

SOCIAL STUDIES

WORLD HISTORY

1.0 Credit

World History is a required course for sophomores concerning the nations and peoples of the world. Included with the history and geography are cultural development, political and economic systems and social structures. The student will be challenged to think critically about international relations, human commonalities and differences and their impact on the student's own life.

We will begin this course with an introduction into history, geography, and a little bit of anthropology to give you a framework for understanding the course as a whole. We will then begin with the four primary ancient civilizations and work our way through present day. This course is designed to give you an over view of what we know about World History and encourage you to think critically about the development of history as it relates to our present day cultures and situations. Think of this course as the greatest epic ever written – one long story about the development, impact, and innovations of humans.

Each virtual class you take will be slightly different from the others. Whether you are a seasoned virtual student or new to the program, it is very important to your success to read through this description. There will be helpful hints about reading, assignments, and assessments.

AMERICAN HISTORY

1.0 Credit

The primary content emphasis for this course pertains to the study of United States history from Reconstruction to the present day. Students will be exposed to the historical, geographic, political, economic, and sociological events which influenced the development of the United States

ANTHROPOLOGY

1.0 Credit

Students acquire an understanding of the differences and similarities, both biological and cultural, in human populations. Students recognize the characteristics that define their culture and gain an appreciation for the culture of others. The content includes, but not be limited to, the following: human biological and cultural origins -adaptation to the physical environment -diversity of human behavior -evolution of social and cultural institutions -patterns of language development -family and kinship relationships -effects of change on such cultural institutions as the arts, education, religion and law.

Within each chapter are several pages that cover topics such as the ability to identify and describe the following anthropology sub-fields: physical and cultural anthropology, linguistics, archaeology, and specialized sub-fields. Because so much of the material builds upon prior knowledge, it is required that you go through the course in the order it is written.

Virtual labs and/or simple at home labs are conducted for most chapters. Lab reports must be submitted, organizing data and answering questions for the experiment.

SOCIOLOGY

0.5 Credit

Sociology is an elective course designed to familiarize students with various cultures and the problems resulting from people living in groups. This course covers such topics as culture, sub-cultures, social institutions, collective behavior, social change, social deviation, the family,

and the resulting impact on world history. So that students can clearly see the relationship between cause and effect in historical events, students should have the opportunity to review those fundamental ideas and events which occurred before the end of Reconstruction.

Students in American History are given an opportunity to:

- 1.) Gain a basic knowledge of events and facts of National and State History from earliest cultures to the present,
- 2.) Become familiar with the literature of American History,
- 3.) Develop social studies skills such as map and graph interpretation,
- 4.) Develop skills in interpretation and analysis of both primary and secondary documents or sources,
- 5.) Develop historical writing skills.

AMERICAN GOVERNMENT

0.5 Credit

This course is designed to provide students with a basic knowledge of the purpose, structure, and operation of the national and state governmental systems. The primary content of study is the Federal system and its underlying principles as they are related on National, State, and local levels.

The Government course is a thought-provoking exploration of American Government and Politics. We will cover such topics as the Constitution, civil rights, interest groups, politics, voting, Congress, the Presidency, the Judiciary, laws, public policies, state & local government, and current events.

religion, racial and ethnic minorities, poverty, and crime. The latter portion of this course deals specifically with the pressing problems of our society, their causes, and possible solutions.

Introduction to Sociology presents basic concepts and theories covering many areas of contemporary sociology. Topics explored in this class include sociology as science, culture, socialization, social groups, social organization, deviance, crime, class, race and ethnicity, gender, family, social change (with a focus on international development), and population.

PSYCHOLOGY

0.5 Credit

This course focuses on the study of human behavior. As an introduction to the field of psychology, this course includes consideration of psychological principles, terminology, major theories, careers, methods of experimentation, and practical applications. Special topics include personality development, problem solving, group dynamics, and motivation.

1. Describe – The first goal is to observe behavior and describe, often in minute detail, what was observed as objectively as possible

2. Explain – While descriptions come from observable data, psychologists must go beyond what is obvious and explain their observations. In other words, why did the subject do what he or she did?

3. Predict – Once we know what happens, and why it happens, we can begin to speculate what will happen in the future. There's an old saying, which very often holds true: "the best predictor of

ECONOMICS

0.5 Credit

This course is designed to provide the student with a basic understanding of the important relationships of economics to our social and political problems. The course emphasizes the philosophy, development, and operation of our American economic system and its important influence upon the individual and society.

Interest and concern with economic issues top virtually every public opinion poll, but Gallup polls show an appalling lack of understanding of underlying economic concepts. The lack of economic literacy isn't surprising. Seven out of ten adults in a recent survey stated that they had never had economics instruction in high school. Yet, of high school students interviewed in the survey, half reported taking steps in the previous six months to learn more about how our economy works. In addition, virtually all of those interviewed thought more economics ought to be taught in the nation's schools. The National Council for the Social Studies recommends that all high school students take a course in economics before graduation. Nearly half of the states have just such a requirement. The new state standards for high school graduation includes testing on knowledge and skills in economics.

future behavior is past behavior."

4. Control – Once we know what happens, why it happens and what is likely to happen in the future, we can exert control over it. In other words, if we know you choose abusive partners because your father was abusive, we can assume you will choose another abusive partner, and can therefore intervene to change this negative behavior.

5. Improve – Not only do psychologists attempt to control behavior, they want to do so in a positive manner, they want to improve a person's life, not make it worse. This is not always the case, but it should always be the intention.

WORLD CULTURAL GEOGRAPHY

1.0 Credit

World Cultural Geography encompasses both the physical and cultural aspects of the discipline. Early emphasis is placed on the development and appreciation of physical geographic knowledge including meteorology, geomorphology and cartography. These skills having been mastered, a cultural approach to the world's various ethnic regions is addressed during the remainder of the year. Elements including political ideologies, religious beliefs, and unique cultural practices, as well as current situations of the world's major ethnic regions, are discussed.

At the end of the course the student should have an understanding of the nations of the world, their location, economies, and major geographic features.

This economics course has two primary objectives. First of all, the class is designed to provide students with an overview of business, finance, banking, investment, government's role in the economic system, labor-management relations, foreign trade, income inequality, and related fields. The knowledge and skills acquired will help the student make career decisions and make wise choices for further study at a college or vocational school. Students will gain insights into the advantages, disadvantages, and strategies of starting a business of one's own.

The second major objective of the course is to provide each student with the knowledge and skills to do very well in any college or vocational school economics course. At least two courses in economics are required for most business majors and a host of non-business majors.

The course is appealing to students who are interested in history, math, or contemporary issues. The course is designed for all students to be successful. For individuals wishing to prepare for the advanced placement exam, additional readings and/or assignments will be provided at the student's option.

AP WORLD HISTORY

1.0 Credit

The purpose of the AP World History course is to develop greater understanding of the evolution of global processes and contacts in different types of human societies. This understanding is advanced through a combination of selective factual

AP U.S. GOVERNMENT AND POLITICS

1.0 Credit

The AP United States Government and Politics course is designed to provide the student with an experience equivalent to a one-semester college introductory course. Students will be expected to

move beyond factual recall into critical analysis of the creation, function, and process of government. As stated in the College Board 2010 course description, this course will give students an analytical perspective on government and politics in the United States. This course includes both the study of general concepts used to interpret U.S. government and politics and the analysis of specific examples. It also requires familiarity with the various institutions, groups, beliefs, and ideas that constitute U.S. government and politics . . . students should become acquainted with the variety of theoretical perspectives and explanations for various behaviors and outcomes.

The AP Government & Politics: United States course provides an analytical perspective on government and politics in the United States. This course involves both the study of general concepts used to interpret U.S. politics and the analysis of specific case studies. It also requires familiarity with the various institutions, groups, beliefs, and ideas that constitute U.S. political reality.

AP U.S. HISTORY

1.0 Credit

This course is designed to provide students with the analytic skills and factual knowledge necessary to deal critically with the problems and materials in U.S. history. The program prepares students for intermediate and advanced college

knowledge and appropriate analytical skills. The course highlights the nature of changes in global frameworks and their causes and consequences, as well as comparisons among major societies. It emphasizes relevant factual knowledge, leading interpretive issues, and skills in analyzing types of historical evidence.

The primary intent of the AP World History course is to teach the history of the world from a truly global stance rather than from the dominant

perspective of Western civilization. This approach therefore places emphasis on worldwide historical processes and connections among the whole gamut of human societies. In order to achieve a comprehensive understanding of these events, students need both factual knowledge and the ability to critically assess such information. This course helps them on both fronts, teaching the historical facts in the context of how progressive changes--environmental, social, scientific, and political--influenced the various societies they touched, as well as how these groups interacted with each other. Students are exposed to many primary sources in an effort to show them how historical analysis works and how they can proceed to make their own informed interpretations of world events, both past and present. Significantly, the course is organized by five defining time periods, not by geographical areas. This concept of "periodization" is a vehicle that facilitates seeing both the continuities and changes over time that form the framework for understanding world history.

courses by making demands upon them equivalent to those made by full-year introductory college courses. Students should learn to assess historical materials—their relevance to a given interpretive problem, reliability, and importance—and to weigh the evidence and interpretations presented in historical scholarship.

AP United States History is designed to prepare students for the rigor of scholarship and writing expected in college-level courses. Students study

history as a series of interconnected events rather than as isolated dates, learning to critically analyze the cause and effect relationships of those events. As students progress through the course, they learn to find and assess primary documents as well as secondary sources. Finally, students learn to incorporate outside sources into persuasive essays that demonstrate logical reasoning and present evidence to support the author's conclusions.

FOREIGN LANGUAGE

SPANISH I

1.0 Credit

Spanish 1 focuses on the present and the present progressive tenses, a large number of vocabulary words need to be learned and mastered since all of that will serve as a foundation for newer structures and further courses. Students will need to learn basic pronunciation rules, whatever grammar is necessary to create basic sentences and understand them, and acquire enough vocabulary to produce communicative sentences. Many useful pattern phrases will be practiced in this course those will serve as patterns that the students can use to create their own original phrases. Progressively all the patterns should build an ability to understand read, write, listen and speak simple basic Spanish. Students will find built within the pages of the course cultural vignettes of the wonders found in the Spanish world.

Students develop the ability to communicate about themselves and their immediate environment using simple sentences containing basic grammatical structures. The language-learning process integrates basic aspects of the geography, customs, and culture(s) of the target language countries.

SPANISH II

1.0 Credit

Spanish 2 focuses on the past, future and compound tenses, vocabulary usage and contextual comprehension is essential. This course builds up on fundamentals learned and mastered in Spanish I. The same emphasis that Spanish I had in pronunciation, grammar, vocabulary, useful phrases and the ability to understand read, write, listen and speak simple Spanish will be continued in this course.

FRENCH I

1.0 Credit

Students will learn to read, write, speak, and understand spoken French. A developmental approach to the acquisition of essential vocabulary will build upon different themes at each level. The main language used in the class is French. In some stages a bilingual approach is used to explain grammar or to introduce cultural concepts especially at the early levels. It is most important to note that the target language is used extensively and it is the student's responsibility to work with the teacher to master this essential oral component.

Within each chapter are many pages that cover topics such as grammar, vocabulary, culture, and conversation.

FRENCH II

1.0 Credit

At level two, students will better develop their listening and speaking skills and increase vocabulary and develop reading comprehension and writing skills. Work will be done in class to improve students' pronunciation and intonation. Upon completion of level two, students will be able to speak and write about their lives in simple past and future tenses. They will read and react independently in various contexts to selections at an appropriate level. Further elements of culture are examined.

Also, this course will continue with the cultural exposure to wonders found in Spanish world. Students continue to develop proficiency in all four language skills: listening, speaking, reading, and writing with emphasis on the ability to communicate orally. They learn to function in real-life situations using more complex sentences and grammatical structures. They read material based on familiar topics and write short, directed compositions. They learn about the family structure, school life, and holidays of the target language countries.

SPANISH III

1.0 Credit

Spanish 3 focuses on the past, future and compound tenses, vocabulary usage and contextual comprehension is essential. This course builds up on fundamentals learned and master in Spanish I. The same emphasis that Spanish I and 2 had in pronunciation, grammar, vocabulary, useful phrases and the ability to understand read, write, listen and speak simple Spanish will be continue in this course. Also, this course will continue and further explore the cultural exposure to the wonders found in the Spanish world.

Course Objectives. This course stresses the usage of appropriate Spanish and enables the student in the following areas:

- a) To further develop speaking and listening skills learned in Spanish I and II.
- b) To further build writing using appropriate Spanish grammar(different verb tenses, adjectives, nouns, adverbs, etc.) at a basic/intermediate level in variety of new settings.
- c) To further build reading and comprehension skills of elementary/intermediate Spanish.
- d) To continue the expose to the Spanish cultural started in Spanish I and Spanish II.

After completing the course, students will be able to:

- Engage in conversations, provide and obtain information, express feelings and emotions, and exchange opinions.
- Understand and interpret written and spoken Spanish on a variety of topics.
- Present information, concepts, and ideas to an audience of listeners or readers on a variety of topics.
- Demonstrate an understanding of the practices and perspectives of the Spanish and Hispanic cultures, and make comparisons between these cultures and your own.
- Reinforce and further your knowledge of other disciplines (math, science, art, etc.) through the use of Spanish.

Show evidence of becoming a life-long learner by using Spanish for your personal enjoyment and enrichment.

SCIENCE

PHYSICAL SCIENCE

1.0 Credit

Physical science is a first year science class at this school. Physical science is the study of the physical world around you. Physical science can be broken up into two branches, chemistry and physics.

- Chemistry - the study of the structure and properties of matter.
- Physics - the study of the relationships between matter and energy.

The class provides an introduction into basic chemistry and basic physics. Within each chapter are several pages that cover topics such as matter, chemical reactions, solutions, motion, forces, and electromagnetism.

Virtual labs and/or simple at home labs are conducted for most chapters. Lab reports must be submitted, organizing data and answering questions for the experiment.

EARTH SPACE SCIENCE

1.0 Credit

The Earth and Space Science course is a course focusing on the study of space, geologic structures and forces, the waters on our planet, and the atmospheric forces that shape our world. Students will explore the Earth's spheres including the geosphere, hydrosphere, cryosphere, atmosphere, and the cycles of the Earth such as the water and carbon cycle. Students will learn about scientific inquiry, geologic time, space exploration, the solar system, and the universe. Upon completion of the course, students will be sensitized to various moral and environmental issues being brought to the fore by research of the universe and other areas of earth and space

science research. They will be provided with tools with which to make educated decisions regarding these new technologies and developments.

Students will have a clear understanding of the dynamic forces at work in the world around them, becoming better caretakers of our planet, Earth.

CHEMISTRY

1.0 Credit

Chemistry is the study of the structure and composition of matter that make up living things and their environment. Chemistry also deals with the study of the changes of matter and the mechanisms by which changes occur. This course is recommended for college-bound students. This class cover topics such as matter, chemical reactions, solutions, and nuclear chemistry. Virtual labs and/or simple at home labs are conducted for most chapters. Lab reports must be submitted, organizing data and answering questions for the experiment.

ANATOMY & PHYSIOLOGY

1.0 Credit

Anatomy/Physiology is a study of the structure and function of the human body. This course is preparation for advanced biological studies, biomedical nursing, and other science based careers. Laboratory experiences and text based activities provide student learning in the following topics: the major body systems; how the body systems work together to provide homeostasis; body functions in the healthy and diseased states; blood typing; muscle action; cranial nerve functioning; and bioethics. This course fulfills the graduation requirements for one elective unit of life science for the advanced academic diploma or the standard diploma.

This course is designed for those students who have taken biology and who wish to further their

study of biology. The student will study the

structure and function of the various cells, tissues, and integrated systems of the body. The course is designed to lay the groundwork then move into various human systems.

BIOLOGY

1.0 Credit

The Biology course incorporates new perspectives and understanding across major subdisciplines of biology. Genetics, cell biology, development, behavior and immunology are some of the areas covered. The concept of evolution is seen as the central organizing theme of biology. The focus of the course is on molecular biology. As an introductory course in biology, students are prepared for college.

As an introductory course in biology, students are prepared for college and advanced placement courses. Students will be sensitized to various moral and environmental issues being brought to the fore by research in bioengineering and other areas of biological research. They will be provided with tools with which to make educated decisions regarding these new technologies and developments.

PHYSICS

1.0 Credit

Applied Physics/Technology is a high school course in applied science for vocational-technical and college-bound students. The material studied shows how technical concepts can be analyzed and applied to equipment and devices in mechanical, fluid, electrical, and thermal energy systems. The course is designed for students to explore and apply the principles of technology in a classroom setting with hands-on laboratory activities. Within each chapter are several pages that cover topics such as motion, forces, electricity, magnetism, waves, and quantum physics

ENVIRONMENTAL SCIENCE

1.0 Credit

This is an introductory course for students who wish to study topics relating to the environment, its resources, quality and ethical issues. Environmental science is the study of the natural sciences in an interdisciplinary context that always includes consideration of people and how they have influenced various systems around us. It includes many aspects of biology, earth and atmospheric sciences, fundamental principles of chemistry and physics, human population dynamics, and an appreciation for the Earth and its natural resources. Within each chapter are several pages that cover topics such as energy and cycling of matter, stability and change in ecosystems, and human activities and technology on ecosystems.

ZOOLOGY

1.0 Credit

The course gives an introduction to zoology, with particular emphasis on the morphology and systematic of both vertebrates and invertebrates. In addition, the students should acquire basic knowledge in ethology, evolution, and human ecology (including an introduction to the biosphere and bio-diversity).

Zoology is a course that will survey the nine major phyla of the Kingdom *Animalia*. Zoology is the study of animal life. Zoologists research everything they think to ask about animals, including their anatomy and interrelationships,

their physiology and genetics, and their distributions and habitats. Human beings have

been zoologists for as long as there have been human beings. As humans, we are intricately tied to animal life - we've depended on many of them for food, work, and friendship throughout our evolution and history....not to mention that we ARE animals!

ASTRONOMY

1.0 Credit

The purpose of this course is to enable students to develop and apply knowledge of the universe and compare the conditions, properties, and motions of bodies in space. Emphasis shall be placed on concepts basic to Earth, including materials, processes, history, and the environment.

This course introduces you to the composition and structure of the universe. Astronomy is the scientific study of the contents of the entire Universe. This course will provide the student with a study of the universe and the conditions, properties, and motions of bodies in space. The content includes, but is not limited to, historical astronomy, astronomical instruments, the celestial sphere, the solar system, the earth as a system in space, the earth/moon system, the sun as a star, and stars.

AP CHEMISTRY COURSE

1.0 Credit

This is designed to provide students with a learning experience equivalent to that of a one-year general chemistry college course. Our AP Chemistry course include those topics regularly covered in a typical general chemistry college course, and differ from the usual first high school course in chemistry in respect to the kind of textbook(s) used, the range and depth of topics covered, the emphasis on chemical calculations and the mathematical formulation of principles, the nature and variety of laboratory work done by students, and the time and effort required of students.

Schools' AP Chemistry courses are typically designed to be taken by students after the completion of a first course in high school chemistry and a second-year algebra course. Students are encouraged to keep copies of their laboratory work for use in determining college credit or placement.

MATHEMATICS

ALGEBRA I

1.0 Credit

This course is designed for the student who can independently use and apply the basic skills of arithmetic. The course introduces the student to the basic structure of Algebra through the use and application of real numbers, inequalities, factoring, polynomials, linear and quadratic equations, and graphs. Appropriate technology will be used to enhance mathematical understanding and problem solving skills. Students who successfully complete this course with a grade of "C" or higher should be prepared to take Geometry.

This course covers the following Algebra concepts:

- **Seeing Structure in Expressions**
 - Interpret the structure of expressions
 - Write expressions in equivalent forms to solve problems

- **Arithmetic with Polynomials and Rational Functions**
 - Perform arithmetic operations on polynomials
 - Understand the relationship between zeros and factors of polynomials
 - Use polynomial identities to solve problems
 - Rewrite rational functions

- **Creating Equations**
 - Create equations that describe numbers or relationships

- **Reasoning with Equations and Inequalities**
 - Understand solving equations as a process of reasoning and explain the reasoning

TRIGONOMETRY

1.0 Credit

This honors level course will focus on the study of angles; the trigonometry of angles and real numbers; the trigonometric functions and their inverses including their graphs; solutions of right and oblique triangles; verification of fundamental identities and analytic trigonometry; addition, subtraction and multiple angle formulas; the laws of sines and cosines; vectors and the dot and cross product; complex numbers, De Moivre's Theorem and nth roots of complex numbers; polar coordinates and equations. The course will also include the study of functions including exponential and logarithmic functions.

TRIGONOMETRIC FUNCTIONS

- Extend the domain of trigonometric functions using the unit circle.
- Model periodic phenomena with trigonometric functions.
- Prove and apply trigonometric identities.

THE COMPLEX NUMBER SYSTEM

- Perform arithmetic operations with complex numbers.
- Represent complex numbers and their operations on the complex plane.
- Use complex numbers in polynomial identities and equations.

VECTOR & MATRIX QUANTITIES

- Represent and model with vector quantities.
- Perform operations on vectors.

SIMILARITY, RIGHT TRIANGLES & TRIGONOMETRY

- Define trigonometric ratios and solve problems involving right triangles.
- Apply trigonometry to general triangles

- Solve equations and inequalities in one variable
- Solve systems of equations
- Represent and solve equations and inequalities graphically

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- **Mathematical Practices**
 1. Make sense of problems and persevere in solving them.
 2. Reason abstractly and quantitatively.
 3. Construct viable arguments and critique the reasoning of others.
 4. Model with mathematics.
 5. Use appropriate tools strategically.
 6. Attend to precision.
 7. Look for and make use of structure.
 8. Look for and express regularity in repeated reasoning.

GEOMETRY

1.0 Credit

The Geometry course emphasizes logical and critical thinking. Using theorems and postulates, students will write proofs to solve problems and prove theorems and statements. This course also studies angles, parallel lines and transversals, triangle congruency and similarity, properties of triangles, circles and parallelograms, right triangle trigonometry and transformations. In addition, students will explore perimeter, area, surface area, and volume.

This course introduces the student to the deductive method of proof with the use of points, lines, and planes. Solid geometry is integrated with plane geometry to lead the student to consideration of two- and three-dimensional figures and to develop the ability to visualize space relationships.

PRE-CALCULUS

1.0 Credit

Topics from geometry, trigonometry and higher algebra are reviewed and extended as students study linear, quadratic, polynomial, exponential and logarithmic functions, trigonometric functions and their graphs, prove trig identities, solve right and oblique triangles, and work with arithmetic and geometric sequences and series. A study of analytic geometry is included, as well as basic calculus concepts including limits, derivatives, continuity and integrals. The course is designed for those capable students who have completed Algebra II. Students successfully completing this course with a grade of "C" or higher should be prepared to take Calculus.

CALCULUS

1.0 Credit

This advanced course includes a thorough study of differentiation and integration with many applications. Topics include but are not limited to limits and continuity, differentiation of polynomial, trigonometric, exponential and logarithmic functions, implicit differentiation, indefinite and definite integrals, and series convergence and divergence. Students will apply their skills to applications such as optimization, linear approximation, the area between curves, volumes of solids of revolution and work.

AP CALCULUS AB

1.0 Credit

AP Calculus AB is the study of limits, derivatives, definite and indefinite integrals, and the Fundamental Theorem of Calculus. Consistent with AP philosophy, concepts will be expressed

<p>Students who successfully complete this course with a grade of “C” or higher should be prepared for Algebra II.</p> <p>This course covers the following Geometry concepts:</p> <p>CONGRUENCE</p> <ul style="list-style-type: none"> • Experiment with transformations in the plane • Understand congruence in terms of rigid motions • Prove geometric theorems • Make geometric constructions <p>SIMILARITY, RIGHT TRIANGLES & TRIGONOMETRY</p> <ul style="list-style-type: none"> • Understand similarity in terms of similarity transformations • Prove theorems involving similarity • Define trigonometric ratios and solve problems involving right triangles • Apply trigonometry to general triangles <p>CIRCLES</p> <ul style="list-style-type: none"> • Understand and apply theorems about circles • Find arc lengths and areas of sectors of circles <p>EXPRESSING GEOMETRIC PROPERTIES WITH EQUATIONS</p> <ul style="list-style-type: none"> • Translate between the geometric description and the equation for a conic section • Use coordinates to prove simple geometric theorems algebraically <p>GEOMETRIC MEASUREMENT & DIMENSION</p> <ul style="list-style-type: none"> • Explain volume formulas and use them to solve problems • Visualize relationships between two-dimensional and three-dimensional objects <p>MODELING WITH GEOMETRY</p> <ul style="list-style-type: none"> • Apply geometric concepts in modeling situations 	<p>and analyzed geometrically, numerically, analytically, and verbally.</p> <p>This is designed to be taught over a full high school academic year. It is possible to spend some time on elementary functions and still cover the Calculus AB curriculum within a year. However, if students are to be adequately prepared for the Calculus AB examination, most of the year must be devoted to topics in differential and integral calculus. These topics are the focus of the AP Exam.</p> <ul style="list-style-type: none"> • Students should be able to work with functions represented in a variety of ways: graphical, numerical, analytical, or verbal. They should understand the connections among these representations. • Students should understand the meaning of the derivative in terms of a rate of change and local linear approximation, and should be able to use derivatives to solve a variety of problems. • Students should understand the meaning of the definite integral both as a limit of Riemann sums and as the net accumulation of change, and should be able to use integrals to solve a variety of problems. • Students should understand the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus. • Students should be able to communicate mathematics and explain solutions to problems both verbally and in written sentences. • Students should be able to model a written description of a physical situation with a function, a differential equation, or an integral. • Students should be able to use technology to help solve problems, experiment, interpret results, and support conclusions. • Students should be able to determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement. • Students should develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment.
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ALGEBRA II

1.0 Credit

This course begins with a review of Algebra I topics and introduces the following new topics: matrices, complex numbers, exponential and logarithmic functions, conic sections, higher degree polynomial functions, sequences and series, and trigonometry. This course is required for students who are planning to attend most post-secondary institutions.

Algebra II is a continuation of the algebraic processes begun in Algebra I. This course includes solving equations, inequalities, matrices, graphing, functions, powers, roots, logarithms, complex numbers, polynomials, quadratic relations, sequences, series, probability and statistics. Appropriate technology is integrated into the curriculum.

Students will work with both scientific and graphing calculators throughout this Algebra 2 course. It is strongly recommended that you have at least a scientific calculator to use when completing your work. If you don't have access to a scientific and/or graphing calculator, many are available for free online.

The Algebra II course will cover a range of algebraic topics. The over-arching topics include Operations on Numbers and Expressions, Equations and Inequalities, Polynomial and Rational Functions, Exponential Functions and Function Operations and Inverses.

By the end of the course you should be able to:

1. Demonstrate an understanding of operations with numbers
2. Manipulate algebraic expressions involving real and complex numbers
3. Solve linear and nonlinear equations and inequalities
4. Solve systems of linear equations and inequalities.

AP CALCULUS BC

1.0 Credit

This is a full-year course in the calculus of functions of a single variable. It includes all topics covered in Calculus AB plus additional topics. Both courses represent college-level mathematics for which most colleges grant advanced placement and credit. The content of Calculus BC is designed to qualify the student for placement and credit in a course that is one course beyond that granted for Calculus AB.

AP Calculus BC is the study of limits, derivatives, definite and indefinite integrals, polynomial approximations and (infinite) series. Though this is considered a study of single-variable calculus, parametric, polar, and vector functions will be studied. Consistent with AP philosophy, concepts will be expressed and analyzed geometrically, numerically, analytically, and verbally. Calculus BC covers topics that are usually included in the first 3 semesters of college calculus.

- Students should be able to work with functions represented in a variety of ways: graphical, numerical, analytical, or verbal. They should understand the connections among these representations.
- Students should understand the meaning of the derivative in terms of a rate of change and local linear approximation, and should be able to use derivatives to solve a variety of problems.
- Students should understand the meaning of the definite integral both as a limit of Riemann sums and as the net accumulation of change, and should be able to use integrals to solve a variety of problems.
- Students should understand the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus.
- Students should be able to communicate mathematics and explain solutions to problems both verbally and in written sentences

5. Solve, translate and model linear equations
6. Solve, translate and model quadratic equations
7. Solve, translate and model exponential equations
8. Solve, translate and model rational equations
9. Solve, translate and model radical equations
10. Solve, translate and model higher-order polynomial equations and inequalities
11. Solve problems presented in context
12. Represent, characterize and solve problems that involve quadratic functions
13. Represent, characterize and solve problems that involve higher-order polynomial
14. Represent, characterize and solve problems that involve simple rational functions
15. Represent, characterize and solve problems involving exponential functions and logarithmic functions.
16. Demonstrate an understanding of combinations and inverses of functions.

- Students should be able to model a written description of a physical situation with a function, a differential equation, or an integral.
- Students should be able to use technology to help solve problems, experiment, interpret results, and support conclusions.
- Students should be able to determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement.
- Students should develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment.

STATISTICS

1.0 Credit

This course is designed to provide a basic understanding of descriptive and inferential statistics. Topics include experimental design, frequency distributions, measures of center and variation, representing data visually, basic probability, combinations and permutations, probability distributions, the normal distribution, central limit theorem, and linear regression. The course culminates with a final project where students apply their skills to a real-world scenario.

This course covers the following probability & statistics concepts:

AP STATISTICS

1.0 Credit

The purpose of the AP course in statistics is to introduce students to the major concepts and tools for collecting, analyzing and drawing conclusions from data.

Students are exposed to four broad conceptual themes:

- Exploring Data: Describing patterns and departures from patterns.
- Sampling and Experimentation: Planning and conducting a study.

Interpreting Categorical and Quantitative Data

- Summarize, represent, and interpret data on a single count or measurement variable
- Summarize, represent, and interpret data on two categorical and quantitative variables
- Interpret linear models

Making Inferences and Justifying Conclusions

- Understand and evaluate random processes underlying statistical experiments
- Make inferences and justify conclusions from sample surveys, experiments and observational studies

Conditional Probability and the Rules of Probability

- Understand independence and conditional probability and use them to interpret data
- Use the rules of probability to compute probabilities of compound events in a uniform probability model

Using Probability to Make Decisions

- Calculate expected values and use them to solve problems

Use probability to evaluate outcomes of decisions

- Anticipating Patterns: Exploring random phenomena using probability and simulation.
- Statistical Inference: Estimating population parameters and testing hypotheses.

ENGLISH

ENGLISH I

1.0 Credit

To expose students to a variety of literary genres to further their appreciation of literature. To develop students' vocabulary-building skills through the use of context clues and word origin/structure analysis.

To help students recognize and understand the use of a variety of literary elements (terms and techniques).

To enable students to respond to literature in a way that reflects intelligent and thoughtful analysis.

To provide a wide range of learning opportunities, including daily and longer-term projects, in order that students of all ability levels may be able to reach their respective potentials and be successful.

To foster a classroom atmosphere that emphasizes the importance of respect for others' opinions, beliefs and ways of being.

Objectives:

- The student will review and practice grammar and punctuation.
- The student will develop vocabulary.
- The student will practice different types of essay writing.
- The student will read critically, informatively, and for pleasure.
- The student will give informal book talks and make a formal research presentation.
- The student will listen to teacher lectures and readings.

Reading literature and informational texts:

- Vocabulary

ENGLISH II

1.0 Credit

To expose students to a variety of literary genres to further their appreciation of literature. To develop students' vocabulary-building skills through the use of context clues and word origin/structure analysis.

To help students recognize and understand the use of a variety of literary elements (terms and techniques)

To enable students to respond to literature in a way that reflects intelligent and thoughtful analysis

To provide a wide range of learning opportunities, including daily and longer-term projects, in order that students of all ability levels may be able to reach their respective potentials and be successful

To foster a classroom atmosphere that emphasizes the importance of respect for others' opinions, beliefs and ways of being

Objectives:

- The student will review and practice grammar and punctuation.
- The student will develop vocabulary.
- The student will practice different types of essay writing.
- The student will read critically, informatively, and for pleasure.

Reading literature and informational texts:

- vocabulary
- poetry
- short stories

- drama: *A Midsummer Nights Dream*

- novel: *Things Fall Apart*
- non-fiction essays and memoirs

Writing:

- sentence structure
- comparison essay
- research-based essay

Speaking and Listening:

- presentations
- listening comprehension activity

Language Usage:

- writing and editing strategies
- parts of speech

- short stories
- poetry
- drama: *Romeo and Juliet*
- novel: *To Kill a Mockingbird* and *Lord of the Flies*
- non-fiction essays and speeches

Writing:

- sentence structure
- descriptive essay
- research-based essay
- hyper-text activity

Speaking and Listening:

- presentations
- listening comprehension activity

Language Usage:

- parts of speech
- vocabulary
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ENGLISH III

1.0 Credit

To help students understand the importance of historic context in literary analysis

To expose students to a variety of literary genres to further their appreciation of literature

To develop students' vocabulary-building skills through the use of context clues and word origin/structure analysis

To help students recognize and understand the use of a variety of literary elements (terms and techniques)

ENGLISH IV

1.0 Credit

To help students understand the importance of historic context in literary analysis

To expose students to a variety of literary genres to further their appreciation of literature

To develop students' vocabulary-building skills through the use of context clues and word origin/structure analysis

To help students recognize and understand the use of a variety of literary elements (terms and techniques)

To enable students to respond to literature in a way that reflects intelligent and thoughtful analysis

To develop students' reading, writing, speaking, listening and critical thinking skills so that they may function effectively in any course at university level

To provide a wide range of learning opportunities, including daily and longer-term projects, in order that students of all ability levels may be able to reach their respective potentials and be successful

To foster a classroom atmosphere that emphasizes the importance of respect for others' opinions, beliefs and ways of being

Objectives:

- The student will review and practice grammar and punctuation.
- The student will develop vocabulary.
- The student will practice different types of essay writing.
- The student will read critically, informatively, and for pleasure.

To enable students to respond to literature in a way that reflects intelligent and thoughtful analysis.

To develop students' reading, writing, speaking, listening and critical thinking skills so that they may function effectively in any course at university level.

To help students create a body of written work (essay portfolio) that will facilitate the college application process.

To provide a wide range of learning opportunities, including daily and longer-term projects, in order that students of all ability levels may be able to reach their respective potentials and be successful.

To foster a classroom atmosphere that emphasizes the importance of respect for others' opinions, beliefs and ways of being.

Objectives:

- The student will review and practice grammar and punctuation.
- The student will develop vocabulary.
- The student will practice different types of essay writing.
- The student will read critically, informatively, and for pleasure.

Reading literature and informational texts:

- vocabulary
- poetry
- short stories

- drama: *The Crucible* and *Trifles*

Reading literature and informational texts:

- vocabulary
- poetry
- short stories
- epics: *The Odyssey* and *Beowulf*

- drama: *Macbeth*, *Oedipus Rex* and *Antigone*
- novel: *Wuthering Heights* and *Frankenstein*
- non-fiction essays

Writing:

- sentence structure
- creative writing
- analysis essays

Speaking and Listening:

- presentations

Language Usage:

- writing and editing strategies

parts of speech

AP ENGLISH LANGUAGE AND COMPOSITION

1.0 Credit

This course is designed to prepare students to earn college credit in introductory English and to help students develop the critical thinking skills of interpreting, evaluating, and analyzing a text. Students will use writing as a tool for developing and presenting their own understanding of the basic elements of rhetoric, with emphasis placed on developing a mature personal writing style.

While this course primarily focuses on non-fiction texts, some short fiction and poetry may be incorporated into the thematic units.

- novel: *The Great Gatsby*, *The Scarlet Letter*, and *The Awakening*
- non-fiction essays and speeches

Writing:

- sentence structure
- literary analysis essay
- research-based essay

Speaking and Listening:

- presentations
- listening comprehension
- non verbal communication

Language Usage:

writing and editing strategies

CREATIVE WRITING

1.0 Credit

This course offers an opportunity for students to analyze a diverse selection of literature as well as to develop extensively their own creative writing talents. Students are required to write a play, a selection of various styles of poetry, a short story, and other types of compositions. Emphasis is placed on the development of original ideas, mechanics, vocabulary, and writing styles.

Objectives:

As described in the College Board 2010 Course Description:

- Students will write for a variety of purposes and audiences including
 - informal journal or discussion pieces.
 - researched essays of argumentation correctly integrating and documenting primary and secondary sources.
 - essays to analyze selected texts for author's rhetorical strategies and techniques.
 - meta-cognitive reflections on their own development as writers.
- Students will develop their abilities to write essays which
 - establish an insightful thesis.
 - Develop the thesis with relevant, specific details from a variety of sources.
 - demonstrate a logical organization within and among paragraphs of the essay using repetition, transitions, and parallel structure.
 - use an appropriate, wide-ranging vocabulary.
 - include varied sentence structures.
 - use and maintain an appropriate voice.
- Students will improve their skills in revision and editing of their own writing, including their abilities to
 - develop a concise and insightful thesis.
 - evaluate the relevance of details for inclusion.
 - revise organization of sentences, paragraphs, or the essay as a whole to improve clarity.
 - modify word choices to make them more effective.
 - balance generalizations about the text with specific details from the text.
- Students will evaluate a variety of sources for relevance, credibility, and tone.
- Students will analyze graphic and visual images as text.

AP ENGLISH LITERATURE AND COMPOSITION

1.0 Credit

*Develop the skills to read critically and evaluate works of literature for

- Character development and methods of characterization

- Setting and the influence of time and place on the work as a whole
- Structure and its contribution to meaning
- Style and word choice
- Tone, purpose, and theme
- Irony, symbolism, and figurative language

*Increase their appreciation of literature in various genres and their understanding of the relationship between literature and the time/culture in which it is produced

*Develop their abilities to write essays of analysis and evaluation that

- Establish an insightful thesis regarding a literary work
- Develop the thesis with relevant, specific details from the text
- Demonstrate a logical organization within and among paragraphs of the essay using repetition, transitions, and parallel structure
- Use an appropriate, wide-ranging vocabulary
- Include varied sentence structures
- Use and maintain an appropriate voice

*Develop their skills in comparing and contrasting literary elements and themes in texts written in various genres and from various literary periods

*Improve their skills in revision and editing of their own writing, including their abilities to

-
- Develop a concise and insightful thesis
 - Evaluate the relevance of details for inclusion
 - Revise organization of sentences, paragraphs, or the essay as a whole to improve clarity
 - Modify word choices to make them more effective
 - Balance generalizations about the text with specific details from the text