel out of state. Experiences change each year, with visits to an ocean, the mountains, or the desert. Before each trip, students learn about the history and climate of the region. At this stage of their education, middle schoolers get to practice many important skills as they plan, adventure, and learn about the world around them.

Upper School students have a more extensive, slightly longer adventure, generally in the spring. Perspectives opens further these older students' minds to new horizons, and they learn to appreciate other cultures and communities by venturing out of the classroom to experience other parts of the world. Upper School students have traveled the country, with destinations such as New Mexico, California, Colorado and Washington.

# DIVISIONS

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## Pre-K

Inspired by the Reggio Emilia educational philosophy, Selwyn's pre-school program immerses our youngest students in a highly stimulating environment that embraces their love of learning. Pre-school students learn from three educators: their parents, their school teachers, and their environment. In our program, each child will receive the individualized attention they need to thrive and grow into higher grades. Children learn best by interacting with their environment, which is why our preschool students enjoy play as one of the essential elements of their educational experience. In addition, our teachers will actively involve you in your child's education so the learning process can continue at home.

## Lower and Upper Elementary Education: The Elementary Division (K-6)

Our kindergarten and elementary education is designed to cultivate emotional intelligence, so students can develop the personal and social competency necessary to face successes, challenges and disappointments with courage and resiliency. Developing a respectful and responsible character is a skill every child needs in order to thrive, find fulfillment, and be an influence for good in our society. Our program works on developing six pillars of character development: trustworthiness, respect, fairness, caring, responsibility, and citizenship.

## Kindergarten

Kindergarten is a stand-alone classroom focusing on exploration and discovery, and is designed to facilitate a smooth transition from the Reggio Emilia preschool to a traditional classroom setting. Play and the natural environment form the foundations of learning and social awareness, along with developmentally appropriate literacy and mathematical instruction.

## Grades 1 and 2

First and second grade students learn in a multi-age environment in which the students are grouped into "learning pods." This approach provides children with the opportunity to lead as well as follow. The learning pod approach allows for cognitive, social, and emotional learning. The student's natural curiosity is nurtured and their passion to know "why" encouraged. Students learn through individualized work activities designed to address a specific skill, topic, or theme. Literacy instruction incorporates guided reading, vocabulary, spelling, sequencing, grammar, listening, reading strategies, technology, etc. Students participate in writing workshops including handwriting, journal writing, research, story writing, narrative, and non-fiction. Our math program combines hands-on learning stations and technology and a learning lab where students can work with blocks, puzzles, building, and games. Science and social studies are thematic and have a cross-curricular approach comprised of reading, math, and writing.

## Grade 3

Students in the third grade are given the opportunity to assume more individual responsibility for their learning while remaining in a self-contained classroom. Third grade serves as the bridge to the departmentalized upper elementary.

## Grades 4-6

Upper elementary provides opportunities for students to practice the skills of self-reliance and independence in a nurturing elementary environment. The course work is divided among three core instructors teaching ELA, math, science and social studies. Students in grade six have the opportunity to join middle school for electives and extracurricular programs in order to prepare them for middle school. All elementary students participate in drama, music, art, physical education, Spanish, and library time.

## Middle School Education: The Academy (7-8)

Our middle school education is designed to empower students to construct their own understanding and knowledge of the world through individualized learning experiences. Students are encouraged to reflect on those experiences in a deeply caring environment where they are challenged, supported, and held accountable.

During these two years, students experience an interdisciplinary, project-based learning environment. Because middle school is a time of tremendous change physically, emotionally, and academically, we focus on the process of learning as much as the content that is learned.

### Middle school students experience the following:

- Outdoor education
- Environmental science
- Humanities classes that integrate history and literature
- Creative writing and publishing
- Integrated math and science courses
- Technology as a tool and to enhance the learning experience
- Spanish language and culture
- Art, drama, and music

### Middle School students are:

- Active participants in their own learning
- Critical and innovative thinkers
- Capable and motivated decision-makers
- Responsible leaders and mentors
- Compassionate and respectful members of the Selwyn community

## Humanities At Selwyn

Selwyn School takes a purposeful approach to humanities. Rather than relying on more rigid, siloed course offerings (English, Art, History, Music, Philosophy and others.), our teachers work together to integrate their lesson plans throughout the evolution of humanities. For example, the study of the Medieval Renaissance brings together relevant history, art lessons on shields and crests and the foundations of algebra, science and technology prevalent in that era. With this approach, our students are able to dive more deeply into the perspectives and questions that have challenged people for centuries, making Selwyn students better prepared to transcend basic knowledge and tackle the “why” of their world.

## High School Education (9-12)

Our high school education is academically challenging and student-driven so that the unique talents and interests of the students can emerge and a path toward realizing their potential is illuminated. In these four years, students have the opportunity to expand their passions and deepen their knowledge of the subjects they have been introduced to in the earlier years. In addition to the core high school curriculum, high school students also have the opportunity to take highly challenging classes such as “The Science of Vector Born Diseases.”

### A Selwyn graduate is proficient in the following skills critical to being a successful contributor in the 21st century:

- Collaboration
- Communication across disciplines and cultures
- Critical and innovative thinking
- Global citizenship
- Technological literacy
- Public speaking
- Initiative with empathy and curiosity
- Resilient and emotionally intelligent leadership



## College Admissions Requirements

Selwyn ensures that our graduation requirements satisfy the requirements of the breadth of local and national colleges and universities. Faculty advisors guide the students through the college admissions process and ensure that all requirements are met and that students are able to apply to their institution of choice.

## Selwyn Graduation Requirements

Students must complete a minimum of 26 credits during grades 9-12 in order to meet the graduation requirements. A course taken for one semester is 0.5 credit. A course taken for one year is 1.0 credit. All students must enroll in a minimum of five courses each semester; however, most students take seven courses per semester. All students are encouraged to participate in clubs and other extracurricular activities to develop as well-rounded individuals and to strengthen college applications.

Below is a description of the credits required in each discipline, including the core courses required for college admissions and detailed course descriptions.

<b>Social Studies</b>	4 credits
<b>Science</b>	4 credits
<b>Mathematics</b>	4 credits
<b>World Language</b>	3 credits
<b>English</b>	4 credits
<b>Fine Arts</b>	2 credits
<b>Technology</b>	0.5 credit
<b>Physical Education</b>	2 credits
<b>Electives</b>	2 credits

### Typical Freshman Year

Human Geography  
 Biology  
 Health (Semester)/Technology (Semester)  
 Geometry  
 Spanish 1  
 English 1  
 PE or Fine Arts

### Typical Junior Year

US History  
 Physics  
 Mathematics Elective  
 Spanish III  
 English III  
 Electives 2-4 (Dependent on whether the elective is a 0.5 or 1 credit class)

### Typical Sophomore Year

World History  
 Chemistry  
 Algebra II  
 Spanish II  
 English II  
 PE  
 Fine Arts

### Typical Senior Year

Government (Semester)/Economics (Semester)  
 Science Elective  
 Mathematics Elective  
 English IV  
 Electives 3-6 (Dependent on whether the elective is a 0.5 or 1 credit class)

# COURSE CATALOG

## Social Studies

At the Upper School level, Selwyn's Social Studies courses prepare students to become active citizens of their community by equipping them with the skills and tools necessary to understand the world in which they live. With special focus placed on the development of empathic thinking through engagement with other cultures, critical study provides the students with historical and geographical context to current issues. Students master expressing their thoughts through writing and public speaking, and learn how to conduct effective, independent research necessary at the college level.

### Social Studies Graduation Requirements: 4 credits

Required Classes: Geography (9th), World History (10th), US History (11th), Government (12th), and Economics (12th)

### Human Geography (1 credit)

This course introduces students to the systematic study of patterns and processes that have shaped human understanding, use, and alteration of Earth's surface. Students employ spatial concepts and landscape analysis to examine human social organization and its environmental consequences. They also learn about the methods and tools geographers use in their science and practice.

### World History (1 credit)

This course highlights the changes (causes and consequences) in global frameworks through comparisons among major societies. It focuses on the understanding of world history from approximately 8000 BCE to the present. It emphasizes relevant factual knowledge and skills in analyzing types of historical evidence. Students are taught historical thinking skills such as contextualization, synthesis, and analysis. Students make connections among historical developments in different times and places encompassing the five major geographical regions of the globe: Africa, the Americas, Asia, Europe, and Oceania.

### U.S. History (1 credit)

The U.S. History course focuses on the development of historical thinking skills (chronological reasoning, comparing and contextualizing, crafting historical arguments using historical evidence, and interpreting and synthesizing historical narratives) and the development of students' abilities to think conceptually about U.S. history from approximately 1491 to the present. Seven themes of equal importance – American and National Identity; Migration and Settlement; Politics and Power; Work, Exchange, and Technology; America in the World; Geography and the Environment; and Culture and Society – provide areas of historical inquiry for investigation throughout the course. These require students to reason historically about continuity and change over time and to make comparisons among various historical developments in different times and places.

### U.S. Government (0.5 credit)

This one-semester course introduces students to key ideas, institutions, policies, interactions, roles, and behaviors which characterize the political culture of the United States. The course examines politically significant concepts and themes, teaching students how to apply disciplinary reasoning, assess the causes and consequences of events, and interpret data to develop evidence-based arguments.

### **U.S. Economics (0.5 credit)**

This one-semester course invites students to consider how the everyday choices they make to satisfy their needs and wants impact global society. Students learn about economics as a behavioral science, following coursework that focuses on basic macro- and microeconomic principles. Topics covered include the study of economic systems, supply and demand, market structures and pricing, business and labor, banking, and finance.

## **Social Studies Electives**

The following is a list of Social Studies electives that students may take during their 4 years at Selwyn Upper School.

### **American Studies (0.5 credit)**

This class is an interdisciplinary exploration of American civilization since the late nineteenth century. Drawing from a wealth of diverse fields, including literature, politics, history, law, visual culture, and philosophy, students will engage with the concept of “America” as a marker of national identity and global significance. The course encourages students to consider new ways of interpreting the complex web of ideas and cultures that comprise American life and to situate their own experiences within it.

### **European Studies (0.5 credit)**

This course familiarizes students with historical and cultural arrangements that define spaces of memory, belonging, and identity as “European.” Through the lenses of history, literature, philosophy, religion, politics, and economics, we will trace the intellectual roots of “Europe” as a concept in Western civilization, emphasizing the different ways inhabitants of the region have constructed their societies. Questions examined and discussed include the following: Does Europe exist? What nation-states count as European? Where does the idea for Europe come from? What does it mean to be European?

### **Jurisprudence (0.5 credit)**

This course introduces students to the legal theories and concepts that underpin our modern justice system. The first half of the semester is devoted to studying the derivation of law including the concepts of natural law, civil law, legal reasoning, descriptive and normative jurisprudence, and the formation of legal institutions. Using this philosophical framework as a guide, students will then explore contemporary issues related to legal studies, such as debates regarding international law, human rights, and bioethics.

### **World Religions (0.5 credit)**

This course is an introduction to the world’s major religious traditions and the ways in which religions have developed. The class draws on diverse materials from the world’s religious traditions and multiple disciplinary approaches.

### **Introduction to Philosophy (0.5 credit)**

This class provides an introduction to philosophical reflection and an examination of central questions relevant of human existence as discussed in Western philosophy. Topics include metaphysics, ethics, epistemology, and justice.

**Psychology (0.5 credit)**

This course examines the human mind and its functions from a scientific perspective. Starting with the history of the subject, students gain an appreciation for the depth and diversity of thought that constitute this unique discipline. Once familiar with the field's heritage and common research methods, students study a broad range of topics, such as perception, memory, intelligence, morality, personality, mental illness, religion, language, and creativity.

**Social Studies Independent Study (0.5 credit)**

This course is designed to provide individual students with the opportunity to delve deeply into a topic about which they are passionate. Significant responsibility lies with the student to work independently and to develop a proposal that must be approved by a faculty mentor. The faculty mentor provides counsel throughout the study and evaluates the student's incremental progress. The course culminates in a formal presentation of the student's work.



## Upper School Science

At the Upper School level, Selwyn's Science courses offer students an in-depth knowledge of biology, physics and chemistry. Students develop problem-solving and innovated thinking skills through designing and conducting experiments. They integrate math and language skills into each class while applying scientific thinking to real-world scenarios

### Science Graduation Requirements: 4 credits

Required classes: Biology (9th), Chemistry (10th), Physics (11th)

#### Biology (1 credit)

This course is an introduction to key concepts in biology. This project-based curriculum surveys biological terminology, historical and cultural advances in science, research, and documentation from the global scientific community using the scientific method.

#### Chemistry (1 credit)

This course is designed to provide students with a strong foundation in the key concepts of chemistry, utilizing the scientific method of inquiry, measurement, and data gathering techniques. Through research and labwork, students gain an understanding of the framework and composition of all they see.

#### Physics (1 credit)

This course investigates the principles of optics and electricity, as well as the principles of motion from a Newtonian perspective. With a project-based curriculum focused on experimentation, Physics provides students with a better understanding of the design and workings of the physical world.

## Science Electives

The following is a list of Science electives that students may take during their 4 years at Selwyn Upper School.

#### Earth Science (0.5 credit)

This course explores the foundations of Earth Science in the following related topics: Earth's place in the universe, dynamic Earth processes, energy in the Earth system, bio-chemical cycles, structure and composition of the atmosphere, and geology. Students use both self-assessment and teacher guidance throughout this project-based course.

#### Astronomy (0.5 credit)

This course introduces students to the wonders of the universe. Students begin an introduction to modern astronomy with insight into history and astrophysics. Star types, planets, comets, meteors, and black holes are among the topics investigated in this course.

#### Environmental Science (10th-12th grade) (1 credit)

This field-oriented interdisciplinary science course emphasizes data collection techniques in outdoor lab settings. In addition to field-based and laboratory activities, this course will involve numerous group and independent ecological projects to study various environments, their inhabitants, and the processes that allow them to function. The causes and the possible solutions to the challenges that impact these environments are also investigated.

**Comparative Anatomy (10th-12th grade) (0.5 credit)**

Comparative Anatomy and Physiology is a course which focuses on the structure, function, and evolution of the vertebrate body plan. Students study major groups of vertebrates – fish, reptiles, birds, and tetrapods – and investigate their functional morphologies. This is a challenging course and ideal preparation for pre-veterinary, biology, and even pre-med majors.

**Human Anatomy and Physiology I & II (11th-12th grade) (1 credit)**

Anatomy and Physiology of Human (A&P) Systems is the study of the structure and function of the human body, its individual systems, and the integration of bodily systems into an efficiently functioning organism. Dissection is a major component of this course.

**Chemical Impact on History (10th-12th grade) (0.5 credit)**

This course uses the book *Napoleon's Buttons* by Jay Burreson and Penny Le Couteur as a framework for exploration. *Napoleon's Buttons* is described as “the fascinating account of seventeen groups of molecules that have greatly influenced the course of history. These molecules provided the impetus for early exploration, and made possible the voyages of discovery that ensued... A change as small as the position of an atom can lead to enormous alterations in the properties of a substance-which, in turn, can result in great historical shifts.” In addition to reading the book, students learn fundamental chemistry concepts, connect historical and scientific knowledge, and examine the effect of certain chemical compounds on the body.

**Environmental Research (11th-12th grade) (0.5 credit)**

Environmental Research is designed as a strong laboratory and field investigation course. The goal of this course is to learn about the environment through firsthand observation. Experiences both in the laboratory and in the field provide students with important opportunities to test concepts and principles that were introduced in previous science classes.

**Cellular Biology and Genetics (11th-12th grade) (1 credit)**

This course delves deeper into the inner workings of a cell. During the first semester, students study the organelles and their specific contributions to a living system. From replication to membrane proteins, students gain greater understanding of how the body responds to different external stimuli and medications. During the second semester, students study the different way that genes affect our lives and the genetic mutations that cause genetic disorders. Students discover how stressful events (illness, poor nutrition, and common stress) affect humans on a genetic level.

**Neurology (11th-12th grade) (0.5 credit)**

Using a neuroscientific approach, this course explores topics in biopsychology and cellular/molecular biology. Students study the nervous system, mental illness, neurodegenerative diseases, and disorders of development and childhood.

**Neuropsychopharmacology (11th-12th grade) (0.5 credit)**

This course is a study of the neurology, psychology, and pharmacology of common legal and illegal chemical substances. This course is designed to teach students about the physiological effects of these drugs on the human body, along with their lasting impact on the body and mind.

### **Science of Vector Born Diseases (11th-12th grade) (0.5 credit)**

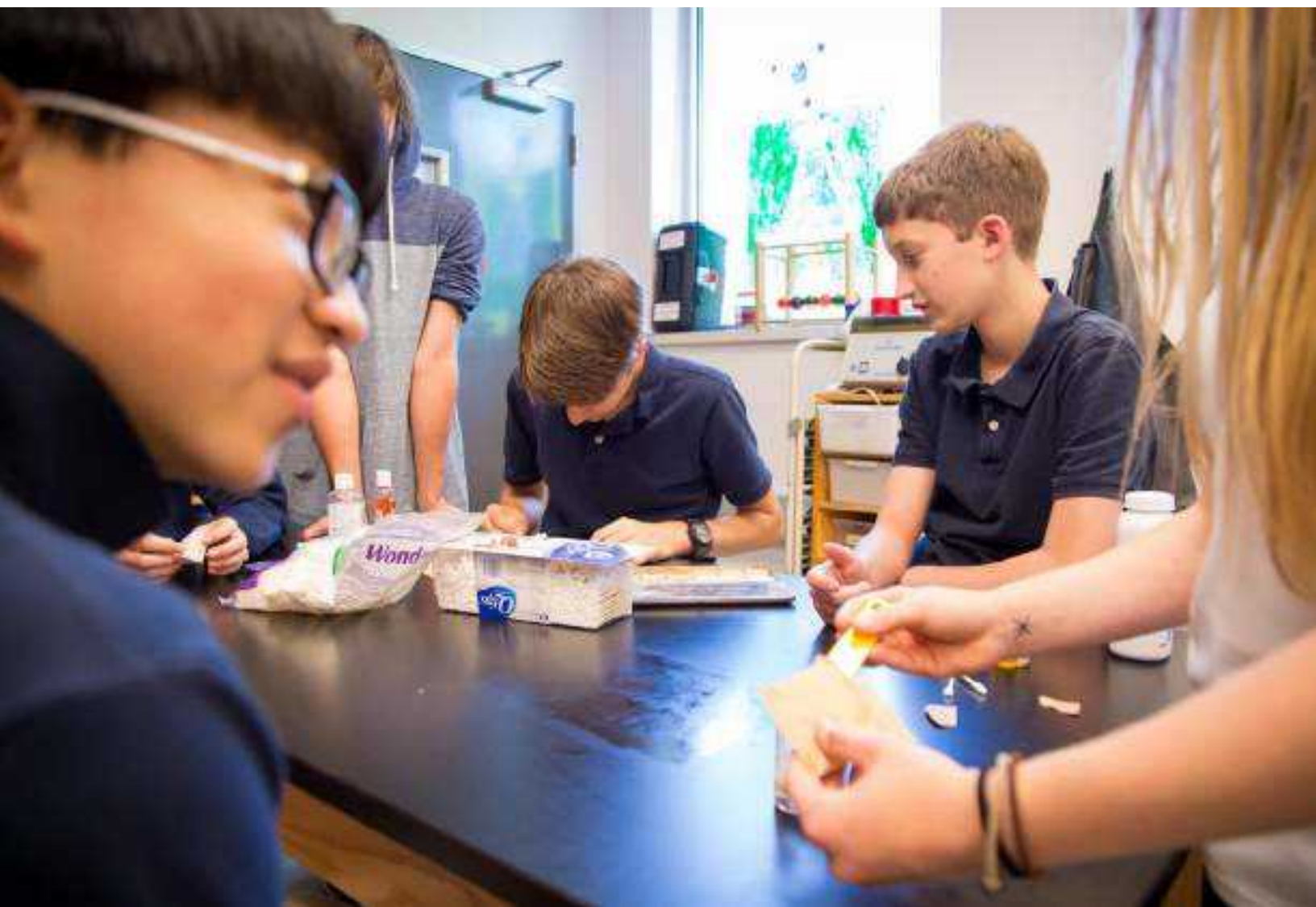
In this course, students study entomology (the study of insects) and their role in the transfer of pathogens from animal to animal, and the affects on communities. This includes such topics as malaria, Zika, Lyme disease, etc. In this course, students are introduced to current research and risk analysis related to travel in today's society.

### **Aero-Astro (11th-12th grade) (1 credit)**

This is an aeronautics class based upon MIT's AeroAstro 1600 class. Students study how rockets function, orbital mechanics, life support systems, the effects of space travel on the human body, robotics and current trends, and plans for space exploration. Students are expected to carry out orbital calculations and make predictions on flight.

### **Science Independent Study (0.5 credit)**

This course is designed to provide individual students with the opportunity to delve deeply into a topic about which they are passionate. Significant responsibility lies with the student to work independently and to develop a proposal that must be approved by a faculty mentor. The faculty mentor provides counsel throughout the study and evaluate the student's incremental progress. The course culminates in a formal presentation of the student's final work.



## Mathematics

At the Upper School level, Selwyn's Mathematics courses prepare students for successful advancement into college level math. The classes engage the students in higher level thinking skills by using the basic concepts of algebra, calculus, and statistics in practical applications such as data gathering and data analysis. The skills learned through the math program prepare students to tackle complex challenges in a real-world setting.

### Mathematics Graduation Requirements: 4 credits

Required classes: Algebra I, Geometry, Algebra II

#### Algebra I (1 credit)

Students study linear, quadratic, and exponential functions, as well as their associated equations and solutions. They begin to learn graphing techniques and sharpen their equation-solving skills, including the use of exponents and radicals. Students also learn to set up equations based on data sets and word problems.

#### Geometry (1 credit)

Students learn the concepts of coordinate and transformational geometry, including logical arguments, proofs, measurement, constructions, congruence, similarity, and the properties of two- and three-dimensional figures. Basic right triangle trigonometry may also be introduced.

#### Algebra II (1 credit)

Students build upon their knowledge of polynomial functions and systems of equations acquired in Algebra I. They continue to develop factoring and graphing skills and will be introduced to more advanced algebra topics, including logarithms, exponentials, conic sections, radicals, and rational equations. Students are also exposed to the concepts of inverse functions and composition of functions.

## Mathematics Electives

The following is a list of Mathematics electives that students may take during their four years in Selwyn Upper School.

#### Pre-Calculus (1 credit)

This course is designed as a precursor to the study of calculus. Students deepen their understanding of functions and graphs, including asymptotic behavior. The concept of limits is introduced graphically and gradually incorporated into the class. Trigonometry is extended beyond the right triangle through the use of both the circle and graphing. Students learn to prove trigonometric identities and learn to appropriately use the Laws of Sine and Cosine.

#### Calculus I (1 credit)

This course covers material typically taught in a first semester college calculus class. Students learn both differential and integral calculus, including the theoretical underpinnings of each concept.

#### Calculus II (1 credit)

This course covers material typically taught in a second semester college calculus class. Topics include curve length, improper integrals, sequences, power series, and Taylor series.



**Statistics (1 credit)**

Students are introduced to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Statistical concepts studied include exploring data, sampling and experimentation, anticipating patterns, and statistical inference.

**The following electives will be offered in alternate years:****Consumer Mathematics (1 credit)**

Topics covered equip students to assume financial responsibilities after high school graduation. During the first semester of this project-based class, students learn about budgeting, taxes, credit cards, loans, and credit scores. During the second semester, students learn about the use and misuse of statistics in our modern financial world, enabling them to be wise consumers.

**Foundations for College Mathematics (1 credit)**

This course prepares students to either successfully undertake the study of College Algebra during their freshman year of college or, alternatively, complete the CLEP exam in order to receive college credit. Students strengthen their basic algebra skills during the fall semester and cover College Algebra course material during the spring semester.



## World Languages

At the Upper School level, the World Language Program is designed to help students discover, explore and communicate as global citizens. The courses prepare students to interact and learn about other cultures and open students' eyes to new ideas and insights while they gain a better perspective on their own culture. In each level of this program, students practice the four aspects of learning language: speaking, writing, listening, and reading.

### World Languages Graduation Requirements: 3 credits

Required classes: Three levels of one language.

#### Spanish I (1 credit)

This course introduces students to the culture and language of the Spanish-speaking world in eight units, with emphasis on accuracy in pronunciation, oral fluency, vocabulary development, and grammatical knowledge of the language. Spanish culture and Hispanic civilizations are taught, including topics such as geography, cities, historical sites, birthday customs, food, cooking, shopping habits, sports, hobbies and entertainment.

#### Spanish II (1 credit)

This course is a continuation of Spanish 1 and includes an introduction to the Spanish language with emphasis on speaking, pronunciation, and the fundamentals of Spanish grammar. The course is taught mainly from an oral standpoint. The course provides students with opportunities to respond to and give oral directions and commands and to make routine requests in the classroom and in public places, understand and use appropriate forms of address, courtesy expressions, tell about daily routines and events, ask and answer simple questions and to be able to participate in brief guided conversations. Aspects of contemporary Spanish culture are introduced through the media, games and adapted readings.

#### Spanish III (1 credit)

This course focuses on language acquisition with communicative competence in listening, speaking, reading, writing and viewing, as well as understanding of Hispanic cultures and issues of identity of the heritage speakers of Spanish in the United States. Students also gain an awareness and understanding of Hispanic cultures, including language variation, customs, geography, history and current events. During this course, students gain confidence using Spanish to express their thoughts on social and academic themes, interact with speakers of the language, and understand oral and written presentations.

## English

At the Upper School level, Selwyn's English courses prepare students to write with a strong understanding of the mechanics of grammar, spelling, and punctuation. Throughout this program, students learn to communicate effectively to a variety of audiences using specific, concise, and contextually appropriate language. As global citizens, students apply empathic, critical thinking and contextual understanding to the study of literature and leave with an understanding of how literature both reflects and modifies cultural trends.

### English Graduation Requirements: 4 credits

Required classes: English I, English II, English III, English IV

### **English I (1 credit)**

The first semester of this course provides freshmen with a strong understanding of Latin and its relationship to English. Given Latin's enduring lexical and linguistic influence, students in this course learn how to apply a basic knowledge of classical language in order to broaden their vocabularies, enhance facility with English through the study of roots, and sharpen abilities in deductive, analogous, and critical reasoning. The focus during the second semester is on advanced English grammar to strengthen writing and communication skills in a variety of contexts while incorporating literary selections with specific focus on works from multiple time periods, genres, and forms.

### **English II (1 credit)**

In this course, students study World Literature and the discipline of Language Arts through reading, analyzing and discussing literature, literary research, and creative writing at an introductory level. Global citizenship is enhanced as students explore literature from a variety of cultures and time periods.

### **English III (1 credit)**

In this course students practice the analysis of literature, from reading and discussion to independent research. Building on skills acquired in previous courses, students begin to create a synthesis of their reading in a scholarly manner as appropriate in a third-year high school level class. In this course, students are exposed to the foundational texts of American Literature and create a working definition of American identity. Students write resumes and a variety of essays in preparation for college applications.

### **English IV (1 credit)**

In this critical analysis-focused course, students learn about major literary works within the framework of historical and social/cultural context. Students practice situating works within context and are introduced to the concepts of various schools of philosophy and literary criticism.

## **English Electives**

The following is a list of English electives that students can take during their four years at Selwyn Upper School:

### **Creative Writing (0.5 credit)**

In this workshop-style class, students explore the forms of creative expression available through the discipline of writing. This exploration occurs through the practice of various forms of writing, including (but not limited to): poetry, short fiction, creative nonfiction, scriptwriting, and journalism.

### **Genre Fiction (0.5 credit)**

In this course, students explore non-literary genres of fiction, including science fiction, horror, fantasy, and mystery. Students read a number of texts from each of these genres, critically analyze standard tropes and conventions, and practice writing in these genres and styles.

### **English Independent Study (0.5 credit)**

This course is designed to provide individual students with the opportunity to delve deeply into a topic about which they are passionate. Significant responsibility lies with the student to work independently and to develop a proposal that must be approved by a faculty mentor. The faculty mentor provides counsel throughout the study and evaluate the student's incremental progress. The course culminates in a formal presentation of the student's work.

## Fine Arts

At the Upper School level, Selwyn's Fine Arts courses offer a multicultural view of the arts through history and various genres. Students have multiple opportunities to perform and display their art form.

### Fine Arts Requirements: 2 credits

#### Digital Art (0.5 credit)

Students gain a comprehensive understanding of Adobe Photoshop and Adobe Illustrator in this course. This project-based course teaches the fundamentals of graphic design and digital illustration, as well as preparing artworks for print and web. Using these professional-grade programs exposes students to the current level of technology and quality in the design world today. Projects include but are not limited to movie posters, logo design, company branding, and animated .GIFs.

#### Drama (0.5 credit)

In this course students learn the elements of theatre, acting techniques, and theatre appreciation. Through improvisation exercises, voice and movement techniques, and the study of established acting methods such as Suzuki and Meisner, students gain confidence in speaking and moving on stage and off. Students learn audition skills, take part in a performance, and gain an appreciation for the historical and cultural significance of theatre.

#### Film and Audio Editing (0.5 credit)

In this course, students learn the process of film-making from pre-production planning, through filming, to post-production editing. Students also learn to incorporate sound design to put the finishing touches on their own short film.

#### Instrumental Music (1 credit)

In this performance-based course, students play music in a group setting, read music notation, study fundamental music theory, and learn related music history. Student performances are held at least three times throughout the school year and include school, community, solo, and small ensemble performances.

#### Music Technology (0.5 credit)

In this course students discover and explore introductory concepts used in music sequencing, notation, and recording. No prior musical experience is needed; however, having training on an instrument or voice is helpful. Students create music using sequencing/editing software and synthesizers.

#### Photography (0.5 credit)

In this introduction to photography, students take traditional film photographs and use darkroom processing techniques to produce portfolios of black and white photographs. Students also learn to enhance their own work using digital editing via Adobe Photoshop.

### **Studio Art (0.5 credit)**

Students learn vital fundamentals and advanced techniques for traditional artmaking in this course, which emphasizes (but is not limited to) drawing realistically, oil/acrylic painting, and sculpture. Projects are tailored to students' goals and interests. Art history is a major component of this class, and students are encouraged to thoughtfully consider their own art in a global and historical context. In addition, students progress through the valuable steps of matting, framing, and displaying their art.

### **Technology (0.5 credit)**

This course is an introduction to Word processing, desktop publishing, presentation software, spreadsheets, and building simple e-portfolios. Students delve into creative computing (robotics and programming), explore educational technology like G Suite, email, and research databases, and become well-versed in the appropriate standards of digital citizenship .

### **Introduction to Computer Science (0.5 credit)**

This course is designed to offer an introduction to computer science. Students will learn the basics of computer programming along with the basics of computer science. The material emphasizes computational thinking and helps develop the ability to solve complex problems. This course covers the basic building blocks of programming along with other central elements of computer science. It gives a foundation in the tools used in computer science and prepares students for further study in computer science, including AP Computer Science Principles and AP Computer Science A courses. The course allows students to work independently in text-based Python. The course also includes a career focus, where at the end of units, students meet (via videos) individuals from different industries who work in coding (medical, music, etc.).

## **Physical Education**

At the upper school level, students learn the fundamentals of healthy living and exercise. Through indoor and outdoor activities, students develop team-building and problem-solving skills. The curriculum includes the rudiments of common team sports such as basketball, soccer and volleyball, as well as individual conditioning and wellness.

**Graduation Requirement: 2 credits**

## **Electives**

Students choose electives to deepen their knowledge of previous subjects, personal interests and passions and to meet the graduation requirements of 26 credits. Elective course descriptions are found in the previous sections under each academic subject.

**Graduation Requirement: 2 credits**

# SELWYN AND ADVANCED PLACEMENT (AP) COURSES

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Selwyn's academic philosophy supports deep learning over teaching to a test. We want students to retain what they have learned in their classes and find ways to integrate their knowledge into their daily lives. To achieve that goal, our teachers develop curricula that covers both a depth and breadth of material that is comprehensive, engaging, and rigorous. We truly believe in meeting students where they are and challenging them to achieve at the highest level they can. Relying on current educational research and years of experience, our teachers work hard to ensure that each student in the Upper School develops both critical thinking skills and a core mastery of their courses' subject matter.

With that said, every Upper School teacher at Selwyn is trained by the College Board to teach Advanced Placement. While we believe in teaching to the individual student, we also recognize that in some cases, a student will seek AP course credit in circumstances where it might benefit them. Therefore, all of our teachers are fully trained in and can offer AP courses for students requiring them, but in general, we believe that the standard set in Selwyn's academic classes covers material more exhaustively and in more depth than in those courses where the teacher is obligated to teach to a test, as they are in AP courses.





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[SELWYNSCHOOL.ORG](http://SELWYNSCHOOL.ORG) / 940-382-6771 / [ADMISSIONS@SELWYNSCHOOL.COM](mailto:ADMISSIONS@SELWYNSCHOOL.COM)

2270 COPPER CANYON ROAD ARGYLE, TX 76226

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