



# GARDEN SCHOOL

Jackson Heights, New York

Richard Marotta, Ph. D., Headmaster

## HIGH SCHOOL COURSE DESCRIPTIONS 2016-2017

### **French IV**

This course is designed to prepare students perform at a higher level of proficiency than the previous years. It exposes students to more challenging works of literature by influential Francophone writers, and it further improves their use of grammar through writing, speaking, and aural exercises. Students are expected to use French at all times while in the classroom setting. Cultural aspects are analyzed through the readings.

### **Spanish IV**

This course is a thematic approach to Hispanic culture and language through the use of art, literature, music and video analysis, while exploring the most relevant differences between Hispanic culture and American culture. In addition, it exposes students to more challenging works of literature (e.g. essays, short stories, short novels) and further improves their use of grammar through writing, speaking and oral exercises.

### **French AP**

This course is the highest level of French taught at Garden. It is intended for students who wish to further develop their proficiency in the language. It reviews and improves the essential grammatical structures, and introduces students to classic and modern works of literature. French is used almost exclusively during class. At the end of the year, students are expected to take the AP examination.

### **Spanish AP**

The AP Spanish course is the culmination of the Spanish language studies at Garden School. It covers the equivalent of a third year college course in advanced Spanish writing and conversation through the use of classic and modern literary works. At the end of the school year, students are expected to take the AP Spanish examination, which entitles them to receive college credits.

### **Advanced Placement United States History**

A comprehensive study of the United States, from the Constitution to the modern day. This course is conceptually-based, with particular focus applied to writing, historiography and primary source examination.

### **United States History, non-Advanced Placement**

A chronological study of the United States from its foundation to the modern day, with emphasis placed on note-taking and the comprehension of historical context.

### **Political Philosophy**

A college-level course devoted to the study of the classic thinkers of history as regards the relationship between politics and the nature of man. Those studied include, but are not limited to, Plato, Aristotle, Karl Marx and Carl Rove.



## HIGH SCHOOL COURSE DESCRIPTIONS 2016-2017 (CONT.)

### **Revolution and Terrorism**

A study of classical revolution and terrorism, as adapted by those who use either (or both) in the modern day. Examining the methods, goals and ideology of revolutionaries and terrorists throughout history and today comprises the majority of course study.

### **Economics**

A study of the behavior of people regarding the use of money. The course is offered in two sections, one per semester, as follows: Microeconomics: A study of the forces of economics on a small scale, such as a small business or individual, and Macroeconomics: A study of economic forces on a large scale, i.e. decisions made by governments and conglomerates, and how the greater portion of society is affected by them.

### **Precalculus (11th Grade Honors; 12th Grade Regular)**

This course is designed to prepare students for calculus. After a review of intermediate algebra, the course proceeds into the study of functions and their graphs: linear functions, quadratic functions, polynomial functions, rational functions, exponential functions, logarithmic functions, and trigonometric functions. In addition, the conic sections, linear systems, matrices, and determinants are studied in depth. The honors section also examines polar coordinates and sequences and series.

Graphing technology is consistently incorporated throughout the precalculus course. The visualization and exploration capabilities of a graphing calculator encourage the student to actively participate in the learning process, to develop an intuitive understanding of the advanced math concepts, and to solve problems using actual data. A graphing calculator is used on a daily basis in the course. There is also an emphasis on both mathematical modeling of practical situations and problem-solving in preparation for advanced placement calculus. (Full Year: 1 credit)

### **Algebra II and Trigonometry (10th Grade Honors; 11th Grade Regular)**

Intermediate Algebra and Trigonometry presents the same topics as in Algebra I, but in significantly greater depth, with an emphasis on comprehension of the processes involved. Topics include advanced factoring, complex rational expressions, linear and quadratic equations and systems, introduction to functions, graphing first and second degree functions, word problems in one and two variables, radicals and irrational equations, complex numbers, trigonometry in the right triangle, trigonometric functions and their graphs, inverse trigonometric functions, and trigonometric equations.

The trigonometric portion of the course is presented at an early stage and is then carried along simultaneously with the content in algebra. (Full Year: 1 credit)



## HIGH SCHOOL COURSE DESCRIPTIONS 2016-2017 (CONT.)

### **AP Calculus (12th Grade)**

The Advanced Placement course in Calculus consists of a full year of work that is comparable to calculus courses in colleges and universities. Most students who take this course will seek college credit (through the AP test), college placement, or both.

AP Calculus (AB) is mainly concerned with developing students' understanding of the concepts of calculus and providing experience with its methods and applications. AP Calculus (BC), offered once every few years, is an extension of Calculus AB, with the addition of three extra topics: parametric, polar, and vector functions, improper integrals, and polynomial approximations and series. The AB syllabus includes functions, graphs and limits, including continuity; derivatives (derivative at a point, derivative as a function, the mean value theorem, higher-order derivatives); applications of derivatives (curve analysis, optimization, related rates, implicit differentiation, slope, velocity, acceleration, elementary differential equations); integrals (Riemann sums, properties); applications of integrals (areas, volumes, lengths of curves, average value of a function, distance/velocity/acceleration, solving separable differential equations, trapezoidal sums). The use of a graphing calculator in AP Calculus is considered an integral part of the course, and is required for every exam including the AP exam. (Full Year: 1 credit)

### **Web Design (11&12 Grades)**

Web Design is a full year course which introduces students in to concepts and practices in Web publishing with HTML, CSS (Cascading Style Sheets), and JavaScript with an extensive hands-on approach in the classroom. Good programming practices, such as indentation and the placement of comments before blocks of code, are encouraged from the very beginning of the course. Page design and layout, frames, and advanced text formatting and alignment are covered, as well as the gathering of information with forms. In addition, the creation of links with HTML and manipulation of such links with CSS and JavaScript are studied so as to make the pages dynamic and unique.

Lastly, students use the latest version of the Java Development Kit (jdk1.5.0\_06) in the MS-Dos environment so they must learn and use basic DOS commands as they compile and run Java applications using a class-centered approach. Students are also exposed to the NetBeans IDE5.0 environment as they also generate, compile, and run Java applications. The aforementioned material laid the foundation for vital object-oriented programming (OOP) concepts and Java fundamentals including data types, operators, program control statements, classes, objects, and methods. More advanced topics discussed include the I/O system, inheritance, exception handling, enumeration, and static import.

### **AP Biology (11th & 12th Grade)**

This is an elective for both juniors and seniors. Prerequisite: minimum grade of B in both Biology and Chemistry. This is an in depth course that deals with all aspects of living organisms. Extensive laboratory investigations are performed. The goal is to provide an opportunity for students to take a college-level course while still in high school.

The eight units covered in the course include: The Chemistry of Life; The Cell; The Gene; Mechanisms of Evolution; The Evolutionary History of Biological Diversity; Plants: Form and Function; Animals; Form and Function; Ecology. (Full Year: 1 credit)



## HIGH SCHOOL COURSE DESCRIPTIONS 2016-2017 (CONT.)

### **Physics (12th Grade)**

This course covers topics in Motion, Universal Gravitation, Momentum, Energy, Wave Mechanics, and Electricity. The course focuses on the theoretical analysis of physics matched with its mathematical applications. The students partake in different laboratories that help further their understanding of the information. (Full Year: 1 credit)

### **Forensic Science (11th & 12th Grade)**

Forensic science is the application of science to the law and encompasses various scientific disciplines. This course will introduce various methodologies and applications used in forensic investigations. Topics discussed include organic and inorganic chemical analyses of physical evidence, principles of serology and DNA analysis, ballistics, fingerprint analysis, drug analysis, and document analysis. The format of the course is mainly discussions with supporting lab work. (Fall semester, even years: ½ credit)

### **Engineering 1&2 (11th & 12th Grade)**

Introduction to Engineering is a one semester, project based course in which students will have the opportunity to practice authentic engineering skills. Students will work in teams to develop, build and test designs to solve various problems. Students will learn to prepare appropriate documentation for their designs and communicate the outcome of their projects.

### **English Electives**

- **AP English;** seniors only, B average required AND permission of the English Chair.

AP English is an intense study of literature undertaken through an analysis of texts and an understanding of the role of the various critical tradition.

We will read a variety of texts, including works by Euripides, Shakespeare, Dostoyevsky, Hemingway and other significant writers. Each work is studied in detail and then students write a paper analyzing a particular aspect of that text.

Our approach is to read literature from a critical viewpoint, including both the historical context as well as the varieties of textual theories. Our goal is to prepare students to take the AP Exam and to approach literary texts from a college level perspective.

- **Creative Writing.**
- **English Novel**
- **American Identity**

This course will explore the promise of American freedom, equality, and self-definition. Using texts and other media, the class will examine the gap between the American ideal and the lived experience.

Through class discussions, essays, creative writing, and other projects, students will grapple with the issues surrounding American identity.