

2011–2012

Advanced Placement**



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Advanced Placement Catalog

AP Art History

This course is designed to broaden students' knowledge of architecture, sculpture, painting, and other art forms within various historical and cultural contexts. In AP Art History, students identify and classify artworks from prehistory through the 20th century, formally analyze artworks by placing them in the historical context within which they were created, consider the visual traditions of the cultures that created artworks, and understand interdisciplinary and cultural influences on works of art. In addition to visual analysis, the course considers issues such as patronage, gender, and the functions and effects of artworks. This course uses a textbook. Prior art training is not necessary for enrollment.

AP Biology

This comprehensive general biology course covers biochemistry, molecular biology, genetics, mechanisms of evolution, the evolutionary history of biological diversity, plant and animal form and function, and ecology. The textbook used, range and depth of topics covered, concepts presented, topics discussed, and labs completed in this course are designed to be equivalent to a college-level introductory biology course that biology majors or premedical students would take during their first year. In AP Biology, students acquire investigative and laboratory skills needed for the study of biology and are equipped and prepared for the Advanced Placement Biology examination. Chemistry is a prerequisite for enrollment in AP Biology.

AP Calculus AB

AP Calculus AB is a college-level course that introduces limits, differentiation, and integration of functions. Students find and evaluate finite and infinite limits graphically, numerically, and analytically. They find derivatives using a variety of methods, including the chain rule and implicit differentiation. They use the first derivative test and the second derivative test to analyze and sketch functions. Each unit of this course includes exam-preparation content for the Advanced Placement Calculus AB examination. Students enrolling in the AP Calculus AB course must have knowledge of algebra, geometry, trigonometry, analytic geometry, and elementary functions. AP Calculus AB uses a textbook, and a graphing calculator is required.

AP Chemistry

This two-semester course is equivalent to a full-year introductory college course in general chemistry. Topics presented in AP Chemistry include components of matter, stoichiometry of formulas and equations, chemical reactions, kinetic-molecular theory, thermochemistry, electron configuration, chemical bonding, intermolecular forces, properties of mixtures, periodic patterns, organic compounds, equilibrium, and thermodynamics. Students learn fundamental analytical skills to logically assess and solve chemical problems. They develop the skills necessary to arrive at conclusions based on informed judgment, using mathematical formulation principles, chemical calculation, and laboratory experiments. Students learn to present evidence in clear and persuasive essays and prepare for the Advanced Placement Chemistry exam. The course uses a textbook, and a chemistry lab kit is required.

AP Computer Science A

AP Computer Science A is the equivalent of a first-semester, college-level course in computer science. The course emphasizes object-oriented programming methodology with a concentration on problem solving and algorithm development. It also includes the study of data structures, design, and abstraction. Students enrolling in AP Computer Science A should have knowledge of mathematics at the Algebra II level as well as some previous programming experience, a basic understanding of networks, and knowledge of the responsible use of computer systems (including system reliability, privacy, legal issues, intellectual property, and the social and ethical ramifications of computer use). To take this course, students need regular access to a computer system with recent technology.

AP English Language

This course prepares students for the Advanced Placement exam in English Language and Composition. The literary component of the course covers a range of genres, including nonfiction, fiction, drama, and poetry. While analyzing these works, students consider style (a language-based approach to exploring

Advanced Placement

meaning in a piece of writing through tone, diction, and syntax) and rhetoric (the examination of the argument and structure of a piece of writing by considering aspects of the author's credibility, irony, and use of logic). Writing assignments cover both expository and argumentative aspects of writing. Prior coursework in English through the high school sophomore level is required for enrollment in AP English Language.

AP English Literature

AP English Literature prepares students for the Advanced Placement exam in English Literature and Composition. In this course, students acquire the reading and critical thinking skills necessary to understand challenging material, analyze that material to deduce meaning, and apply what they learn. They also acquire the composition skills needed to communicate their understanding effectively to a variety of audiences. Students read and analyze classic works of literature that contain literary qualities that merit study and provoke deep thought. Students also read modern and contemporary works as they examine a variety of literary genres, including plays, short stories, poetry, essays, and novels. Prior coursework in English through the high school junior level is required for enrollment in this course.

AP Environmental Science

Students examine the natural world's interrelationships in AP Environmental Science. During this two-semester course, they identify and analyze environmental problems and their effects and evaluate the effectiveness of proposed solutions. They learn to think like environmental scientists as they make predictions based on observation, write hypotheses, design and complete field studies and experiments, and reach conclusions based on the analysis of resulting data. Students apply the concepts of environmental science to their everyday experiences, current events, and issues in science, politics, and society. The course provides opportunities for guided inquiry and student-centered learning that build critical thinking skills. Prerequisites for enrollment include two years of prior coursework in laboratory sciences (Biology, Chemistry, Earth Science, or Physics).

AP European History

This course surveys the social, economic, cultural, intellectual, political, and diplomatic history of modern Europe and its place in the history of the world—from the fall of Constantinople to the fall of the Berlin Wall and collapse of the Soviet Union. The course is equivalent to a college freshman or sophomore modern European history course. Students develop an understanding of the major periods, ideas, movements, trends, and themes that characterize European history from approximately 1450 to the present. They also develop the ability to analyze historical evidence and express their understanding and analysis in writing. This course prepares students for the Advanced Placement European History exam.

AP French Language

In AP French Language, students apply their knowledge of French grammar and vocabulary and their listening, reading, speaking, and writing skills to a variety of real-world contexts. They learn to speak fluently and accurately, write complex compositions, and comprehend native speakers' conversation. In addition, they explore French culture in both contemporary and historical contexts to develop an appreciation of cultural products, practices, and perspectives. The equivalent of a college-level language course, this course is taught in French and prepares students for the Advanced Placement exam as well as for further study of French language, culture, and literature. The successful completion of French III is a prerequisite for enrollment in this course.

AP Macroeconomics*

Macroeconomics is the study of how economic systems work as a whole. In this one-semester course, students learn how the economy is measured by indicators such as gross domestic product (GDP), among others. They examine concepts such as inflation, unemployment, world trade patterns, and the role of the Federal Reserve Bank. Students engage in decision making to create an environment in which high employment rates and higher living standards can be achieved by using fiscal and monetary policy. Topics presented in the course include measuring economic performance; aggregate demand and aggregate supply; money, monetary policy and economic stability; monetary and fiscal policy; and international economics. This course prepares students for the AP Macroeconomics exam.

AP Microeconomics*

Microeconomics is the study of economics on the level of individual areas of activity and how individuals make choices with limited resources. In AP Microeconomics, students examine concepts such as supply and demand, factors of production, roles of labor and management, the relationship between the environment and the economy, and the effect of government on individual decision making. Students study the stock market as an investment option and trace various stocks throughout the semester, using

Advanced Placement

the Wall Street Journal and the Internet as resources. Topics presented include the nature and functions of product markets, theory of the firm, factor markets, and role of government. This course prepares students for the AP Microeconomics exam.

AP Physics B

AP Physics B surveys the algebra-based major areas of physics—mechanics, fluids, waves, optics, electricity, magnetism, and modern physics (atomic and nuclear). Students learn to think like scientists: they make predictions based on observation, write hypotheses, design and complete experiments, and reach conclusions based on the analysis of resulting data. They apply the concepts of physics to their everyday experiences, current events, and issues in science and engineering. AP Physics B provides opportunities for guided inquiry and student-centered learning that build critical thinking skills. This course prepares students for the Advanced Placement Physics B exam. Prerequisites include Algebra II and Trigonometry; one year of Physics is highly recommended.

AP Psychology*

This one-semester course surveys the major topics in the field of psychology as well as terminology, methodology, and the historical and current understanding of human behavior and thought processes. Concepts, terminology, and research findings are presented at the level of an introductory college psychology course. Students learn how psychologists analyze human experiences and apply what they have learned. Organized in seven units, the course presents the following topics: introduction to psychology, the biological basis of behavior, human development and awareness, human cognition, human motivation and emotion, human interaction, and course review. The course prepares students to take the Advanced Placement Psychology exam. Prior coursework in Biology is suggested. This course uses a textbook.

AP Spanish Language

AP Spanish Language students practice their Spanish speaking, listening, reading, and writing skills. They study vocabulary and grammar and then apply what they've learned in extensive written and spoken exercises. Students develop an expansive vocabulary and a solid knowledge of all verb forms and tenses. Culture is an important aspect of the course; students explore culture in both contemporary and historical contexts to develop an appreciation of cultural products, practices, and perspectives. The equivalent of a college-level language course, AP Spanish Language prepares students for the Advanced Placement exam as well as for further study of Spanish language, culture, and literature. The successful completion of Spanish III is required for enrollment in this course.

AP Statistics

Statistics concerns the collection, organization, and interpretation of data. In AP Statistics, students interpret the output generated by statistical software programs. This two-semester course presents the following topics, among others: organizing data, examining relationships, producing data, probability, random variables, binomial and geometric distributions, sampling distributions, and inference. This course prepares students to take the Advanced Placement Statistics exam. Students who enroll in AP Statistics must have access to a computer equipped with software capable of doing data analysis. In addition, one of the following Texas Instruments calculators is required: TI-83, TI-83+, TI-84, TI-84+, or TI-89. Prerequisites for AP Statistics include Algebra I and Algebra II.

AP U.S. Government*

This course presents an analytic perspective on American politics, covering the ideals, institutions, and processes that direct the daily operations of government and shape public policy. In AP U.S. Government, students examine the constitutional structure of government, participatory politics, the formal institutions of power, and the extra-constitutional influences on government institutions. They interpret and analyze the political landscape to develop an understanding of the strengths and weaknesses of the U.S. system of government. This one-semester course addresses the following topics, among others: American political culture, the Constitution, federalism, civil liberties, civil rights, public opinion, media, political parties, campaigns and elections, interest groups, Congress, the presidency, the federal bureaucracy, and the federal courts.

AP U.S. History

AP U.S. History focuses on the development of analytical skills to enable students to critically interpret the nation's history. In this course, students assess historical primary and secondary sources, weighing the evidence presented, to arrive at informed conclusions. They learn to think like historians as they evaluate sources and interpretations, develop thesis statements, support interpretations with evidence, and communicate their conclusions. In the process, they gain an appreciation for how historic events have shaped modern political, social, cultural, and economic life. The course provides opportunities for

Advanced Placement

guided inquiry and student-centered learning that build critical thinking skills. Prior coursework in Social Studies or History is a prerequisite for enrollment in this course.

AP World History

AP World History covers the history of the world from 600 CE to the present and includes an introduction unit on the period from 8,000 BCE to 600 CE. The course emphasizes patterns of change and the connections between the various world cultures throughout the time period studied in the course. Students gain an understanding of the global experiences of humanity and can apply that knowledge to their growth and development as world citizens. This two-semester course prepares students to take the AP World History exam. It also provides them with an understanding of why the world developed the way it did. This course uses a textbook.

* = .5 credit course

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