High School Achievement Program

2024–2025 Course Catalog

Eligible Mercy College Courses

BUSINESS LAW

BLAW 240 Business Law 1

Course Description

An introduction to the legal system and the basic legal concepts pertinent to the structure, management, and operation of businesses. This course will also examine current trends and issues relevant to the legal and ethical responsibilities of business. Prerequisite: Placement at ENGL 110 or higher. 3 sem. hrs. 3 crs.

Course Learning Outcomes
Upon completion of this course, students should be able to:

1. Apply the principles regarding the legal environment of business and business ethics and corporate social responsibility
2. Apply the laws of corporate governance to management decision making
3. Discuss the legal relevance of different corporate structures
4. Describe laws and legal concepts related to business law and its application to business entities
5. Critically analyze legal and ethical issues in business situations and fact patterns
6. Apply relevant legal concepts to address legal and ethical issues in business

COMPUTER INFORMATION SYSTEMS

CISC/MATH 120 Introduction to Computers and Application Software
Course Description
An introduction to computers and computing including the fundamentals of computer nomenclature, particularly with respect to personal computer hardware and software and the World Wide Web; develop an understanding of why computers are essential components in the business world and society in general; focus on the computer as a valuable productivity tool; present strategies for purchasing, and maintaining a personal computer system. This course has a wide-ranging hands-on lab component, which includes an introduction to and actual use of word-processing, spreadsheet, presentation, and Internet browser software. Prerequisites: None. 3 sem. hrs; 3 crs. Prospective students who have significant computer experience may take the departmental waiver exam for CISC/MATH 120. If the student passes the waiver exam, the student may take CISC/MATH 31, MATH 117 or MATH 122 instead.

Course Learning Outcomes
Upon completion of this course, students should be able to:

1. Interact with a computer to issue the most common operating system commands (using Microsoft Windows 10)
2. Complete assignments and projects that need the use of a word processor (Microsoft Word), a spreadsheet (Microsoft Excel), presentation software (Microsoft Power Point), database software (MS Access) or HTML, and browser software (Internet Explorer/Firefox/Chrome)

ECONOMICS

ECON 120 The World of Business
Course Description
This course introduces students to the world of business. The course presents the methods and practices that are used not only in business organizations but also in health care, education, government, and other organizations. With its coverage of management, marketing, finance, and information systems, the course provides a broad foundation for further study of these areas as well as useful knowledge for the workplace. 3 sem. hrs. 3 crs.

Course Learning Outcomes
Upon completion of this course, students should be able to:

1. Apply key theories and practices of business within a variety of settings

2. Discuss how management, marketing, law, finance, technology, sociology environment, and ethics relate to each other in the business world
3. Use research skills to analyze the current environment of management

SOCIOLOGY

SOCL 101 Introduction to Sociology

Course Description

Introduction to the scientific study of human behavior as related to group membership. Major areas of study in sociology: basic structure of human society and of smaller groups; transmission of culture and regulation of behavior; acquisition of the social self; violation of norms; stratification by class, race, ethnicity, sex, and age; major social institutions; populations dynamics; and sociocultural change. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Identify the basic features of social scientific research
2. Use an academic database to locate a peer reviewed research article
3. Compare and contrast sociology with other academic disciplines
4. Compare and contrast the role of values in sociological theory, research, and practice
5. Recognize the relationships between sociological concepts and principles as they related to everyday living
6. Describe the effect of gender, age, race, ethnicity, and class on human behavior and experience

Eligible Advanced Placement (AP) Courses and Mercy College Course Equivalents

Please note that the College Board must approve all AP courses.

AP BIOLOGY

BIOL 160 General Biology I Lecture (Approved for AP Biology*)

**Must meet the criteria for both BIOL 160 & 161 to be approved for AP Biology*

Course Description

This course is an introduction to contemporary biology, covering the chemical basis of biology, cell structure and function, cell division, genetics, and basic molecular biology. Prerequisite: MATH 116 or higher, Corequisite: BIOL 160A. 3 hrs. lect., 1 hr recitation. 3 crs.

BIOL 160A General Biology I Laboratory

Course Description

This laboratory course is designed to complement concepts taught in the BIOL 160 lecture course. Students will gain proficiency in light microscopy, spectrometry, pipetting and experimentation. Prerequisite: MATH 116 or higher, Corequisite: BIOL 160. 3 hrs. lab. 1 cr.

BIOL 160 Course Learning Outcomes

1. Describe the chemical organization of the cell and its relationship to cellular functions, especially in metabolic operations, energy manipulations, and inheritance
2. Know about the structural organization of the cell and the relationship to cellular diversity
3. Describe the function and significance of cell membranes
4. Describe the metabolic pathways of cellular respiration and photosynthesis and the relationship to cellular operations
5. Understand how the cell divides, sexual reproduction, and the concept of inheritance
6. Know the importance of nucleic acids in determining cellular properties, cellular operations, and mechanisms of inheritance
7. Describe the structure and function of the gene and its control over protein synthesis
8. Understand how genes regulate cellular and organismal function

BIOL 161 General Biology II Lecture (Approved for AP Biology*)
**Must meet the criteria for both BIOL 160 & 161 to be approved for AP Biology*
Course Description
A study of the structure and function of living organisms with primary emphasis on multicellular organisms and their interactions. Prerequisite: BIOL 160. 3 hrs. lect., 3 hrs. lab. 3 crs.

BIOL 161A General Biology II Laboratory
Course Description
This laboratory course is designed to complement concepts taught in the BIOL 161 lecture course. Co-requisite: BIOL 161. Prerequisites: BIOL 160/160A. 3 hrs. lab. 1 crs.

BIOL 161 Course Learning Outcomes
Upon completion of this course, students should be able to:
1. Classify a wide range of organisms from each kingdom of life
2. Identify the structure, function, and interaction of the major organ systems of mammals

AP CHEMISTRY

CHEM 160 General Chemistry I Lecture (Approved for AP Chemistry*
**Must meet the criteria for both CHEM 160 & 161 to be approved for AP Chemistry*
Course Description
A systematic development of the fundamental laws and theories of modern chemistry and the application of these principles to the chemistry of the elements and their compounds. Topics include atomic structure, the periodic table and properties of elements, chemical bonding, stoichiometric relationships, thermochemistry, and states of matter. Prerequisites: MATH 116 or higher. Corequisite: CHEM 160A. 3 hrs. lect., 1 hr. rec. 3 crs.

COURSE LEARNING OUTCOMES (CLOs)

Students completing this course will:

1. **[CHEMICAL PERSPECTIVE]** Describe and relate properties and processes at the atomic and molecular level to the properties and behavior of matter at the macroscopic level.

2. **[CLASSIFICATION AND REPRESENTATION]** Represent and classify matter using chemical nomenclature, formulas, terminology, and the periodic table.
3. **[PROBLEM SOLVING]** Solve quantitative chemical problems relating to the properties and transformations of matter and energy.
4. **[PREDICTIVE MODELING]** Predict the properties and behavior of matter using accepted models, theories, relationships, and data.

CHEM 160A General Chemistry Laboratory

Course Description

The laboratory introduces basic synthetic and analytical techniques, including gravimetric analysis, qualitative analysis, small-scale calorimetry, and the use of computers for data collection and analysis. Prerequisites: MATH 116 or higher. Corequisite: CHEM 160. 3 hrs. lab. 1 cr.

STUDENT LEARNING OUTCOMES

Upon completion of the course the student should be able to:

1. **[CHEMICAL SAFETY]** Properly utilize common laboratory safety practices, equipment, labels, SDS information, waste protocols, and personal protective equipment (PPE).
2. **[PRACTICE & TECHNIQUE]** Proficiently employ common laboratory techniques using basic laboratory equipment, instrumentation, and software [including electronic balances, common glassware, liquid measuring devices (pipets, graduated cylinders, burets, etc.), heat sources, thermometers, spectrophotometers, pH probes, other types of sensors, and molecular modeling software]
3. **[DATA & INTERPRETATION]** Collect and interpret qualitative and quantitative experimental information (observations, collected data, graphs, measurements, supporting calculations, quantitative accuracy, reproducability, etc.) with respect to the assumptions and limitations of the experiment.
4. **[ANALYSIS & CONCLUSIONS]** Formulate supportable, data-driven conclusions and/or predictions based on the analysis of experimental results, comparisons, relevant chemical calculations, and corresponding error analyses.
5. **[SCIENTIFIC COMMUNICATION]** Effectively summarize and communicate important theoretical concepts, experimental results, and meaningful conclusions in the form of written or oral laboratory reports.

CHEM 161 General Chemistry II Lecture (Approved for AP Chemistry*

**Must meet the criteria for both CHEM 160 & 161 to be approved for AP Chemistry*

Course Description

This course is a continuation of general chemistry I and is designed to provide students an understanding of solutions, acids and bases, thermodynamics, electrochemistry, and kinetics. Prerequisites: CHEM 160/160A. Corequisite: CHEM 161A. 3 hrs. lect., 1 hr. rec, 3 crs.

COURSE LEARNING OUTCOMES (CLOs)

Students completing this course will:

1. **[CHEMICAL PERSPECTIVE]** Describe and relate properties and processes at the atomic and molecular level to the properties and behavior of matter at the macroscopic level.
2. **[CLASSIFICATION AND REPRESENTATION]** Represent and classify matter using chemical nomenclature, formulas, terminology, and the periodic table.
3. **[PROBLEM SOLVING]** Solve quantitative chemical problems relating to the properties and transformations of matter and energy.
4. **[PREDICTIVE MODELING]** Predict the properties and behavior of matter using accepted models, theories, relationships, and data.

CHEM 161A General Chemistry II Laboratory

Course Description

The laboratory emphasizes analytical techniques associated with lecture topics. Computers are used in laboratories for data collection and analysis. Prerequisites: CHEM 160/160A. Corequisite: CHEM 161. 3 hrs. lab. 1 cr.

STUDENT LEARNING OUTCOMES

Upon completion of the course the student should be able to:

5. . **[CHEMICAL SAFETY]** Properly utilize common laboratory safety practices, equipment, labels, SDS information, waste protocols, and personal protective equipment (PPE).
   2. **[PRACTICE & TECHNIQUE]** Proficiently employ common laboratory techniques using basic laboratory equipment, instrumentation, and software [including electronic balances, common glassware, liquid measuring devices (pipets, graduated cylinders, burets, etc.), heat sources, thermometers, spectrophotometers, pH probes, other types of sensors, and molecular modeling software]
   3. **[DATA & INTERPRETATION]** Collect and interpret qualitative and quantitative experimental information (observations, collected data, graphs, measurements, supporting calculations, quantitative accuracy, reproducibility, etc.) with respect to the assumptions and limitations of the experiment.
   4. **[ANALYSIS & CONCLUSIONS]** Formulate supportable, data-driven conclusions and/or predictions based on the analysis of experimental results, comparisons, relevant chemical calculations, and corresponding error analyses.
   5. **[SCIENTIFIC COMMUNICATION]** Effectively summarize and communicate important theoretical concepts, experimental results, and meaningful conclusions in the form of written or oral laboratory reports.

AP COMPUTER SCIENCE

CISC/ MATH 131 Foundations of Computing I (Approved for AP Computer Science)

Course Description

In Foundations of Computing I, students will be introduced to the basic aspects of problem solving, data representation, algorithm design, and object-oriented design and programming. The Python programming language will be used as the means to implement programs. This course prepares students for problem analysis and solution design. Students will also discuss ethical and social issues relating to computing. Prerequisites: None. 2 sem. hrs. 2 hrs. lab. 3 crs.

Course Learning Outcomes

Upon completion of the course, students should be able to:

1. Describe the interdisciplinary nature of computer science
2. Explain the fundamental principles and goals of software engineering and object-oriented programming
3. Explain the importance of the syntax and semantics of a programming language
4. Use all elementary constructs of the Python language
5. Use Python's basic graphic capabilities and graphical user interfaces
6. Systematically analyze a problem and design a simple algorithm from a specification
7. Translate an algorithm into the Python programming language
8. Use an Integrated Development Environment to write, edit, execute, and test Python programs
9. Write clear program documentation

AP ENGLISH

ENGL 111 Composition I (Approved for AP English)

Course Description

Introduction to elements of expository writing and research methods through the study of literary texts (nonfiction genre). Students read and examine these texts to formulate essays in several rhetorical modes. Placement determined by the English faculty. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Use close reading strategies to foster analytical discussions of a variety of texts
2. Respond to a variety of rhetorical situations by composing in different genres directed toward different audiences
3. Practice the writing process, which includes pre-writing, drafting, and revising in collaboration with peers and the instructor
4. Demonstrate metacognition by reflecting on self and growth as writers
5. Demonstrate basic skills necessary for academic writing, such as direct quotation, paraphrasing, and parenthetical citation
6. Use and practice correct grammar, punctuation, style, and documentation in essays

ENGL 112 Composition II (Approved for AP English)

Course Description

Students read and critically analyze literary works (fiction and/or drama). Students compose a full-length research essay based on assigned topics. Prerequisite: ENGL 111. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Use close reading strategies to foster analytical discussions of fiction and nonfiction texts
2. Write clear, coherent research-based genres that work to support a final research essay
3. Engage in research methods and writing by gathering a range of scholarly sources, evaluating these sources, and placing them in conversation with each other
4. Demonstrate audience awareness by identifying different academic audiences and writing for these audiences
5. Continue refining the writing process, which includes pre-writing, drafting, and revising in collaboration with peers and the instructor
6. Demonstrate correct grammar, punctuation, style, and documentation appropriate for academic writing

AP ENVIRONMENTAL SCIENCE

BIOL 112 Environmental Science (Approved for AP Environmental Science)

Course Description

A study of the basic biological concepts and scientific methodology as exemplified in the study of the present-day environmental problems such as air and water pollution, food control and population, and their effects on humans. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Apply information learned through readings and other media posted on digitation
2. Comprehend the interdisciplinary (e.g. agricultural science, biology, chemistry, ecology, economics, geology, history, policy, etc.) concepts integral to environmental science
3. Analyze current environmental issues and evaluate potential solutions
4. Relate the features of human populations to different types of environmental degradation
5. Assess the costs/benefits of conservation vs. remediation or technological solutions
6. Recognize the impact of globalization on our environment
7. Recognize the ecological footprints left by peoples on our planet
8. Participate in weekly class discussions and peer review student digitation posts
9. Work effectively in a group to create a brochure about sustainable solutions
10. Recognize the variety of worldviews associated with the environment
11. Describe their own worldview and speculate about how and why they formed it

AP CALCULUS AB

MATH 201 Pre-Calculus (Approved for AP Calculus AB)

Course Description

An introduction to real-valued functions and their graphs including polynomial, rational, exponential, logarithmic, and trigonometric functions. Functions will be represented symbolically, numerically, graphically, and verbally. Real-world applications will be used to introduce the concepts. Graphing calculators will be used throughout the course. Prerequisite: MATH116 or a minimum grade of B in high school intermediate algebra. 2 sem. hrs. 2 hrs. lab, 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Read and interpret graphs of linear, quadratic, polynomial, exponential, logarithmic and trigonometric functions
2. Raise their comfort level when approaching a multi-step mathematical problem
3. Be prepared to tackle the challenges of higher mathematics and computer science
4. Set up and solve word problems involving linear, quadratic, exponential, logarithmic and trigonometric equations

MATH 260 Calculus I (Approved for AP Calculus AB and AP Calculus BC)

Course Description

This course will introduce students to Calculus. Topics include limits, derivatives differential rules, applications of differentiation, antiderivatives, and the Fundamental Theorem of Calculus. Prerequisite: MATH 201 4 sem. hrs. 4 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Interpret a function from an algebraic, numerical, graphical and verbal perspective
2. Verify the value of the limit of a function at a point using the definition of the limit
3. Calculate the limit of a function at a point numerically and algebraically using appropriate techniques including L'Hospital's rule
4. Find points of discontinuity for functions and classify them

5. Interpret the derivative of a function at a point the as the instantaneous rate of change in the quantity modeled and state its units
6. Interpret the derivative of a function at a point as the slope of the tangent line and estimate its value from the graph of a function
7. Sketch the graph of the derivative from the given graph of a function
8. Compute the value of the derivative at a point algebraically using the (limit) definition
9. Derive the expression for the derivative of elementary functions from the (limit) definition
10. Show whether a function is differentiable at a point
11. Compute the expression for the line tangent to a function at a point
12. Compute the expression for the derivative of a function using the rules of differentiation including the power rule, product rule, and quotient rule and chain rule
13. Compute the expression for the derivative of a composite function using the chain rule of differentiation
14. Differentiate a relation implicitly and compute the line tangent to its graph at a point
15. Differentiate exponential, logarithmic, and trigonometric and inverse trigonometric functions
16. Obtain expressions for higher order derivatives of a function using the rules of differentiation
17. Interpret the value of the first and second derivative as measures of increase and concavity of functions
18. Compute the critical points of a function on an interval
19. Identify the extrema of a function on an interval and classify them as minima, maxima or saddles using the first derivative test

AP CALCULUS BC

MATH 261 Calculus II (Approved for AP Calculus BC)

Course Description

This course continues the study of Calculus after Calculus I. Topics include the definite and indefinite integrals, the Fundamental Theorem of Calculus, techniques of integration, numerical method, improper integrals, applications of the integral to real-world problems, sequences, and series. Prerequisite: MATH 260 4 sem. hrs. 4 crs.

Course Learning Outcomes

Upon completion of the course, the student will be able to:

1. Define standard integral objects
2. Develop integration techniques
3. Develop numerical integration techniques
4. Explore various applications of the integral
5. Solve definite and indefinite integrals
6. Solve application problems
7. Interpret the area enclosed between curves as a definite integral and compute its value
8. Set up the Riemann sum representing the volume enclosed by a geometric solid, convert the result to a definite integral and compute its value
9. Interpret a volume of revolution of a function's graph around a given axis as a sum of disks or cylindrical shells, convert to definite integral form and compute its value

10. Express the length of a curve as a (Riemann) sum of linear segments, convert to definite integral form and compute its value
11. Express the surface area of revolution of a function's graph around a given axis as a (Riemann) sum of rings, convert to definite integral form and compute its value
12. Anti-differentiate products of functions by parts
13. Recognize and implement appropriate techniques to anti-differentiate products of trigonometric functions
14. Devise and apply a trigonometric substitution in integrals involving Pythagorean quotients
15. Decompose a rational integrand using partial fractions
16. Determine convergence of improper integrals with discontinuities in their domain or infinite limits of integration
17. Apply basic anti-differentiation techniques to selected problems arising in various fields such as physical modeling, economics and population dynamics

AP EUROPEAN HISTORY

HIST 101 European History to 1500 (Approved for AP European History and AP World History)

Course Description

An overview of European history from antiquity to 1500: the rise and fall of Greece and Rome; the Middle Ages; the Italian and Northern Renaissance; the beginning of the Reformation. Extensive map work is required. 3 sem. hrs. 3 crs

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Demonstrate proficiency in analyzing primary and secondary sources through written assignments
2. Demonstrate proficiency in critical reading and provide written responses in the evaluation of European history texts
3. Demonstrate an understanding of change over time within a historical context with respect to social, religious, political, economic, and/or technological forces among the various societies
4. Demonstrate knowledge of European history until 1500 through examinations, written assignments, and oral and/or digital presentation

HIST 102 European History Since 1500 (Approved for AP European History)

*Course Descriptio*n

An overview from the Reformation to the present: the Counter Reformation; the Age of Discovery; absolutism and parliamentarianism; the Scientific Revolution and the Enlightenment; the French Revolution; the development of political and economic ideologies; World War I; the Russian Revolution; the emergence of Fascism and Totalitarianism; World War II and its aftermath. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Demonstrate proficiency in analyzing primary and secondary sources through written assignments
2. Demonstrate proficiency in critical reading and provide written responses in the evaluation of European history texts

3. Demonstrate an understanding of change over time within a historical context with respect to social, religious, political, economic, and/or technological forces among the various societies
4. Demonstrate knowledge of European history since 1500 through examinations, written assignments, and oral and/or digital presentation

AP FRENCH

FREN 115 French for Communication (Approved for AP French)

Course Description

A beginning French course designed to help develop listening and speaking skills in the French Language. The course will help students deal with real everyday situations (identifying needs, shopping, seeking medical assistance, gathering information, etc.). The aim of the course is to enable students to understand basic spoken French within the limits of the topics presented in the course, including (but not limited to) business, travel, and social interaction. This course is not open to students who have studied French in high school for more than two semesters or to students who have native or near-native fluency in French. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Speak correctly in the present tense using ER, IR, and RE verbs
2. Ask and answer basic biographical questions in the present tense
3. Conjugate basic stem changing verbs in the present tense

FREN 116 Communicating in French (Approved for AP French)

Course Description

This course is a continuation of French 115 and is designed to further the progress made by students who will continue to learn the basic elements of French structure and vocabulary necessary for an ability in this language. The main emphasis of the course is on speaking and understanding French as it is spoken today in France and in over thirty countries throughout the world. Prerequisite: FREN 115 or the equivalent; two years of high school French; or approval of the Language program director. Please note that candidates for New York State Teacher Certification and Mercy College English Literature majors must take two courses (six credits) in a second language. These two courses must be in the same second language. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Speak correctly using basic statements in the present and preterit tenses
2. Ask and answer basic questions in the present or preterit tenses
3. Communicate effectively using French on a high beginner level

AP GOVERNMENT AND POLITICS

POLS 101 Political Power in America (Approved for AP Government and Politics)

Course Description

The use of political science theory and method to investigate American political institutions: executives, legislature, judiciaries, bureaucracies, mass media, parties, interest groups, elites, and publics; comparisons with foreign political institutions, including their relationship to American institutions as

manifested in foreign politics and international relations; the importance of political institutions, American and foreign, to the lives of students. 3 sem. hrs. 3 crs.

Course Learning Outcomes

1. Develop an intelligent insight on the American government and its institutions
2. Develop analytical skills that enable them to critically address the topics at hand
3. Identify appropriate sources to answer the questions pertaining to the material
4. Demonstrate will and ability to engage in critical evaluation of texts, both in writing and orally
5. Learn to be prudent, balanced and show maturity when engaging in political debate, always keeping in mind that this is a quest for knowledge and that intelligence needs patience to develop

AP ITALIAN

ITAL 115 Italian for Communication (Approved for AP Italian)

Course Description

A beginning Italian course designed to help develop listening and speaking skills in the Italian language. The course will help students with real everyday situations (identifying needs, shopping, seeking medical assistance, gathering information, etc.). The aim of the course is to enable students to understand basic spoken Italian within the limits of the topics presented in the course, including (but not limited to) business, travel and social interaction. This course is not open to students who have studied Italian in high school for more than two semesters or to students who have native or near-native fluency in Italian. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to (orally and in writing):

1. Speak correctly in the present tense using ARE, ERE, and IRE verbs
2. Ask and answer basic biographical questions in the present tense
3. Conjugate basic stem changing verbs in the present tense

ITAL 116 Communicating in Italian (Approved for AP Italian)

Course Description

This course is a continuation of Italian 115 and is designed to further the progress made by students in developing basic communication skills in Italian. Students will continue to learn the basic elements of Italian structure and vocabulary necessary for an ability to communicate in this language. A large emphasis of the course is on speaking and understanding Italian as it is spoken today in Italy and in other parts of the world. Prerequisite: ITAL 115 or the equivalent; two years of high school Italian; or approval of the Language program director. Please note that candidates for New York State Teacher Certification and Mercy College English Literature majors must take two courses (six credits) in a second language. These two courses must be in the same second language. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Speak correctly using basic statements in the present and preterit tenses
2. Ask and answer basic questions in the present or preterit tenses
3. Communicate effectively using Italian on a high beginner level

AP PHYSICS

PHYS 160 Physics for the Life Sciences I (Approved for AP Physics 1 - 1st year)

Course Description

This is the first in a two-semester sequence of introductory physics with integrated laboratory. Algebra based introduction to general physical principles in the areas of mechanics, energy, thermodynamics with conceptual and quantitative applications to phenomena in the life and health sciences. Prerequisite: MATH 201 or the equivalent. 3 hrs. lect. 3 hrs. lab. 4 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Sustain authentic inquiry into physical mechanisms of biomechanical and life phenomena
2. Investigate biomechanical questions experimentally and using information from external sources
3. Construct conceptual models using basic physics principles to explain essential features of biomechanical functioning and representative data
4. Algebraically model the functional relationships in conceptual models to further insight into biomechanics inquiry
5. Quantitatively analyze biomechanical data to make inferences about biomechanical questions:
6. Synthesize different model representations, relationships, and data analysis, into a consistent and robust picture, articulating if or how the different functioning elements, together, give broader insight or inference into the biomechanics inquiry or activity, or can be generalized beyond the specific case investigated
7. Integrate and connect concepts and physical analysis with real world expertise or knowledge

PHYS 161 Physics for the Life Sciences II (Approved for AP Physics 2 - 2nd year)

Course Description

This is the second in a two-semester sequence of algebra-based, introductory physics with integrated laboratory. The physical principles in the areas of fluids, oscillations, waves, magnetism, electricity, quantum and nuclear physics, with conceptual and quantitative applications to phenomena in the life and health sciences. Prerequisites: MATH 201 or the equivalent; PHYS 160. 3 hrs. lect. 3 hrs. lab, 4 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Sustain authentic inquiry into underlying physical mechanisms of living and biomedical phenomena
2. Investigate the physical mechanisms underlying life and biomedical phenomena at different scales, through experimentation and researching scientific literature
3. Use basic physics principles to construct conceptual models to explain physical mechanisms underlying biological and biomedical functioning
4. Algebraically model the functional relationships related to conceptual models and to representative data of living and biomedical processes
5. Quantitatively analyze data to make inferences about physical mechanisms of biological/biomedical questions
6. Communicate clearly the reasoning and steps involved throughout processes of inquiry, investigation, model building, quantitative analysis and inference, in the integration of physics perspectives with biological/health perspectives

7. Create novel approaches of inquiry, investigation, modeling, quantitative analysis, and communication, in the integration of a physics perspective in domains of biology and health.
8. Collaboratively critique, self-assess, and revise

AP PSYCHOLOGY

PSYN 101 Introduction to Psychology (Approved for AP Psychology)

Course Description

An introduction to the science of psychology, including a review of major historical perspectives, methods of research, and contemporary theory and knowledge. Major areas of study include the biological basis of behavior, emotion and motivation, learning and conditioning, human development, personality, and abnormal behavior. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Apply major psychological theories and perspectives.
2. Summarize and explain the major research methods utilized in psychology
3. Identify a peer reviewed research study using academic databases, discuss the parts of the paper and know how to reference articles in APA format

AP SPANISH

SPAN 115 Spanish for Communication (Approved for AP Spanish)

Course Description

A beginning Spanish course designed to help develop listening and speaking skills in the Spanish language. The course will help students deal with real everyday situations (identifying needs, shopping, seeking medical assistance, gathering information, etc.). The aim of the course is to enable students to understand basic spoken Spanish within the limits of the topics presented in the course, including (but not limited to) business, travel, and social interaction. This course is not open to students who have studied Spanish in high school for more than two semesters or to students who have native or near-native fluency in Spanish. 3 sem. hrs. 3 crs.

Course Learning Outcomes

1. Speak correctly in the present tense using AR, ER, and IR verbs
2. Ask and answer basic biographical questions in the present tense
3. Conjugate basic stem changing verbs in the present tense

SPAN 116 Communicating in Spanish (Approved for AP Spanish)

Course Description

This course is a continuation of Spanish 115 and is designed to further the progress made by students in developing basic communication skills in Spanish. Students will continue to learn the basic elements of Spanish structure and vocabulary necessary for an ability to communicate in this language. A large emphasis of the course is on speaking and understanding Spanish as it is spoken today in twenty countries in Europe and in the Americas. Prerequisite: SPAN 115 or the equivalent; two years of high school Spanish; or approval of the Language program director. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Speak correctly using basic statements in present and preterit tenses

2. Ask and answer basic questions in the present or preterit tenses
3. Communicate effectively using Spanish on a high beginner level

AP STATISTICS

MATH 122 (ECON 122) Statistics (Approved for AP Statistics)

Course Description

A survey of statistical material and techniques, with special reference to economic and business data. Methods of collecting, charting, and analyzing statistical data; frequency distributions; introduction to discrete probability; normal curve analysis; introduction to hypothesis testing and confidence intervals; linear regression and correlation; index numbers. Prerequisites: MATH 115 or 116, and CISC/MATH 120 and placement at the ENGL 109 level. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Show competence in the terminology, concepts, methodologies and theories used within the statistics discipline
2. Discuss knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to statistics
3. Analyze information carefully and logically from multiple perspectives, using discipline specific methods and develop reasoned conclusions of studies

AP US HISTORY

HIST 105 American History through 1877 (Approved for AP US History)

Course Description

A general survey from the Age of first contact through the end of Reconstruction, covering such major developments as the emergence and growth of the 13 colonies; the founding and organization of the nation-state; changing political, social, and economic patterns; and the origins and impact of the Civil War. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Demonstrate proficiency in analyzing primary and secondary sources through written assignments
2. Demonstrate proficiency in critical reading and thinking by providing written and oral evaluations of texts
3. Demonstrate an understanding of the conventions of grammar, proper citation, and style in writings produced for the course
4. Demonstrate knowledge of American history to 1876 through examinations, written assignments, and oral and/or digital presentation

HIST 106 American History Since 1877 (Approved for AP US History and AP World History)

Course Description

A general survey from the end of Reconstruction to the recent past. Major themes will be the development of American domestic politics; the nation's emergence as a world power; changes in American society, economy, and culture; and the influence of past events on contemporary life. 3 sem. hrs. 3 crs.

Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Demonstrate proficiency in analyzing primary and secondary sources through written assignments
2. Demonstrate proficiency in critical reading and thinking by providing written and oral evaluations of texts
3. Demonstrate an understanding of the conventions of grammar, proper citation, and style in writings produced for the course
4. Demonstrate knowledge of American history since 1877 through examinations, written assignments, and oral and/or digital presentation