

GALILEO ACADEMY OF SCIENCE & TECHNOLOGY

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12TH 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. 1090 **English/European Literature 1 and 2**
This course will focus on British and European literature which reflects those western civilization values that have influenced American culture.
- 1091 **English/European Literature 1 and 2 Honors**
- 1104 **AP English Literature and Composition (Advanced Placement)**
Do you love to read and write? Then this is the course for you.
This academically rigorous and challenging course imitates college material and emphasizes writing concisely, thinking clearly and reading critically. A wide range of literature is covered: novel, novella, poetry, tragedy, comedy and other types of literature from the Ancient Greek to 20th Century time periods.
- 1098 **English/European Literature 1.6 and 2.6**
Specially designed academic instruction in English.
- 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. 1585 **U.S. Government AP (Advanced Placement)**
1590 **American Democracy/Economics**
American Democracy examines the United States Constitution, the Bill of Rights, national, state and local governments. Economics examines how societies decide to use limited resources to satisfy unlimited wants.
- 1611 **Economics Honors**
1594 **American Democracy/Economics .6**
Specially designed academic instruction in English.
- 1599 **American Democracy/Economics .8C**
Primary language support in Chinese.
- 1601 **American Democracy/Economics .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)

(OVER)

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)**

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

3240 **Emergency Medicine**

Year two of the *Health Academy* is designed for Seniors.

In the second year students focus on learning human anatomy, physiology, and emergency medicine.

This class is an engaging course that focuses on the principles of human anatomy, physiology and emergency medicine. Students learn to save lives from a paramedic. Earn your Emergency Medical Technician Certification and become immediately eligible for work.

Fulfills one year of UC-d lab life science requirement

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

3057 **Honors Chemistry 1 and 2**

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.

3073 **Conceptual Chemistry**

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/CSU-D lab physical science requirement

3075 **Environmental Science 1 and 2**

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.

(OVER)

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).

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 pre-calculus 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.

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.

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
Specially Designed Academic Instruction in English.

2167 **Probability & 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.

- 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.

ELECTIVES:

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

- 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.

12th Grade

- 8064 **Hospitality & Tourism 2 (AOHT 12th Grade)**
This capstone course teaches students about green and sustainable business practices in travel and tourism and how those practices are changing the travel and tourism industry. Students learn about the opportunities and challenges of conventional tourism, the environmental, economic and social impacts and the interrelationships of tourism, including transition to a greener tourism economy. Topics covered include an introduction to climate change, the environmental impact of tourism, green and sustainable business practices, and college and career opportunities in these fields. Students complete the course with a research paper on a green practice in travel and tourism, producing a green event and completing a service learning project related to a green practice.
- 2450 **AP Computer Science (AOIT 12th Grade)**
This course prepares students for the College Board Advanced Placement Computer Science A exam. Topics covered include Java, object-oriented programming, analysis of algorithms, arrays, searching, and sorting data. Students should expect to spend 3-6 hours per week outside of class working on programming projects and reading. Priority given to current AOIT students. Other interested students with a strong math background see Mr. Chun in Room 102 for permission to enroll.
- 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

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.

6314

Video Production: Media Arts 5-6 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: Media Arts 304 or Mr. Machtay's permission (Room 101).

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.

9807

AVID (Advancement Via Individual Determination) - Senior Seminar

Intensive academic support course designed to introduce students to a college preparatory curriculum including exposure to college campuses and guest speakers. See Ms. Choi-Dea in counseling if you have any questions.