

GALILEO ACADEMY OF SCIENCE & TECHNOLOGY

**1150 Francisco Street
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**11TH GRADE
COURSE SELECTION SHEET
FALL 2011-2012**

Please remember when selecting your classes that you are selecting them for one full school year.

Course # Course

ENGLISH:

1. 1070 **American Literature 1 and 2**
This course will further explore the American Literature that began in the 10th grade with selections taken from all genres. Special emphasis will be on the novel and essay.
- 1071 **American Literature 1 Honors**
- 1082 **American Literature 1.6 and 2.6**
Specially designed academic instruction in English.
- 1102 **Language and Composition (Advanced Placement)**
This course engages students in becoming skilled readers of prose written in a variety of periods and disciplines. We will deepen our appreciation of the ways in which writers use language to provide both meaning and pleasure for their reader; you will incorporate your understanding of the authors writing within your own. The course will concentrate on the experience, the interpretation, and the evaluation of prose. The readings are primarily, but not exclusively, American - a combination of non-fiction, drama, literature, and poetry.
- 1374 **ELD/English Language Development 1 (Beginning)**
- 1376 **ELD/English Language Development 3 (Intermediate)**
- 1378 **ELD/English Language Development 5 (Early Advanced)**
- 1380 **ELD/English Language Development 7 (Advanced)**

SOCIAL STUDIES:

2. 1550 **United States History 1 and 2**
During the first semester the students will have a short review of the events in the development of the United States from the 17th through the 19th centuries. The students will then explore several themes such as reform, expansion, war and peace, the roles of women, immigration, ethnicity and study in-depth of the Progressive Era, World War I, the jazz age, the Depression, the New Deal and World War II.
- 1551 **United States History 1 and 2 Honors**
- 1552 **United States History AP (Advanced Placement)**
This course prepares students to take the national AP exam, which if passed successfully allows them to obtain college credit for the course.
- 1555 **United States History 1.6 and 2.6**
Specially designed academic instruction in English.
- 1559 **United States History 1.8C and 2.8C**
Primary language support in Chinese.
- 1561 **United States History 1.8S and 2.8S**
Primary language support in Spanish.

SCIENCE:

3. 3021 **Biotechnology and Genetics Program**
Principles of Biotechnology 1
Are you curious about why you look like your parents? Do you know how bacteria can make medical drugs for us? Why is biotechnology a hot topic in the news? How can you make bacteria glow in the dark? We have the answers and you are invited to join our study program!
Fulfills one year of UC-d lab life science requirement
- Fall Semester Program**
Basic Microbiology Techniques
Basic Molecular Biology Concepts
DNA Purification and Manipulation
Human Genetics (Probability and Genetic Disorders)

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Spring Semester Program

PCR

Bacteria Transformation

Ethics in Genetic Engineering

Job Shadowing Day at Genentech

Come and explore the endless possibilities of tomorrow's science!

*Career Path – Biological Science and Health*3022***Principles of Biotechnology 2****UC-d lab life science requirement pending approval process of course***Fall Semester**

Bacterial Transformation

Human Immunology

Protein Structure & Function

Spring Semester

Protein Isolation & Chromatography

Immunology tests

ELISA & Western Blot

3012**Biology AP (Advanced Placement) Career Path-Biological Science.**

This course is the equivalent to an introductory college level biology course. The course differs from 9th grade Biology in respect to the textbook used, range and depth of topics covered and effort required of students. In the spring, a cumulative AP Biology exam is administered by the College Board. Successful completion of the exam could lead to college credit.

Students must apply with the instructor in order to take AP Biology.*Fulfills one year of UC-d lab life science requirement*3239**Health Careers Exploration****Year one of the Health Academy is designed for Juniors. In the first year, students focus on career exploration.**

Each week during block days students visit CPMC, watch live surgery, and interact with doctors and other health care providers in different departments.

Students will be concurrently enrolled at CCSF and receive 3 units of college credit.

3210**Physiology 1 and 2**

This course examines the structure and function of the human body.

*Career Path – Biological Science and Health.**Fulfills one year of UC-d lab life science requirement*3190**Physiology 1.6 and 2.6**

Specially designed academic instruction in English.

3056**Chemistry 1 and 2**

This course reflects the California standards in chemistry that include: atomic / molecular structure, nuclear chemistry, chemical bonds, kinetics, thermodynamics, gases, solutions, chemical reactions, equilibrium, stoichiometry.

Prerequisite: C or higher in 1st year algebra – D or higher in Chemistry 1 required to continue into Chemistry 2 (or instructor's consent)

*Career Path – Environmental Science (Preparation for AP), and Health.**Fulfills one year of UC-d lab physical science requirement*3073**Conceptual Chemistry 1 and 2**

This is a general introductory chemistry course that covers all of the chemistry standards, but does not emphasize mathematics.

*Career Path – Environmental Science (Preparation for AP), and Health.**Fulfills one year of UC-d lab physical science requirement*

- 3057 **Chemistry 1 and 2 Honors**
 This course reflects the California standards in chemistry (see Chemistry). Course goes into more depth and higher workload (including laboratory) than regular Chemistry.
Prerequisite: B (or higher) in 1st year algebra *and* recommendation of current science teacher (or consent of instructor). C or higher in Honors Chemistry 1 required to continue into Honors Chemistry 2 (or instructor's consent)
Career Path – Environmental Science (Preparation for AP), and Health.
Fulfills one year of UC-d lab physical science requirement and earns extra honors credit
- 3058 **Chemistry AP (Advanced Placement)**
 This course is equivalent to a first-year college chemistry for science majors. In the spring, a cumulative AP Chemistry exam is administered by the College Board. Successful completion of the exam could lead to college credit.
Prerequisite: B (or higher) in 2nd year algebra *and* prior chemistry (or physics) or consent of instructor. C or higher in Chemistry AP 1 required to continue into Chemistry AP 2 (or instructor's consent)
Fulfills one year of UC-d lab physical science requirement and earns extra honors credit
- 3059 **Chemistry 1.6 and 2.6**
 Specially designed academic instruction in English.
- 3075 **Environmental Science**
 Environmental Science is an interdisciplinary course, designed to further students' understanding of ecological interactions, environmental problems, and their possible solutions. Topics of concern include population growth, pollution, waste disposal, soil conservation, food production, pesticide hazards, wilderness and wildlife conservation, environmental laws, and ethics.
Career Path – Environmental Science.
Fulfills one year of UC-g elective requirement
- 3085 **Environmental Science 1.6 and 2.6**
 Specially designed academic instruction in English.
- 3101 **Environmental Science AP (Advanced Placement)**
 This course offers students a unique and exciting opportunity to explore the natural world through hands on learning and weekly trips to the Presidio National Park. While working side-by-side with professional scientists, students will gain valuable workplace and life experience. Students participating in the class will earn an extra five high school science credits and at least one college credit from City College.
Career Path – Environmental Science. This course prepares students to take the national advanced placement exam, which if passed successfully allows them to obtain college credit for the course.
Prerequisite: Completion of Environmental Science OR completion of Biology with a C or better AND a letter of recommendation from a teacher
Fulfills one year of UC-d lab physical science requirement
- 3270 **Physics 1 and 2**
 Students study the most central concepts of physics including mechanics, the wave model, electromagnetism, special relativity, geometric optics and the conservation laws (mass, energy, and momentum).
Prerequisites: C or higher from prior math class *and* completion of or concurrent enrollment in Advanced Algebra *or* consent of instructor
Fulfills one year of UC-d lab physical science requirement
- 3272 **Physics AP (Advanced Placement)**
 AP Physics C is a rigorous calculus-based physics course for physical science majors and engineers. The fall semester focuses on mechanics and the spring semester on electricity and magnetism. This course prepares students to take the national advanced placement exam. Successful completion of the exam could lead to college credit.
Prerequisite: Completion of or concurrent enrollment in any calculus course and completion of any physics course (regular, honors, or AP physics B). Exceptions will be made in rare cases for highly capable students with permission of instructor for placement in **all Physics** courses.
Fulfills one year of UC-d lab physical science requirement
- 3273 **Physics 1.6 and 2.6**
 Specially designed academic instruction in English.

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- 3295 **Physics 1 and 2 Honors**
 Students study the most central concepts of physics including mechanics, the wave model, electromagnetism, special relativity, geometric optics and the conservation laws (mass, energy, and momentum). Course goes into more depth and higher workload than regular Physics.
Prerequisites: B or higher from prior math class *and* completion of or concurrent enrollment in Advanced Algebra *or* consent of instructor
Fulfills one year of UC-d lab physical science requirement

MATHEMATICS:

4. 2010 **AP Statistics 1 and 2**
 Students in this college level course will study four major areas: exploratory analysis of data (use of graphical and numerical techniques to study patterns and departures from patterns), planning a study (data must be collected according to a well-developed plan if valid information on a conjecture is to be obtained), probability (used for anticipating what distribution data should look like under a given model), and statistical inferences (selection of appropriate models).
- 2130 **Advanced Algebra 1 and 2**
 Students in this course will continue their study of functions and their graphs: linear, quadratic, exponential, logarithmic, rational and irrational. This includes transformations of graphs, representing functions in multiple ways and understanding the connections among the representations and using functions to model real-world situations. They will also study systems of linear functions, systems of linear inequality, solving polynomial and rational equations, sequences and series, and probability and statistics.
- 2015 **Advanced Algebra Finite 1 and 2**
 This course is an alternative for those who want to continue their math instruction beyond Geometry, but don't necessarily need to prepare for advanced courses such as precalculus or calculus. There is extensive use of scientific calculators throughout the course. In addition to units in the text, there are units which involve using computers such as the statistics unit and the computer applications unit. There is also a unit on banking and finance. Many of the units parallel the regular Advanced Algebra curriculum, but there is a little more time spent on discrete areas of mathematics than in the regular Advanced Algebra course.
- 2017 **Advanced Algebra Finite .6**
 Specially Designed Academic Instruction in English.
- 2131 **Advanced Algebra 1 and 2 Honors**
 This one year course covers the Algebra II California State Standards in a more in-depth approach than the Algebra II course. Students will regularly deal with more challenging problems, including complex word problems. New topics are approached more rapidly and immediately adopted. Topics are studied in greater detail. Precise terminology is emphasized and not explained on tests. Minimal review of previously learned algebra, other topics or technology is provided. Students are expected to review on their own.
- 2147 **Adv. Algebra 1.6 and 2.6**
 Specially designed academic instruction in English.
- 2144 **Adv. Algebra 1.8C and 2.8C**
 Primary language support in Chinese.
- 2143 **Adv. Algebra 1.8S and 2.8S**
 Primary language support in Spanish.
- 2202 **Pre-Calculus 1 and 2**
 Students in this course will further their study of functions and their graphs: rational functions, piecewise functions and trigonometric functions. Students will be able to find inverse of functions as well as learn how to compose functions. In addition, students will study trigonometric identities, laws of sines and cosines, conic sections, polar equations and their graphs, conic sections, vectors, sequences and limits of sequences, and introduction to limits. Complex numbers, mathematical induction, the fundamental theorem of algebra, and parametric equations are also studied.

2204 **Pre-Calculus 1 and 2 Honors**
This one year course covers the topics covered in pre-calculus in a more in-depth approach than the pre-calculus course. Students will regularly deal with more challenging problems, including complex word problems. New topics are approached more rapidly and immediately adopted. Topics are studied in greater detail. Precise terminology is emphasized and not explained on tests. Minimal review of previously learned algebra, other topics or technology is provided. Students are expected to review on their own.

2176 **Calculus AP-BC**
This is a college level course in introductory calculus. The content follows the topics outlined by the College Board. In general, students in the AB course study topics in functions, graphs, limits, continuity, and techniques and applications of differential and integral calculus.

This is also a college level calculus course. Students in the BC course study all topics in the AB course in addition to functions defined in polar and parametric forms, sequences, series, more applications of derivatives, more techniques and application of antiderivatives as outlined by the College Board.

2167 **Probability and Statistics**
Students in this course will study descriptive statistics, organization of data, probability theory, sampling and other related topics.
This course satisfies the “C” requirement of three years of college preparatory mathematics for UC/CSU.

ELECTIVES:

5. Choose your additional classes from the courses listed below and/or from the Galileo Course Curriculum Table.

8063 **Hospitality & Tourism (AOHT 11th Grade)**
This academy focuses on hands-on view hotel management, customer service, sports entertainment, event planning, and culinary service. Please see Ms. Golata for information.

7230 **Choir**
Galileo has a choir. Come have fun singing in harmony and learning classical, jazz and pop songs. We'll develop your vocal ability.

7301 **Drama**
Have you ever thought of acting? Then this is the course for you. Students in this course will learn basic acting skills, how to work with an ensemble, play theater games and learn to appreciate theater. This is a highly active course which requires daily participation.

1146 **Creative Writing: Open to Juniors and Seniors**
As a class, we will examine short stories and poetry of famous American, European, and Latin writers to effectively grasp writing style, literary tools, and story elements toward theme. Such study will set the tone and foundation for students to write *their own* memoirs, poems, and short stories-modeling the strategies and methods of the writers we explore. Students will engage in various creative exercises in order to ignite a side of their writing capacity that is commonly overlooked in theory and analysis writing.

6220 **Beginning Photography**
Photograph motion, portraits, still life, and food. Explore photo composition elements (close-up, angles, levels, edges, etc.) to create visually exciting images. Learn lighting techniques you can use even at home. Create images so good they will astound your friends and enrage your enemies. The photography experience at Galileo is all digital with a professional grade photo studio space.

5370 **Advanced Photography**
Building on what was covered in Beginning Photography, we immerse ourselves in advanced photo composition techniques (horizon lines, converging lines, perspective, the Golden Mean) as we explore deeper into seeing and capturing the world photographically. Classroom assignments allow students to create projects based on real world photo assignments. Particular attention is given to what you can do with your photographs now that you have created them. Students must either have successfully completed beginning photography or have written permission from the photography teacher to take this course.

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- 1200 **Journalism**
Get your work published! Help create Galileo's newspaper. Have fun learning to photograph and write like a pro. Learn to use programs like: Photoshop, Indesign, Illustrator.
- 1211 **Yearbook**
Get your work published! Help create Galileo's yearbook. Have fun learning to photograph and write like a pro. Learn to use programs like: Photoshop, Indesign, Illustrator.
- 1660 **Psychology/Pre-Law**
Psychology (1 semester): What is fascinating about the study of ordinary behavior? Abnormal behavior? Why do humans have such diverse behavior? What is dysfunctional behavior? What causes stress? How do we handle adversity? What is psychosis? How do we deal with emotions? Trauma? What fosters psychopathic and destructive behavior? Gain a better understanding of individual behavior, adjustments, and discipline. This course is challenging and enjoyable.

Pre-Law (1 semester): This course is a combination of Criminal Law and Practical (Civil) Law. Criminal studies cover areas of crime against property and person. Civil explores areas of torts, liabilities, contracts, warranties, credit, consumerism, housing, family, marriage, juvenile rights, and more. Part of this course is taught by a third year law student from the USF Street Law Program.
- 6051 **Web Design: Computer Art 3-4 Digital Arts & Media Pathway**
Students build websites using Photoshop, HTML code, Cascading Style Sheets, Adobe Dreamweaver and Flash for animations. By the end of fall semester, each student will be able to launch a simple web portfolio. By the end of spring semester, students will produce more complex large-scale web projects. Aside from computer skills, this is a class in the principles of design and the power of communication. This is the first year of Galileo's Digital Arts & Media Pathway.
- 6314 **Video Production: Media Arts 3-4 Digital Arts & Media Pathway**
Students create their own videos with state-of-the-art equipment and software. Students use video cameras, microphones and video editing equipment; they learn storyboarding, digital storytelling, interviewing techniques, and film history. Students create short videos of school activities, produce Galileo's twice-weekly G-House TV broadcasts and make commercials for the broadcasts. This is a hands-on class that emphasizes communication, teamwork and project management.
PREREQUISITES: Web Design or Mr. Machtay's permission (Room 101).
- 2461 **Introduction to Computer Programming (AOIT 11th Grade)**
This course is an introduction to problem solving, engineering, and the design of computer programs. The overarching theme is the video game industry. No prior programming experience required. Course content and software includes Processing (Java), Adobe Flash ActionScript, game design, character design, team projects, and field trips to video game companies. Prerequisite: 10th Grade AOIT or permission to join AOIT; see Mr. Chun in Room 102.
- 9809 **AVID 3 (Advancement Via Individual Determination)**
Intensive academic support course designed to introduce students to a college preparatory curriculum including exposure to college campuses and guest speakers.