



COLUMBIA SCHOOL



## 2023-2024 Dual Diploma Course Offerings

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# 2023-2024 Course Offerings

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View our [HGS Technology Requirements.pdf](#) to learn more about the hardware and software needed for coursework in our program.



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# 2023–2024 Course Offerings

**NOTE:** Use either the course code or the course name when registering for courses.

## HIGH SCHOOL ENGLISH

**LAR3105-A English I A (0.5 credit)**

**LAR3105-B English I B (0.5 credit)**

English I has been designed to integrate all aspects of Language Arts standards into engaging and interactive units organized around reading, writing, and comprehension skills. Students will dissect and analyze the basic elements of plot, setting, mood, character development, narrative devices, theme, and author's perspective in a variety of literary genres. Students will analyze and synthesize information from different texts, including graphic aids. Students will write in a variety of modes and tap into the power of research as they deepen their understanding of a variety of topics. Throughout this year-long course, students will also reinforce skills that support the study of other disciplines such as science, math, world languages, and social studies.

**LAR3205-A English II A (0.5 credit)**

**LAR3205-B English II B (0.5 credit)**

This course expands on skills gained in English I. Students will analyze a wide variety of world literature from ancient to contemporary literary periods, examining author's style and voice. Students will critique arguments, establish patterns of persuasion, and delve into the language of poetry, history, and culture by way of Greek tragedy and Medieval romance.

**Prerequisite:** English I (recommended)

## HIGH SCHOOL MATH

**MAR3101-A Algebra I A (0.5 credit)**

**MAR3101-B Algebra I B (0.5 credit)**

Algebra I is the foundation for high school mathematics and the bridge from the concrete to the abstract study of mathematics. Throughout this course, students will extend their experience with tables, graphs, and equations; solve linear equations, inequalities, and systems of linear equations and inequalities; and begin the process of working with polynomials and quadratic relationships. Algebra students will expand their knowledge of the number system to include irrational numbers, generate equivalent expressions, and use formulas.

**Prerequisite:** Pre-Algebra

**MAR3201-A Algebra II A (0.5 credit)**

**MAR3201-B Algebra II B (0.5 credit)**

In Algebra II students conceptualize, analyze, and identify relationships among functions. Topics in the course include equations and inequalities, systems, functions (from polynomial to logarithmic functions), conics, and trigonometry. Students also explore probability and statistical analysis while deepening an understanding of the applications of algebra, trigonometry, statistics, and geometry.

**Prerequisite:** Algebra I

**MAR3007-A Geometry A (0.5 credit)**

**MAR3007-B Geometry B (0.5 credit)**

Geometry is the branch of mathematics that studies the properties and relationships of lines, shapes, area of surfaces, and volume of solids. Geometry also answers questions about shape, size, relative position of figures, and the proportions of space by exploring objects in two and three dimensions. Throughout this year-long course, students will have the opportunity to make conjectures about geometric situations and to apply theorems and postulates for writing proofs. Students will also expand upon preexisting knowledge of algebra and basic geometry skills while studying trigonometry, coordinate geometry, and proofs.

**Prerequisite:** Algebra I or its equivalent

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### **MAR3011-A Precalculus A (0.5 credit)**

### **MAR3011-B Precalculus B (0.5 credit)**

In the Precalculus course students will be presented with a comprehensive study of functions and move into an analysis of rudimentary calculus concepts, such as the difference quotient and the notion of “taking a limit.” In addition to introducing students to terminology and concepts essential to the study of calculus, this course will also help develop reasoning and analytical skills that may be applied to problems in the real world. Familiarity with these topics is especially important for students intending to study calculus, physics or other sciences, and engineering in college.

#### **Customer-Provided Required Physical Materials:**

An online graphing calculator - Choose from one of the following:

- Symbolab - <https://www.symbolab.com/graphing-calculator>
- Mathway - <https://www.mathway.com/graph>
- GeoGebra - <https://www.geogebra.org/graphing?lang=en>
- Desmos - <https://www.desmos.com/calculator>

### **MAR3005-A Statistics A (0.5 credit)**

### **MAR3005-B Statistics B (0.5 credit)**

Statistics is a practical hands-on approach to the study of statistics and probability. Topics include the use of graphs such as histograms, stem plots, time plots, and scatter plots to display data; using numbers such as median, mean, and standard deviation to describe data; and evaluating data distribution. Students examine relationships using correlations and least square regressions. They calculate the probability of simple and compound events. They learn to estimate with confidence, explore tests of significance, and evaluate the validity of statistics contained within published reports.

#### **Customer-Provided Required Physical Materials:**

An online graphing calculator - Choose from one of the following:

- Symbolab - <https://www.symbolab.com/graphing-calculator>
- Mathway - <https://www.mathway.com/graph>
- GeoGebra - <https://www.geogebra.org/graphing?lang=en>
- Desmos - <https://www.desmos.com/calculator>

## **HIGH SCHOOL SCIENCE**

### **SNR3002-A Biology A (0.5 credit)**

### **SNR3002-B Biology B (0.5 credit)**

Biology is the science of life or living matter in all its forms and phenomena, including its origin, growth, reproduction, structure, and behavior. Throughout this course, students will investigate the relationship between structure and function and apply it to the study of topics such as molecules, cells, organisms, and biological systems. They will learn how the human body works and what makes living things unique. Students will also learn about the interdependence and interactions of biotic and abiotic components of the environment, and about mechanisms that maintain continuity and lead to changes in populations over time.

### **SNR3003-A Chemistry A (0.5 credit)**

### **SNR3003-B Chemistry B (0.5 credit)**

Chemistry is the investigation of atomic and molecular-level properties and interactions. The course focuses on properties of matter, atomic structure, and basic atomic bonding.

#### **Customer-Provided Required Physical Materials:**

An online graphing calculator - Choose from one of the following:

- Symbolab - <https://www.symbolab.com/graphing-calculator>
- Mathway - <https://www.mathway.com/graph>
- GeoGebra - <https://www.geogebra.org/graphing?lang=en>
- Desmos - <https://www.desmos.com/calculator>

### **SNR3004-A Environmental Science A (0.5 credit)**

### **SNR3004-B Environmental Science B (0.5 credit)**

Environmental Science is a course designed to show thematic connections between a variety of science disciplines including biology, chemistry, and physics. Throughout this year-long course, students will gain a coherent and realistic picture of the applications of a variety of scientific concepts as they manifest in our environment. The aim of this course is to increase students' knowledge of environmental challenges of today, while continuing to cultivate scientific critical thinking skills.

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### **SND3007-S Marine Science (DD) (0.5 credit)**

About 70% of the Earth is covered by water. Even today, much of the world's oceans remain unexplored. Marine scientists make exciting new discoveries about marine life every day. In this course, students will discover the vast network of life that exists beneath the ocean's surface and study the impact that humans have on the oceans.

### **SNR3005-A Physics A (0.5 credit)**

### **SNR3005-B Physics B (0.5 credit)**

Physics examines the relationship between matter and energy and how the two interact. Using an inquiry-based approach throughout this year-long course, students explore both physics concepts and the math used to describe them. The course integrates STEM and physics content standards for topics including mechanics, waves and sound, light and optics, electricity and magnetism, nuclear science, and modern physics.

## **HIGH SCHOOL SOCIAL STUDIES**

### **SSR3011-S Economics (0.5 credit)**

Economics introduces the principles and the applications of economics in everyday life. Students develop an understanding of limited resources and compare it with unlimited wants and needs. Economics allows students to learn how individual and national economic decisions are made to allocate goods and services among competing users, problem solve as they focus on understanding economic problems, learn the laws of demand and supply, examine market organization (labor and financial markets), discover how firms deal with competition, and how poverty and economic inequality impact individuals in the community. The goal of this single-semester course is for students to develop the critical skills of analysis, synthesis, and evaluation in a demanding and thoughtful academic setting focused on developing their own views on current economic and monetary issues.

### **SSD3008-A Psychology A (DD) (0.5 credit)**

### **SSD3008-B Psychology B (DD) (0.5 credit)**

Students in this course will learn a brief history of psychologists and their experimental methods. In the first semester, they will examine personality theories, human development, consciousness, and more. In the second semester, students examine the nature of intelligence in humans and animals, learn about classical and operant conditioning, and investigate social psychology and psychological disorders.

### **SSR3001-S U.S. Government (0.5 credit)**

U.S. Government will introduce to students the main concepts that make up the modern government of the United States. In this single-semester course, students will learn the function of political systems, the purpose of a party system, how policy is decided, elections, voting, and the basic ideas that are associated with being a participant within a political system. Students will look at the development of the government from its inception to the modern incarnation that it has become. A primary goal of this course will be to teach students the concepts associated with the idea of civil efficacy. Another goal is to teach the power of the media and of public opinion. These concepts will illuminate the past and current struggles for civil rights and liberties, as well as how representative government functions in the United States.

### **SSR3002-A U.S. History A (0.5 credit)**

### **SSR3002-B U.S. History B (0.5 credit)**

U.S. History expands upon basic skills and knowledge acquired from previous history and social studies courses. Throughout this year-long course, students will learn about historical trends, breaks with tradition, and systems of political thought that supported and gave rise to the United States as a democratic republic. Additionally, students will study early exploration, colonization, the rise of empires, revolutions, and broad historical movements such as westward expansion and progressivism.

### **SSD3015-A World Geography and Cultures A (DD) (0.5 credit)**

### **SSD3015-B World Geography and Cultures B (DD) (0.5 credit)**

In this course, students apply cultural and physical perspectives to examine how location affects economic and cultural activities in cities, regions, countries, and continents around the world.

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### **SSR3009-A World History A (0.5 credit)**

### **SSR3009-B World History B (0.5 credit)**

World History expands upon basic skills and knowledge acquired from previous history and social studies courses. Throughout this year-long course, students will examine important world civilizations from different eras, continents, and regions. Students will study ancient civilizations in the cradles of civilization, including Mesopotamian civilizations in the Fertile Crescent. The course also traces the rise and fall of important empires or dynasties in Egypt, China, India, Africa, and the Middle East. Students trace the causes and effects of colonization; slavery; global trade; economic systems; international diplomacy; political, economic, and social revolutions; and military conflicts, as well as how they helped to shape the modern world.

## **HIGH SCHOOL ELECTIVES**

### **EFD3002-S Art Appreciation (DD) (0.5 credit)**

Art Appreciation investigates how quality is determined and created by artists, in order to evaluate and appreciate art on a deeper level. Students are introduced to the elements and principles of art and the importance of artists' context and perspective. The course covers different periods in art history, different techniques in art, and how to research and evaluate art, emphasizing why each contributes to valuing a piece of art and provides the necessary knowledge to do so.

### **ETD3005-S Basic Web Design (DD) (0.5 credit)**

In this course, students learn how to design a beautiful and functional website, and how to take their design and translate it into a live website using Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS) programming languages. Students learn about the use of color, layout, and when to use different techniques, typography rules, and the importance of imagery. Upon completion of this course, each student will have hands-on experience creating a fully functioning website. Students do not need to have a previous technical background with HTML or CSS prior to taking this course.

#### **Customer-Provided Required Physical Materials:**

- HTML Text Editor: Sublime Text – <http://www.sublimetext.com>
- image editing software: Pixlr – <https://pixlr.com/editor> (in-browser)
- webhosting and basic in-browser FTP:
  - Github – <https://github.com> and
  - Github Pages – <https://pages.github.com>

### **ETD3012-S Digital Media (DD) (0.5 credit)**

Digital Media is a project-based survey of different forms of digital media, such as digital audio, imaging and illustration, movie editing, and animation. The course is oriented toward teaching broad, flexible tools and concepts that are not tied to any one platform or program. Each module ends with a culminating task (such as a podcast or short film). Students will be able to draft and develop projects as they build their skills over each lesson.

**Customer-Provided Required Physical Materials:** printer, camera, scanner (optional), and one of the following programs: Audacity (free download), GIMP (free download), Inkscape, DaVinci Resolve (free version), Pencil2D, Blender, GDevelop, or Piskel

### **EYR3003-A Health and Fitness A (0.5 credit)**

### **EYR3003-B Health and Fitness B (0.5 credit)**

In this course, students acquire the knowledge and skills they need to lead a healthy life. Topics include the impact of personal decisions on the student's own health; the basic science behind nutrition, exercise, stress, and psychology, and examine how these factors affect a person's overall health; the dramatic changes that the human body experiences from birth to death; and improving or maintaining one's own health.

### **EBD3007-S Introduction to Business (DD) (0.5 credit)**

This course introduces students to basic business concepts that will help them understand how a business survives in today's economy and the role that consumers play in the same economy. Students will learn how to balance a checkbook, save for the future, and use credit wisely. Students will also learn how to create a resume and how to participate in a job interview.

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### **EFD3007-S Media and Communications (DD) (0.5 credit)**

From banner ads to billboards, newspaper articles, and Facebook feeds, people are constantly sharing ideas. This course looks at the many facets of mass media. Students will learn how the media shapes every aspect of our lives. We examine the role of newspapers, books, magazines, radio, movies, television, and the growing influence of Facebook, YouTube, and Twitter.

### **EFD3008-S Music Appreciation (DD) (0.5 credit)**

In this course, students will gain a thorough understanding of music by studying the elements of music, musical instruments, and music history, as well as music advocacy. Students will be introduced to the orchestra and composers from around the world. They will be required to be a composer, performer, instrument inventor, and advocate.

### **ETD3029-S Renewable Energy (DD) (0.5 credit)**

In this course, students will investigate sustainability and the importance of finding new, innovative ways to ensure that we can provide for global energy needs today and in the future. Students will take a balanced and evidence-based look at climate change, ways that we can harness renewable resources, sustainable societies, biodiversity, and smart growth.

### **ETD3030-S Space Exploration (DD) (0.5 credit)**

This course will examine the history and future of space travel. Students will learn about landmark 20th century events, find out what it takes to put people in space, and what it will take for us to reach new frontiers, including Mars and beyond. Topics include launch and landing systems, manned vs. unmanned spaceflight, and low earth vs. beyond earth orbit.

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## NCAA Approved Courses

To be successful in college, students need to be prepared for college coursework. In [Division I](#) and [Division II](#), the National Collegiate Athletic Association (NCAA) sets academic initial-eligibility standards that take into account GPA, standardized test scores, core courses taken in high school and the grades earned in those core courses. [Division III](#) schools hold student-athletes to the same overall standards for the institution in which they're enrolling. All student-athletes also must meet the unique acceptance requirements of the college or university they plan to attend (which may exceed NCAA standards).

Not all high school classes count as NCAA core courses. Only classes in English, math (Algebra 1 or higher), natural or physical science, social science, foreign language, comparative religion, or philosophy **may be approved** as NCAA core courses. Remedial classes and classes completed through credit-by-exam are not considered NCAA core courses.

**\*Please refer to course names in previous sections of the catalog for exact naming convention to be used when registering for courses.**

Columbia School has received approval from the NCAA for the following courses:

- Algebra I
- Algebra II
- Biology
- Chemistry
- Economics
- English I
- English II
- Environmental Science
- Geometry
- Marine Science (DD)
- Physics
- Precalculus
- Psychology (DD)
- Renewable Energy (DD)
- Space Exploration (DD)
- Statistics
- U.S. Government
- U.S. History
- World Geography and Cultures
- World History

## UC A-G Approved Courses

The University of California A-G / College Entrance Requirements are a sequence of high school courses that students must complete (with a grade of C or better) to be minimally eligible for admission to the University of California (UC) and California State University (CSU). They represent the basic level of academic preparation that high school students should achieve to undertake university work.

The purposes of the A-G / College Entrance Requirements are to ensure that entering students:

- can participate fully in the first-year program at UC and CSU in a broad variety of fields of study
- have attained the necessary preparation for courses, majors, and programs offered at UC and CSU
- have attained a body of knowledge that will provide breadth and perspective to new, more advanced studies
- have attained essential critical thinking and study skills

**\*Please refer to course names in previous sections of the catalog for exact naming convention to be used when registering for courses.**

UC A-G Approved Courses include the following:

- Algebra I
- Algebra II
- Art Appreciation (DD)
- Biology
- Chemistry
- Digital Media (DD)
- Economics
- English I
- English II
- Environmental Science
- Geometry
- Health and Fitness
- Introduction to Business (DD)
- Music Appreciation (DD)
- Physics
- Precalculus
- Psychology (DD)
- Statistics
- U.S. Government
- U.S. History
- World Geography and Cultures (DD)
- World History