

CORE CURRICULUM

Typically, colleges divide the four years of academic study into three categories of learning. Students usually take one third of their credits in a major, one third as electives, and one third in a college-wide curriculum that fosters the institution's central mission and values. The Core Curriculum prepares students to contribute as responsible, informed participants at every level in a democratic society. Domain level courses will engage students in:

- C Comprehending the possibilities and limitations of various fields of human inquiry;
- C Understanding the complex interplay of beliefs, values and practices that characterize disciplined systems of knowledge
- C Adopting diverse perspectives to function in our multicultural world.

CORE CURRICULUM REQUIREMENTS

TIER I CORE FOUNDATIONS

Critical Reading, Thinking, Writing	3 cr
Quantitative Reasoning	3 cr
Computing Technology/Problem Solving	3 cr
Language Arts	3 cr

TIER II CORE DOMAINS

Creative Arts (100-level and 200-level course)	6 cr
Human Heritage (100-level and 200-level course)	6 cr
Self & Society (100-level and 200-level course)	6 cr
Science & Technology (two courses - at least one must have laboratory)	7-8 cr

TIER III CAPSTONE EXPERIENCE 3 cr

TOTAL CORE CURRICULUM REQUIREMENTS **40-41**

COURSE LISTINGS

TIER I - CORE FOUNDATIONS

CRITICAL READING, THINKING, WRITING

ENGL 150 College Writing II **3 cr**
Reinforces college-level reading, writing, and revision skills. Emphasis is placed on rhetorical stance, textual analysis, and linguistic integrity.
Prerequisite: ENGL 100 or placement

QUANTITATIVE REASONING

MATH 102 Mathematics for Liberal Arts **3 cr**
Presents mathematics topics designed to promote mathematical problem solving, reasoning, decision making, and communication. Students will develop an understanding of the nature, purposes and accomplishments of mathematics. Topics selected from elementary set theory, logic, number theory, graph theory, voting theory, functions, difference equations, and geometry.
Prerequisite: None

CORE CURRICULUM

MATH 150 Precalculus

3 cr

Introduces topics necessary for the study of calculus. A detailed study of algebraic, trigonometric, exponential, and logarithmic functions and equations, and their applications to modeling real world problems. Topics are considered from analytical, graphical, and numerical points of view.

Prerequisite: Placement based on SAT scores and high school background

MATH 220 Calculus I

3 cr

Examines limits, continuity, the derivative, differentiation of elementary functions, applications of the derivative, and an introduction to the anti-derivative. The first of a four-part sequence.

Prerequisite: MATH 150, placement based on SAT and high school background, or department approval

MATH 232 Introduction to Statistics

3 cr

Examines descriptive statistics, probability, sampling theory, and inferential statistics. Mathematics majors cannot use this course for credit towards their major.

Prerequisite: None

COMPUTING TECHNOLOGY/PROBLEM SOLVING

CCCL100 Computing and Communication

3 cr

Prepares students to use a computer as a tool for communicating in the information age. Topics include a computer overview, file management, web pages and the Internet, and Office Suite application software including Word, Excel, Powerpoint, and Access.

Prerequisite: None

LANGUAGE ARTS

FREN 102 Elementary French II

3 cr

Improves fundamental skills of understanding, speaking, reading, and writing French. Students will increase their command of the standard topics of French grammar. Short readings will enhance understanding and appreciation of French-speaking cultures and provide topics of conversation. Second half of a one-year course. Conducted in French.

Prerequisite: FREN 101 or department approval

ITAL 102 Elementary Italian II

3 cr

Continues Italian 101. Speaking, listening, reading and writing skills are emphasized. Conducted in Italian.

Prerequisite: ITAL 101

SPAN 102 Elementary Spanish II

3 cr

Reviews first-semester Spanish and continues the comprehension and oral communication begun in Spanish 101. Intended for those who have already experienced a basic Spanish course. Conducted in Spanish.

Prerequisite: SPAN 101 or equivalent

TIER II - CORE DOMAINS

CREATIVE ARTS - The overall goals of the Creative Arts domain are to enable students to:

- C Accurately describe the sense data of which an artwork is composed or which it evokes via verbal or other formal prompts (e.g. meter);
- C Use the basic vocabulary of the art form(s) under consideration in order to describe the sense data of an artwork and to describe the techniques used in embodying forth the sense data;
- C Use accurate description of sense data and the basic vocabulary of the art form(s) under discussion to describe patterns of significance (meaning, effect) in the work of art itself (analysis and interpretation);
- C Understand how context is used to help interpret a work or art and should be able to use context in analysis and interpretation ("Context" includes other work by the artist, the biography of the artist, the zeitgeist of the age in which the work was produced, and artistic conventions of the time.)

CCCA 101 The Creative Arts: Methods and History

3 cr

What are the Creative Arts? How are they made, by whom, and why? What are some major examples of the arts? The course will attempt to answer these questions through an interdisciplinary study of the eight arts (pictures, sculpture, music, theatre, film, dance, architecture, and literature) and their relation to society in the past, in the present, and in the varieties of world civilizations.

Prerequisite: None

CORE CURRICULUM

CCCA 102 The Art of Madness

3 cr

Examines myths and realities of madness from the perspective of the creative arts (e.g., art, literature, film, poetry). Explores a variety of artistic forms from the viewpoint of the artist and observer in studying the dimensions of maladaptive traits and behaviors. Emphasis is on critical thinking and analysis of the subject matter, the creator and the artistic medium within which it is portrayed.

Prerequisite: None

CCCA 202 The Good Earth: The Theme of Agrarianism

3 cr

Studies agrarian themes and their importance by surveying literature, music, paintings and photography. Focuses on artistic perceptions of the Earth and human relationships to it. Explores agrarian traditions, values and beliefs. Includes a study of agrarian social, political and economic issues.

Prerequisite: None

CCCA 203 Inventing Modernism

3 cr

Surveys art works from this dominant twentieth century philosophy and arts movement by considering how its values and aesthetic ideals shaped film, painting, communication, fashion, theatre and architecture. Investigates such thinkers and artists as Freud, Gropius, Klimt and Schiele.

Prerequisite: None

CCCA 205 Popular Hollywood Films of the 1950's

3 cr

Uses the basic concepts and insights of the creative arts to examine the ways in which American popular film of the 1950's incorporates ideas and societal reality into its modes of representation. Explores the relationships between American films and American popular culture.

Prerequisite: None

CCCA 206 Rumi's Vision

3 cr

Studies the poetry, life, and times of the great 13th century Sufi mystic, Jelaluddin Rumi. For students who want to expand their horizons and explore a view of reality that is not based on secular materialism. Because of excellent modern translations, Rumi is rapidly becoming one of the most relevant and powerful poets of our time.

Prerequisite: None

CCCA 207 Children's Literature: A Lively Art

3 cr

Develops a critical understanding of the verbal and visual art of children's literature. Reflects major stories of world art and literature through two centuries of English language publications. Includes novels, short stories (including folk tales) and picture books. Readings will be placed in historical, cultural and literary contexts, with emphasis on techniques of writing and publishing as well as pedagogical philosophies.

Prerequisite: None

CCCA 209 Contemporary American Poetry & the Times

3 cr

Covers American poetry from the 1950's to the present and focuses on how American poetry reflected the cultural and political life in the United States from 1956 into the next millennium. Areas covered will be: poetry's connection with the other arts (particularly music and the visual arts), poetry and politics, poetry and race, and the resurgence of the oral tradition. Students will compose their own poems in order to better understand the creative process.

Prerequisite: None

ENGL 210 Essentials of Film

3 cr

Focuses on film interpretation by emphasizing elements such as light, sound composition, camera movement, acting, and direction. Initiates students into developments in film history, film genre, and film theory.

Prerequisite: None

ENGL 250 Introduction to Literature

3 cr

Seeks to develop each student's ability to understand and respond to a variety of literary texts by repeated practice in textual explication through discussion and written work. While most readings will be drawn from poetry, drama, and prose fiction, the course will also embrace, where appropriate, texts drawn from mass media. (English Communications majors may not take ENGL 250 to fulfill their Creative Arts Core Curriculum requirement).

Prerequisite: None

CORE CURRICULUM

ENGL 270 Literary Genre

3 cr

Examines the question of how an author's choice of a single literary mode, genre, or type affects the meanings of a text. May focus on plays, short stories, song lyrics, comedy, romance, novels, myths, or other genres. The specific genre to be examined will vary and will be identified by subtitle.

Prerequisite: None

MUSI 251 Introduction to Music

3 cr

Provides a general historical survey of music and introduces basic music theory. The objective of the course is to help students become conversant in the styles and genres of art music in the history of western civilization. Popular music styles are discussed in their historical context as well as for their influences on contemporary culture.

Prerequisite: None

PHIL 120 Art and Philosophy

3 cr

Adapts a philosophical approach to the experience, understanding, and critical assessment of the products and processes of the creative arts. Our inquiries will center on two traditional questions of aesthetic theory: What is art? And What is art's special value? This course will be more theoretical than hands-on, though direct, continued experience in the various creative arts will be encouraged and figure prominently in most discussions and assignments.

Prerequisite: None

HUMAN HERITAGE - The overall goals of the Human Heritage domain are to enable students to:

- C Apply critical and comparative approaches to primary and secondary sources;
- C Draw valid conclusions from documentary evidence and evaluate the significance of such conclusions;
- C Evaluate the significance of events, ideas, or circumstances in a given text both within their own and contemporary contexts

CCHH 101 Utopian Visions in Fact and Fiction

3 cr

Involves a study of Utopian visions of the past and present, both real and imaginary, and connects these visions to four major American protest movements. Incorporates sources ranging from the Declaration of Independence to the songs of Bob Dylan.

Prerequisite: None

CCHH 210 American Women Regionalist Writers

3 cr

Studies the texts of mid-to-late 19th century women regionalist writers in their historical, political, and social contexts. Students will read extensively in both primary and secondary texts of the period to heighten their understanding of how it is that literary history is both shaped and understood, as well as how these particular women writers resisted the then mainstream prescription for an American literary project.

Prerequisite: None

CCHH 221 Divine Witness

3 cr

Explores the history of revelation as a fundamental way of knowing. Reviews important moments in history when divine witness played a part in shaping civilizations or altering the prevailing sense of reality. Features readings from a variety of texts drawn from many spiritual and esoteric traditions.

Prerequisite: None

CCHH 223 The Great Depression

3 cr

Examines the historical, sociological, philosophical, literary, and other aspects of the American Great Depression of the 1930's. Examines the cause and effect of change in persistence during a time of national crisis. Readings are first-hand accounts, documentaries, narratives, and explanatory fiction.

Prerequisite: None

CCHH 224 The Nuclear Age

3 cr

Explores the history of nuclear weapons and nuclear-generated electricity. Considers these technologies from the perspective of national power and security, ethics, diplomacy, technical practicality, safety, and environmental consequences.

Prerequisite: None

CCHH 240 The Holocaust and the Nature of Prejudice

3 cr

Emphasizes helping students to personalize this material, to view the phenomenon of prejudice in their own lives and time and to glean the lessons of the Holocaust for the future. Finally, diverse materials will help students to view the Holocaust as a microcosm of history, of human nature and other timeless and universal issues.

Prerequisite: None

CORE CURRICULUM

ENGL 265 Literary Theme**3 cr**

Utilizing both primary and secondary literary and historical sources this course explores ways in which a selected theme continually reappears in literature. Texts are examined, interpreted and evaluated within historical contexts; critical and comparative approaches are used to draw conclusions regarding content and context. The specific theme to be examined will vary and will be identified by subtitle.

Prerequisite: None**HIST 104 Modern World Civilization****3 cr**

Provides an introductory, historical survey of the major events, ideas, and people which have shaped world civilizations since 1500, the beginning of the modern era of history. Takes a comparative, interdisciplinary, and non-Eurocentric approach to historical analysis, emphasizing diversity and global awareness.

Prerequisite: None**HIST 106 Latin American Civilization****3 cr**

Provides an explanation of the societies which emerged from the blendings of Native, European, African, and Asian peoples in the region now known as Latin America. Rather than historical chronology, emphasis is on themes such as ethnicity, family, religion, politics, arts and economics.

Prerequisite: None**HIST 203 American History I****3 cr**

Focuses on the development of American political, economic, social, philosophical, and cultural values and institutions from Colonial beginnings up to 1877. Sufficient emphasis will be placed on the Massachusetts and Federal Constitutions to meet the state requirement.

Prerequisite: None**HIST 204 American History II****3 cr**

Focuses on the development of American political, economic, social, philosophical, and cultural values and institutions from 1877 to the present. Sufficient emphasis will be placed on the Massachusetts and Federal Constitutions to meet the state requirement.

Prerequisite: None**PHIL 100 A First Course in Philosophy****3 cr**

Engages students in the critical investigation and reflective analysis of such fundamental philosophical questions as freedom and moral responsibility, the nature of being and knowledge, the existence of God and the problem of evil, and individual rights and social justice. Emphasizes the relevance that philosophy has to contemporary problems and encourages students to think, read, write and speak critically and thoughtfully.

Prerequisite: None**PHIL 101 History of Ideas****3 cr**

Provides a multidisciplinary approach to intellectual history, emphasizing the development of some of the major ideas whose consequences shape modern life, such as reason, nature, science, friendship, divinity, and freedom. Sufficient emphasis will be placed on the Massachusetts and Federal Constitutions to meet the state requirement.

Prerequisite: None**PHIL 110 World Religions****3 cr**

Examines basic texts, concepts, presuppositions, and ways of life of several major religious traditions. Drawing on both sacred texts and scholarly analyses as well as fictional and journalistic accounts, the course aims to understand and assess the meanings of religion in human life.

Prerequisite: None**PHIL 200 Logic and Critical Reasoning****3 cr**

Examines and applies the principles of cogent, sound, or critical reasoning and writing, leading to a deeper understanding of language and of the use of logical argumentation. Considers, in the context of real-life arguments and claims (in the rhetoric of philosophy, history, and other disciplines) formal and informal principles of clear and systematic thinking and writing.

Prerequisite: None

CORE CURRICULUM

SELF AND SOCIETY - The overall goals of the Self and Society domain are to enable students to:

- C Identify the values and assumptions in a particular social setting and compare them with one's own cultural context;
- C Utilize inter-disciplinary perspectives, theories and social science methods to analyze significant social issues;
- C Develop and present an analysis of the multiple factors that explain an individual's relationship to society.

ANTH 130 Introduction to Sociocultural Anthropology

3 cr

Introduces students to the basic concepts, theories, and methodologies of sociocultural anthropology. Creates an awareness of the wide spectrum of cultural variation throughout the world. Demonstrates that through the study of anthropology, we may not only gain an understanding of “exotic” cultures, but also of our own sociocultural experience.

Prerequisite: None

ANTH 140 Peoples of the World

3 cr

Examines the way of life of selected societies in various parts of the world. Explores patterns in human cultures as well as the uniqueness of particular societies. Considers whether or not it is possible to truly understand a culture other than one's own.

Prerequisite: None

BADM 100 Explorations in Business

3 cr

Introduces students to the basic functions of business and management through examination of contemporary issues in businesses and organizations. Topics include management of human and financial resources, production and marketing of goods and services, and legal and ethical issues in decision-making. Provides students with basic competencies in business communications and research methods, and illustrates both successful/unsuccessful decision-making.

Prerequisite: Open to all but Jr/Sr Business Administration majors

CCSS 101 Contemporary Issues in Society

3 cr

Identifies and analyzes significant social issues from one's own cultural context to gain a broader perspective of contemporary society. Explores four themes of understanding ourselves and our social context - people's origins, the socialization process, difference and inequality, and global connectedness. Examines these themes through multiple social science perspectives.

Prerequisite: None

CCSS 102 Snapshots of Society

3 cr

Compares theories about human origins and their place in the world. Explores the relationship between ourselves as individuals and the broader society. Examines how social forces shape our existence as selves of a particular race, gender, and class. Identifies key institutions and investigates the dynamics of power.

Prerequisite: None

CCSS 202 World Regions and the New Global Order

3 cr

Studies the economic, political, cultural, and physical characteristics of the major regions of the world and the countries within them; discusses how these regions and countries relate and interact at the international level.

Prerequisite: None

CCSS 205 Understanding the Self

3 cr

Explores the processes by which the sense of self, arguably unique to human beings, develops as a consequence of complex cognitive abilities exercised in social and cultural contexts. A detailed study of elements of self concept and processes of self-esteem and self-efficacy are examined from an interdisciplinary perspective.

Prerequisite: a 100-level Self & Society course

CCSS 210 Landscapes of Human Activities

3 cr

Provides an understanding of the fundamental identifying traits of a culture; the economic, social, and political systems and institutions societies erect; the cultural landscapes they create; and the impacts societies have on natural systems.

Prerequisite: None

CCSS 260 Schools, The Law and Society

3 cr

Enables students to explore legislation and judicial decisions affecting school policies. Covers separation of church and state, controversial curricula, and rights and responsibilities of students and teachers. Compares America with other cultures regarding equal access to education.

Prerequisite: a 100-level Self & Society course

CORE CURRICULUM

CCSS 264 Mathematics of Fairness and Equity

3 cr

Stresses the connections between contemporary mathematics and modern society by identifying important social problems and conflicts and applying quantitative methods to solve these problems or resolve conflicts. Utilizes the notion of “enlightened citizenry”, when students acquire broad knowledge of social problems and are able to apply quantitative methods to make personal judgements and decisions as well as challenge our basic assumptions regarding a social setting.

Prerequisite: None

CCSS 267 Real Men

3 cr

Provides the opportunity to examine and determine the validity of stereo-types as they apply to the image of the American male. Through the use of feature films and selected readings from various disciplines, most from the social sciences, the student will explore, describe, analyze and evaluate the concept, behavior, attitudes and characteristics of “Real Man”. The following film genre have been selected: The Wild West; Cops & Robbers; Sports.

Prerequisite: None

CCSS 268 Culture and the Body

3 cr

Examines the body as a universal experience, a historical and cultural creation, and an ethical issue with policy implications. Explores our understanding of the foundations of our treatment of the body, the relationship between socialization and body image, how bodily difference has been used as a basis for inequality, and the impact of globalization of the circulation of body images and the exploitation of bodies. Considers ways in which harmful practices have been challenged and modified.

Prerequisite: None

CCSS 269 Education and Society

3 cr

Studies the role of education as an institution in our society, the world and in our lives. Through the use of a wide variety of sources, students will become aware of the people and the historical events that played a role in the development of educational practices and issues and will be able to compare the myths to the realities of this major institution.

Prerequisite: a 100-level Self & Society Course

CCSS 270 Globalization: Myths and Realities

3 cr

Examines our growing economic, political, social and cultural interconnectedness. Reviews the history of the “globalization” concept. Analyzes corporate dominant model of globalization and “grassroots,” democratic model. Investigates key issues including the power of the World Bank, the role of the media in globalization, and the development of indigenous movements.

Prerequisite: None

CCSS 275 Aging and Society

3 cr

Examines societal aging from historical, psychological, and sociological perspectives. Analyzes changes in norms, roles, values, and attitudes concerning old people due to compositional changes in population. Economic and ideological factors that influence the development of social policies will be discussed.

Prerequisite: None

ECON 141 Macroeconomics

3 cr

Examines the organization of American economic systems, with comparisons to those of other countries. Emphasis is on the problems of unemployment, inflation, budget deficits, and the possible fiscal and monetary policies used to correct them. The course studies such aggregate economic variables as consumption, investment, government expenditures, and taxes.

Prerequisite: None

ENGL 204 Media, Self-Identity and Society

3 cr

Introduces the concepts of self-identity, examining it within the contexts of gender, sexuality, health and ethnicity across media and society. Using interdisciplinary approaches, it focuses upon themes which explore myths about identity through analyzing meanings in media and social/cultural texts; how these originate in and across history, to become part of everyday ‘common sense’ discourse.

Prerequisite: ENGL 150

ENGL 231 The Power of Words

3 cr

Explores the way words and symbols shape human thought, behavior, and institutions. Traces how meanings arise, why communication is hazardous, and what makes messages subject to misinterpretation. Provides useful tools for functioning in a world in which language can be misleading and even destructive.

Prerequisite: None

CORE CURRICULUM

POSC 201 Introduction to Political Science: American Government

3 cr

Introduces the major institutions of national and state government and the discipline of political science. Through observation and participation, students will develop an understanding of political behavior and the political processes in the United States.

Prerequisite: None

POSC 202 Introduction to Political Science: Comparative Government

3 cr

Provides a comparative introduction to world political cultures and the discipline of political science. Through an interdisciplinary study of various nation-states students will develop an understanding of political behavior and the operation of government institutions.

Prerequisite: None

PSYC 100 Introduction to Psychology

3 cr

Introduces students to the science of psychology, presenting basic principles of mental processes and behavior. To introduce the process of empirical investigation, research participation is required.

Prerequisite: None

PSYC 230 Social Psychology

3 cr

Examines human social behavior, emphasizing environmental and situational factors. Theoretical and applied issues are considered within selected topics. (Psychology majors cannot receive core Self & Society credit for PSYC 230).

Prerequisite: PSYC 100, SOCI 100 or a 100-level Self & Society course

SOCI 100 Introduction to Sociology

3 cr

Introduces the major concepts and methods of sociology. Examines the elements of social organization, sociological approaches to the analysis of groups, and the relationships among the major institutions of society.

Prerequisite: None

SOCI 201 Social Problems

3 cr

Studies problems and disorganization in modern industrial society such as: poverty, racism, sexism, environmental pollution, militarism, and family issues.

Prerequisite: SOCI 100 or a 100-level Self & Society course

SOCI 210 Families

3 cr

Explores contemporary American families (the forms they take, the functions they serve, the problems they face) within the context of families of other historical time periods and other cultures. Presents an interdisciplinary examination of topics such as: gender roles, marriage, divorce, and blended families, nonmarital lifestyles, parenting, family policy, and technology's impact on family life.

Prerequisite: SOCI 100, or any other 100-level Self & Society course

SOCI 282 Deviant Behavior

3 cr

Analyzes social definitions of deviance, responses to deviance, and explanations of the causes of deviance. Examines drug and alcohol use and abuse, mental illness, sexual difference, and other issues frequently treated as deviant.

Prerequisite: SOCI 100

SOCI 295 Social Change and the Future

3 cr

Analyzes change in social institutions and societies. Focuses on social movements and revolutions in historical and comparative perspective. Considers how our understanding of social change helps us in predicting the future and making sense of issues that are likely to arise.

Prerequisite: SOCI 100 or a 100-level Self & Society course

SCIENCE AND TECHNOLOGY - The overall goals of the Science and Technology Domain are to enable students to:

- C Identify and analyze fundamental knowledge of a natural science discipline;
- C Apply key elements in the scientific method as demonstrated by critically evaluating scientific writings;
 - For lecture portion of courses: Demonstrate appropriate communication skills through writing and/or speaking;
 - For lab courses: Demonstrate appropriate technical writing skills through lab reports (communication abilities);
- C Demonstrate mathematical problem-solving abilities within the context of the course.

CORE CURRICULUM

BIOL 100 Concepts in Biology

4 cr

Provides non-major knowledge of basic biological concepts. Concepts in Biology deals with the development of concepts in the biological science of life. Among the areas to be studied are evolution, genetics, and developmental biology; all deal with the fundamental characteristics of life: its ability to replicate over time. Required Laboratory.

Prerequisite: None

BIOL 105 Human Biology

3 cr

Provides students with the knowledge about the structure and function of the human body. The student will develop the ability to critically evaluate a large number of issues in this field, as presented in scientific publications and the news media. The student will gain a foundation essential for making knowledgeable decisions regarding quality of life. Students will be encouraged to share experiences based on their own culture and gender.

Prerequisite: None

BIOL 150 Foundations in Biology

4 cr

Introduces the student to cell biology, mitosis, meiosis, genetics, photosynthesis, respiration and cellular organisms. Required Laboratory.

Prerequisite: None

BIOL 255 Biodiversity

4 cr

Focuses on global, regional and local patterns of biological diversity and the processes that influence these patterns. Central to discussions of biodiversity pattern and process will be the relevant scientific principles from ecology, evolution, and conservation biology. The impact of humans on natural systems and biodiversity loss will also be discussed. Specific case studies will be used to illustrate biodiversity loss and proposals to protect and restore biodiversity.

Prerequisite: None

CCST 101 Basic Concepts in Physics and Chemistry

3 cr

Examines the major developments in physics and chemistry from a historical context as a foundation for understanding future developments in the sciences. Evaluates current scientific results in an informed manner. Intended for non-science majors, course concepts will be applied to contemporary issues.

Prerequisite: None

CCST 102 A Case Study Approach to Science

3 cr

Introduces students to the use of the scientific method in various scientific settings. Using the case study method, students will cover a diverse range of topics which may include such topics as: the effects of radiation on biological systems, cancer, and waste water treatment.

Prerequisite: None

CCST 103 Quarks to Quasars

3 cr

Develops the students' understanding of the physical universe, from the smallest constituents of matter to the most distant, energetic structures known. In between the student will come to know how the scientific method guides us as we seek new knowledge. Conservation laws, the relationship between energy and matter, the need for mathematics and the inexorable links between the various branches of science will be considered.

Prerequisite: None

CCST 104 How Things Work

3 cr

Examines everyday objects such as microwave ovens, eyeglasses, Xerox machines, and CD players, and learn how they work. In order to facilitate understanding of the workings of modern objects, the course will cover basic concepts in physical science, including force and motion, thermodynamics, electricity and magnetism, and light.

Prerequisite: None

CCST 230 Energy and the Environment

4 cr

Looks at the impact of current energy usage on our environment from technical, social, and political viewpoints. Investigates the present and projected usage of nonrenewable fuel sources and how modifications due to alternate energy techniques will affect current energy policy. Discusses possible large-scale alternate energy methods. Investigates the scientific aspects of such topics as global warming and ozone depletion. Required laboratory.

Prerequisite: None

CORE CURRICULUM

CCST 244 Neuroscience: Sleep and Dreams

4 cr

Applies the multidisciplinary field of neuroscience to explore basic processes involved in sleep and dreaming. Critical analysis of current scientific research in psychology, biology, and chemistry make use of the scientific method. A required laboratory provides students with opportunities to collect and analyze psychophysiological data.

Prerequisite: None

CCST 249 The Science of Behavior

4 cr

Provides a comprehensive overview of the scientific investigation of behavior and its relation to genetic, physiological, environmental, and social variables. Discussions will center on the theory and experimentation that has led to our current understanding of behavior. Required laboratory.

Prerequisite: None

CHEM 150 Introduction to Chemistry I

4 cr

Studies chemical principles, theories, laws and their applications. Topics include electronic and nuclear behavior, periodicity, stoichiometry, structure, and bonding. Teaches laboratory techniques through the performance of experiments related to the above topics. Required Laboratory.

Prerequisite: None

CHEM 152 Introduction to Chemistry II

4 cr

Studies chemical principles, theories, laws and their applications. Topics include oxidation and reduction, kinetics, thermodynamics, equilibrium, and descriptive inorganic chemistry. Teaches laboratory techniques through the performance of experiments related to the above topics. Required Laboratory.

Prerequisite: CHEM 150

CHEM 242 Chemistry and Its Relation to the World

4 cr

Examines fundamental principles of chemistry, the historical development of chemical theories, and how chemistry relates to other scientific disciplines. Topics include the environment, forensic laboratory quality, adverse drug interactions, and perchlorates in water. Laboratory experiments illustrate chemical concepts and how scientific conclusions are derived from laboratory results.

Prerequisite: None

ENVI 101 Introduction to Environmental Studies

4 cr

Introduces contemporary problems resulting from human activity in the natural environment, emphasizing the theme of human ecology with interconnections in nature, energy, biodiversity, land use, air pollution and climate change, water supply and pollution, and solid and hazardous waste. The course includes field trips, research, and reporting. Students develop broad awareness as they learn teamwork and design problem solving strategies. Required Laboratory.

Prerequisite: None

GEOG 151 Introduction to Physical Geography

4 cr

Studies the natural environment from a geographical perspective. Analyzes the distribution and character of environmental elements, including weather, climate, landforms, soils, and vegetation. Examines consequences of human intervention in natural systems. Required Laboratory.

Prerequisite: None

GEOG 152 Introduction to Physical Geology

4 cr

Studies the earth, including the origin and types of earth materials, volcanism and crystal deformation, external earth processes and development of landscapes, geological resources, and geological processes as natural hazards. Required Laboratory.

Prerequisite: None

GEOG 245 Natural Hazards

4 cr

Studies natural processes which are hazardous in the context of human activities, including relevant geologic, geomorphic, climatic, and meteorologic phenomena; examines the origin and significance of selected hazards from natural and human perspectives and explores how people underestimate or misjudge risk. Required Laboratory.

Prerequisite: None

GEOG 270 Weather and Climate

3 cr

Examines general meteorological and climatic characteristics through space and time, especially as influenced by temperature, wind, and moisture. Explains atmospheric disturbances at planetary, regional, and local scales.

Prerequisite: None

CORE CURRICULUM

GEOG 271 Landforms

3 cr

Examines the description, origin, classification, and interpretation of landforms. Analyzes geologic, climatic, and biologic factors as landform controls and shows that certain geomorphic processes are natural hazards.

Prerequisite: GEOG 151 or GEOG 152

PHYS 120 Introduction to Engineering

4 cr

Introduces students to basic scientific methodology, current problems and fundamental principles of engineering design. Intended for nonscience majors and potential engineering students. Required laboratory introduces fundamental science and engineering principles through collaborative projects such as robotics.

Prerequisite: None

PHYS 131 General Physics I

4 cr

The first of a two-semester sequence, designed primarily for students in the biological and health sciences and others who desire a rigorous but non-calculus based course that presents a complete introduction to physics. Covers vectors, one and two dimensional motion, Newton's laws, and rotational motion, conservation of energy and momentum, gravitation, wave motion, sound, heat, and thermodynamics. Required Laboratory.

Prerequisite: None

PHYS 132 General Physics II

4 cr

The second of a two-semester sequence, designed primarily for students in the biological and health sciences and others who desire a rigorous but non-calculus based course that presents a complete introduction to physics. Covers geometrical optics, electricity and magnetism, electronics, modern physics, relativity. Required Laboratory.

Prerequisite: PHYS 131

PHYS 151 Introduction to Physics I

4 cr

Presents a unified view of physics including dynamics, statics, forces, work and energy, the conservation laws, vectors, experimental techniques. For those wishing an in-depth understanding of natural laws. Required Laboratory.

Prerequisite: None

PHYS 152 Introduction to Physics II

4 cr

Continues the studies of Introduction to Physics I. Rotational dynamics, angular momentum, moment of inertia, simple harmonic motion. Waves, acoustics, heat, and thermodynamics. Required Laboratory.

Prerequisite: PHYS 151 or department approval

PHYS 220 Astronomy

4 cr

Looks at historical and modern aspects of astronomy. Topics covered will include: Earth-Moon System, solar system, galaxy, observable Universe, as well as current research in astronomy, including quasars, pulsars, black holes, and the search for extraterrestrial life. Required Laboratory, observing sessions.

Prerequisite: None

TIER III - CAPSTONE EXPERIENCE

CCAP 300 Capstone Seminar

3 cr

Challenges students to integrate knowledge from several disciplines, applying academic learning and critical thinking skills to modern-day issues. Encourages students to work with others and become engaged citizens in the context of today's world.

Prerequisite: Instructor permission