

Online School for Girls Course Catalog 2010-2011

Full Year Courses

AP Psychology
AP Statistics
Environmental Science
AP Comp Science

Semester offerings:

First Semester (beginning in Sept)

Multivariable Calculus
Genetics
Global Issues
Art and Code

Second Semester (Beginning in January)

Differential Equations
Women in Art and Literature
US Government (with AP option)
Graphic Art

Art

Art and Code: An Introduction to Programming and Interactivity for Artists

Offered: First semester

Instructor: Elizabeth Perry, The Ellis School

Course Description:

Art and Code offers a chance to work with a new medium of expression for artists – the computer program. We will focus on learning Processing, a free computer programming language designed for artists and other non-programmers to create playful, original, beautiful or provocative interactive digital work.

Through a succession of creative exercises, students will master the elements of the Processing programming language. Using those elements, students will propose and create their own final art projects. A final project may be a web-based work, but it could also be a performance or installation piece.

This is not a course in how to use a ready-made computer application, but rather a course where students will learn to create their own computer-based tools for expression. The ideal participant is a student who loves visual and /or performing arts, who is patient and persistent with her own creative process, and who wants to experiment with a new medium.

Graphic Art

Offered: Second semester

Instructor: Donny Yankellow, St. Paul's School for Girls

Course Description:

In Graphic Art, students learn the basics of Adobe Photoshop and complete several projects throughout the semester in Photoshop. Each project introduces new skills while reinforcing the skills from previous projects. Skills covered include painting in Photoshop, manipulating images, merging images, and using type as a graphic element. Students will be introduced to selection tools, layers, masking, cloning, filters and blending options to apply effects, to their images, and more.

In addition to working in Photoshop, assignments will include research and brainstorming activities which will be completed online in the form of written work.

Students will have the opportunity to collaborate throughout the course through various critiques. Critiques will occur in forums where students will provide feedback to each other about their work. This will include work in progress and finished assignments. At the end of the semester students will collaborate in the creation of a student art show by creating an online gallery of their work.

This is an introductory art class and incorporates art concepts, typography, illustration, and portfolio development. Students will also use problem solving skills as they explore Photoshop and determine which techniques work best in which situations.

At the end of this course students will have the start of a Graphic Art portfolio.

Computer Science

AP Computer Science

Offered: Full-year course

Instructor: Kate Seyboth, Westover School

Prerequisite: must be either enrolled in or have completed Algebra I

Course Description:

This course introduces computer science concepts including basic program form, development of algorithms, data types, control structures, and object-oriented design using the Java programming language. The course culminates with the Advanced Placement Computer Science exam.

Art and Code: An Introduction to Programming and Interactivity for Artists

See description in ART

English

Women in Art and Literature: “Tell Me Your Diamonds”

Offered: Second semester

Instructors: Marsha Scherbel and Christopher Wilson, The Holton-Arms School

Prerequisite: Students must have completed or currently be enrolled in a secondary level U.S. History course.

Course description:

How do women tell their stories? “Tell me your diamonds,” requests the title character in Toni Morrison’s novel *Beloved*. How do women answer such calls to recount their pasts? How do they resist narratives that others have imposed on them? This course focuses on *Beloved*, which was recently named the most important work of fiction of the past twenty-five years, and explores the novel alongside thematically related examples of visual art. From paintings of heroic biblical women by seventeenth-century Italian artist Artemisia Gentileschi to Morrison’s portraits of former slaves, women look at the past, comment on the present and often instigate social change. They find meaning in past experiences, including painful ones, and in the process transmute memory into art. What wisdom or warning – what diamonds? – can they offer to today’s viewers and readers, especially female students?

Mathematics

Multivariable Calculus

Offered: First semester

Instructor: Jennifer Webster, The Harpeth Hall School

Prerequisite: AP Calculus BC

Course Description:

This course will cover some topics that are not part of the AP Calculus BC curriculum, such as calculating volumes by using shells, surfaces of revolution, and centers of mass and centroids, among others. We will also explore topics that are studied in a typical college-level third semester calculus course. These include vectors and vector-valued functions, differentiation in several variables, optimization in several variables, multiple integration, and line and surface integrals.

Differential Equations

Offered: Second semester

Instructor: Jennifer Webster, The Harpeth Hall School

Prerequisite: Multivariable Calculus

Course Description:

This course will provide an introduction to differential equations. Topics will include: solving first-order and simple higher-order equations with applications to various scientific fields (physics, chemistry, biology, etc.); solving linear differential equations and their applications; and Laplace transform methods.

AP Statistics

Offered: Full year course

Instructor: Phyllis Flenniken, St. Paul's School for Girls

Course Description:

This course is intended to help students develop strategies for collecting, organizing, analyzing, and drawing conclusions from data. Much of this knowledge will come through experiential activities that challenge students to design, administer, and tabulate results from surveys and experiments. The students will often work in small cooperative groups to explore problems and share ideas. Active participation, in the form of individual and group projects, peer review of student work, and discussion board conversations, will play a major role in the students' success in the course. Each student will be expected to learn how to articulate methodology, data description, and conclusions and to provide constructive comments on reports by classmates. Technology will be employed as a tool to help students solve statistical problems. Graphing calculators will be used regularly, along with other statistical software, to enhance the students' ability to visualize data distributions and calculate important numerical results. The students will learn that displaying data and calculating statistics are valuable tools only if the students can effectively and accurately draw meaningful conclusions about what the data tell us.

The class will necessarily be fast-paced in an effort to complete the entire curriculum covered on the AP Examination. However, the pace of the course will not undermine the inclusion of important activities that help students understand the value of statistics in their own lives – both now and in the future.

Assessments will include projects, homework, participation, short quizzes, and major tests that mirror the multiple-choice/free-response format of the AP Examination.

Science

Genetics

Offered: First semester

Instructor: Heather Mannella, Westover School

Prerequisite: High school level introductory Biology course

Course Description:

What makes us who we are? Is it our DNA? Our environment? How are the diseases and disorders that affect us connected to the genetic code inside each of our cells? Just because we can modify DNA, should we? Who do we approach a world in which the ability to manipulate DNA itself is now a possibility? In our rapidly advancing world of biotechnology and our increased understanding of the genetic code and how it functions, we have questions to consider that were not even a possibility 60 years ago before the discovery of DNA. This course will explore topics from the three main branches of genetic study: Transmission genetics (how traits are passed from one generation to the next), Molecular genetics (the structure, function and operation of the DNA molecule itself) and Population genetics (how traits are expressed in populations, and how those traits change over time). As a vehicle for our discussions we will look at a number of different medical topics ranging from genetic abnormalities to the study of cancer. In addition we will explore new and emerging research in the field and the social and ethical controversies and questions that often accompany these technological advances.

Environmental Science

Offered: Full year course

Instructor: Patricia Carver, The Holton-Arms School

Course Description:

An interdisciplinary approach is used in this year-long course on the major topics in environmental science. Ideas and information from the natural sciences, social sciences, and ethics will be used to examine the interrelationships of the natural world and the human population. Students will investigate the causes and challenges of environmental issues that confront the human species as well as solutions toward a more sustainable society.

Social Science

American Government (AP option available)

Offered: Second semester

Instructor: David Huston, Laurel School

Co-requisite: Students must have completed or currently taking a course in U.S. History from 1600 to the present.

Course Description:

American Government is a study of justice and power, as these two values are pursued within the context of contemporary American society and politics. This course investigates the historical and ideological roots of American government, its fundamental institutions and practices, and the political and social landscape within which they operate. Through a factual study of American government and a philosophical reflection on the nation's founding documents and analyses—such as the Declaration of Independence, the Philadelphia Convention debates, the U.S. Constitution, the *Federalist Papers*, and the astute insights of Alexis de Tocqueville's *Democracy in America*, as well as numerous Supreme Court decisions, the Lincoln-Douglas debates, and many reflective essays on American politics—students will gain a deep understanding and appreciation for the aspirations, strengths and limitations of the American system of government.

Student work will include readings from *Think: American Government* and a series of primary sources; weekly reflections on articles from the current press, including The New York Times, The Wall Street Journal, The Economist, and other journals of opinion. Students will view and comment on several video series developed for college courses on American government; participate in on-line discussion boards; keep a reflective journal on issues of the day; research and construct a wiki-based web site on a public policy issue; and write opposing speeches on current political controversies.

An AP option is available for this course. While the factual content and activities will remain the same, students who wish to prepare for the AP American Government exam will have the option of practicing AP-style multiple choice questions and writing and receiving constructive feedback on AP-style essay questions.

Global Issues

Offered: first semester

Instructor: Carolyn Thompson, The Louise McGehee School

Course Description:

"All of us might wish at times that we lived in a more tranquil world, but we don't. And if our times are difficult and perplexing, so are they challenging and filled with opportunity." Robert Kennedy

This course is designed to provide students with a framework to better understand the world in which they reside and to help them develop a more global perspective. Some problems cross national boundaries to become global issues. Population growth and the movement of peoples, globalization, environmental challenges, and human rights are examples of issues that need to be addressed by all nations. Students will be challenged to put these issues into a broader context and to develop informed opinions about current policy decisions that will affect them in the future. Using a variety of resources---including an excellent online database--- students will investigate how certain issues are addressed (or go unaddressed) by nation states, international organizations, and non-governmental organizations. They will examine public policy debates and weigh the relative merits of different proposals. They will also be asked to reflect on how these issues affect them personally and to consider how they can make a difference as global citizens. Finally they will be asked to present an original proposal to address a pressing global issue within their school or community. The theme of this proposal will be thinking globally and acting locally. This course will place a heavy emphasis on communication, technology, and service. Students will concentrate on developing the skills, knowledge, and confidence to construct and deliver sound arguments, to take part in vigorous online discussions, and to hold formal debates. They will also make extensive use of technology to access and analyze information and to present their knowledge and understanding of the world to a broader audience within their school and community.

AP Psychology

Offered: Full year course

Instructor: Chad Sopata and Jennifer Adams, The Harpeth Hall School

Course Description:

The AP course in Psychology is designed to introduce students to the systematic and scientific study of the behavior and mental processes of human beings and other animals. In this course, students will be presented with the psychological facts, principles and phenomena contained within the major branches of psychology. A balanced examination of the following content areas: Biological Bases of Behavior, Sensation and Perception, States of Consciousness, Learning, Cognition, Motivation and Emotion, Developmental Psychology, Personality, Testing and Individual Differences, Abnormal Psychology, Treatment of Psychological Disorders and Social Psychology will provide the student with a thorough understanding of the many subfields contained within psychology and the connections between them. In addition, students will also be exposed to the history, methodology and ethical practices associated with psychological research. Upon completion of this course students will recognize the significance of psychology and its practical applications upon the world around them.