Course Descriptions

ENGLISH COMPOSITION/ENGLISH LITERATURE

Composition (CAP): Offered in the first semester, this course focuses on the student's ability to develop a strong thesis, to write clear prose, and to persuade an audience through the expository and critical essay forms. Research methods and persuasive writing are used in the preparation of several research papers. As in the same course at St. Joseph's College, students write a variety of essays, study grammar, and explore the interrelationships among writing, thinking, and speaking. In addition to weekly written assignments, the course requires long-term projects that necessitate careful planning. Successful completion of this course qualifies a student for 4 hours of transferable college credit from St. Joseph's College of Maine.

English Composition: During the first semester, Composition is taught uniformly, with an emphasis on writing and grammar. Students will also read selections from various genres, including short stories, novels, and dramas. Class discussions and frequent writing assignments are related to the reading, and all students are required to produce a research paper.

English Literature: Upon successful completion of the first semester, students will choose among the following second semester electives: 20th Century American Literature, Literature of the American Pastime, Our Story in Verse – Modern US Poetry, Southern Gothic in Literature, Race & Gender in Literature, Narrative Literature, and Transformative Literature.

Literature (CAP): Offered in the second semester as part of the CAP English sequence, this course explores literature through the examination of a variety of texts. Students work to improve their abilities to appreciate, understand, and interpret literature, and are given extensive practice in reading and writing analytically. Successful completion of this course qualifies a student for 4 hours of transferable college credit from St. Joseph's College of Maine.

Public Speaking: Public Speaking is a one-semester course that covers the theory and practice of public speaking. Building on traditional rhetorical themes while recognizing the unique challenges of contemporary public speaking, the course guides students through topic selection, organization, language, and delivery. Working independently and with peer groups, students will be actively involved in every step of the process of public speaking preparation and execution. Assignments include formal speeches, brief extemporaneous speeches, analysis of historical speeches, and evaluations.

MATHEMATICS

Accelerated Calculus (CAP): Accelerated Calculus is a full-year course that focuses on limits, derivatives, anti-derivatives, their applications, advanced techniques in solving these types of problems, and the properties and use of power series. This course parallels the two-semester sequence course taught at the University of Southern Maine, Calculus A (MAT 152D) and B (MAT 153) and may qualify a student for 4 hours of transferable college credit each semester.

Advanced Algebra II & Trigonometry: Advanced Algebra II & Trigonometry is a full-year course. The course begins with a review of algebra and topics covered include properties of and operations with real numbers; algebraic expressions; operations with polynomials, including expansion and factoring; solving linear algebraic equations and inequalities; modeling with linear equations; and graphing. The

second quarter begins with an introduction to functions and their graphs, including combinations of functions, inverse functions, quadratic and polynomial equations, and rational equations. During the second semester students explore exponential and logarithmic equations and the properties of logarithms, and multivariable systems of equations and inequalities. Also, during the second semester, an extensive study of trigonometry is covered, including right and non-right triangle trigonometry, trigonometric functions and their application to periodic phenomena, and analytic trigonometry.

Calculus (CAP): Calculus is a full-year course. This course is modeled on the first-year calculus course (MAT 152D) taught at University of Southern Maine (USM). The topics include analytical geometry, functions, continuity, limits, derivatives and application, and integrals and applications. Successful completion of this course may qualify a student for 4 hours of college credit through the University of Southern Maine.

Linear Algebra: Linear Algebra deals with studying linear systems of equations, linear transformations, vector spaces, and the reasoning necessary for understanding these topics on a theoretical level. In particular, this course deals heavily in the properties and manipulation of matrices, along with the mathematical theory behind how this machinery works. The methods covered in this class are important tools to help understand a variety of problems or procedures in STEM fields. The course begins by understanding how to treat a vector space and a basis. It then focuses on matrix algebra, determinants, and eigenvalues/eigenvectors. While the main focus will be on theory and computation, we will spend time examining some physical examples of linear transformations and eigenvectors. This course will cover material with rigor similar to a 200-level college course.

Multivariable Calculus: Multivariable Calculus takes many of the principles students learn in Calculus I and II and generalizes them to consider more than one variable or higher dimension spaces. It gives a strong foundation for higher level study in physics, engineering, economics, and a variety of other STEM and social science fields. In this course, students will begin to understand the concepts and theory behind many of the procedures, while also studying and understanding their applications graphically, with particular attention to the physical sciences. The main goal will be to take the interpretation of calculus as the study of change and apply it to systems operating in two or three dimensions. To this end, we will look at vectors, curves, and surfaces in 3-space before moving on to limits and differentiation, along with their applications, in more than one variable. After this, we will study double and triple integrals, line and surface integrals, and a number of other tools that will help to generalize and understand many of the key principles of calculus. The material in this course is intended to be similar to its equivalent 200-level college course.

Precalculus: Precalculus is a full-year course. This course provides the mathematical background necessary for calculus. Topics include equations and inequalities, functions and graphs, exponential, logarithmic, and trigonometric functions, and identities and inverse functions.

Statistics (CAP): Statistics is a full-year course. To ensure students have the necessary mathematical background to be successful in this course, the course begins with a review of algebra during the first quarter. Topics include properties of and operations with real numbers, algebraic expressions, operations with polynomials including expansion and factoring, solving linear algebraic equations and inequalities, modeling with linear equations and graphing. The probability and statistics portion of this course begins during the second quarter. It is designed to acquaint students with statistical methods of data analysis. Topics include descriptive statistics, probability and probability distributions, hypothesis testing and statistical inference, analysis of variance, and regression. Successful completion of this course may qualify a student for 4 hours of college credit through the University of Southern Maine.

COMPUTER SCIENCE

Business Technology Applications*: Business Technology Applications is a one-semester course designed to assist students in developing technological proficiencies related to preparing documents for publication, page layout, data structures, spreadsheets, digital presentations, communications, internet use and ethics. A major emphasis is placed on guiding students through real-world experiences to aid in

the understanding of business applications. Simulations and projects promoting teamwork and leadership offer students further opportunities for application of knowledge and skills useful in the workplace.

Digital Media Productions (CAP)*: This one-semester computer science course introduces students to creating, acquiring, editing, and delivering computer-generated media. Work includes graphics, photography, sound, music, video, and interactive hypermedia. Students use a range of tools to acquire, manipulate, and store the original content they create. The equivalent of CO 110 at St. Joseph's College; this course carries 4 credit hours upon successful completion.

Graphic Design (CAP)*: Graphic Design is a course that will introduce students to the design process as it pertains to digital imagery. Focus is placed on the creation process and the idea of storytelling through digital design. Software applications such as Adobe Photoshop and Illustrator are used to simulate real world labs and design experiences. Techniques such as layering, selecting, enhancement, composting, path and pen skills are taught, as well as the fundamentals of graphic design. Successful completion of this course may qualify a student for 4 hours of college credit through Saint Joseph's College.

SCIENCE

Advanced Human Nutrition (CAP)*: CAP Nutrition is a college-level nutrition course, which focuses on the interrelationship between nutritional practices and human physical performance in sports and fitness. Topics include the role of carbohydrates, fats, proteins, vitamins, minerals and water on both everyday eating and physical performance. This course provides a foundational science background in chemistry, anatomy and physiology, and microbiology in the context of human nutrition, as well as hands-on lab experiences. Upon successful completion of CAP Advanced Human Nutrition, students may earn 4 credit hours from Saint Joseph's College.

Anatomy: The Anatomy course at Bridgton Academy is designed to provide a broad appreciation for the structural organization of the human body and to relate the organization to regional and systems-related functions. Specific study is applied to bodily movements and the kinesiology required for physical movement. Students are provided multiple resources for study, including Netter's *Atlas of the Human Body*, Delevier's *Strength Training Anatomy,* and Netter's *Anatomy Coloring Book*. Coursework consists of lectures, lab activities, quizzes, two exams and an oral presentation on kinesiology.

Astronomy: Astronomy covers the major topics of the content area through hands-on investigations, which allows students to learn in an interactive and meaningful way. This course focuses on the historical perspective of modern astronomy, from Galileo's crude refracting telescope to the Voyager probes and the futuristic James Webb Space Telescope. This course investigates the motions of the sun, earth, and moon systems, as well as provides an examination of our sun and the stellar progression of stars. Additionally, students investigate the celestial bodies outside of our solar system and discover the mysteries of quasars, black holes, and dark matter.

Ecology of the Lake Region: Ecology of the Lake Region provides students with a broad understanding of the science of ecosystems, as well as evolutionary ecology. The study of ecosystems integrates information from physics, chemistry, and biology to provide the necessary information to understand controls on photosynthesis, decomposition, and nutrient cycling across diverse terrestrial and aquatic landscapes. Students have the opportunity to get outside and examine the local environment as a model for the study of symbiosis, biodiversity, animal behavior, mechanisms of evolution, and basic models of population genetics.

Genetics (CAP): Genetics is a science elective that provides an understanding of the kinds of questions that science can and cannot address, while exploring topics in cellular biology, the structure and function of genes, and biotechnology. Discussions probe the bioethical implications of our growing

knowledge and application of technologies involving manipulation of cellular and genetic processes. This course also includes experiences in a laboratory setting to conduct basic experiments that elucidate the structure of cells and the function of genes. Successful completion of this course may qualify a student for 4 hours of transferable college credit from Saint Joseph's College.

Human Physiology: Human Physiology is a single semester science elective. Physiology, by definition, is the study of normal function within living creatures. The human body is made up of an integrated set of systems. In this course students examine the cellular and molecular interactions going on inside the human body systems. In doing so, it is possible to understand how a body system works and what role each individual type of cell or organ plays in the function of the body as a whole. For example, what is happening inside cells, tissues, and organs when the body responds and adapts to disease, or to a change in diet or exercise? The course is excellent preparation for careers in health or biomedical professions, or it can simply serve to inform you about your own body and how it works. Laboratory exercises provide hands-on opportunities to understand concepts in a more concrete and tactile way.

Introduction to Environmental Issues: Introduction to Environmental Issues examines, in a one-semester elective, the origins of and solutions to pressing current environmental issues. A comprehensive, multidisciplinary approach to environmental problem solving is stressed, and students will explore the scientific, legal, economic, and social aspects of the issues in order to better understand the complexity of these problems.

Meteorology: Meteorology is an introductory course that explores the composition, structure, and physical properties of the Earth's atmosphere. The course focuses on the basics of heat balance, atmospheric stability, precipitation processes, and understanding the importance of clouds. Cyclonic activity, weather analysis, and very basic weather forecasting techniques are also studied. Particular attention is paid to the causes, structure, and impact of tornadoes, hurricanes, thunderstorms, and other severe weather systems.

Medical Microbiology (CAP): Microbiology is a CAP course that concentrates on the physiology and pathogenicity of microorganisms, primarily bacteria and viruses. An introduction to epidemiology explores the distribution and control of disease in populations. Learning the key features of the immune response allows students to understand how they are able to combat invading microorganisms. Laboratory investigations include methods of microbial culturing, Koch's postulates, and horizontal gene transfer. Successful completion of this course may earn students 4 hours of college credit from Saint Joseph's College.

Principles of Human Nutrition*: Principles of Human Nutrition is a one-semester elective that covers the scientific principles of human nutrition in maintaining health and preventing disease. Nutrient requirements of the human body, biochemical functions, and interrelationships of nutrients are examined. Athletes learn how to fuel their bodies for building muscle, optimal sports performance, and for general health and well-being. Nutritional misconceptions and controversies are evaluated using readings, discussions, and hands-on lab experiences.

SOCIAL SCIENCE/HISTORY

American Civil War: American Civil War course begins with the study of the causes of the Civil War, and moves through an exploration of the war, its battles, and the social climate of America during the War. As we celebrate, seemingly daily, the anniversaries of a multitude of momentous events that occurred during this pivotal era, this class looks to put these events into a usable current context. The course format combines lectures and discussion. Reading is expected both in the text and through access to outside sources.

Cultural Anthropology: Cultural Anthropology addresses what it means to be human by documenting human systems, institutions, and ideologies. Cultural anthropologists explore topics

including social organization, economies, political and legal systems, traditions, religions, language, health, and social change. In our modern world of nationalism and climate driven migration, understanding cultural relativism helps provide tools for conflict resolution and successful cohabitation of our planet.

Current Political Issues: Current Political Issues examines contemporary issues and events in the political arena. The focus of the course is to create a dialogue shaped around the "hot-button" issues that seem to be so prevalent in the 21st century. Student evaluation is based upon a genuine effort to grapple with the issues, generate a portfolio of quality written work, and contribute to a positive exchange in the classroom.

Experiences in 21st Century Leadership*: Great leaders are people who influence and empower others and are able to think strategically and critically to impact the world around them. This one semester elective course provides students with an opportunity to learn about their strengths and put them to use via on and off campus community programs. This course asks students to assess strengths and weaknesses, learn basic budgeting skills, visit large and small businesses, and explore a variety of leadership philosophies all while developing our group dynamic.

History of New England: Since its formation, the New England region has managed to maintain an identity broadly American, yet somehow also distinctly New England. This course examines the New England region's geographical, historical, cultural, and political histories. Topics include native people, Plymouth Colony, witchcraft in Salem, the Minutemen and the American Revolution, 19th century industrialization and immigration, New England's contribution in the Civil War, and significant events of the 20th century and beyond. Analysis of local historical sites serves to deepen understanding of New Englanders' enduring attachment to its past.

Introduction to Psychology (CAP): This course serves as an initial overview of the field of psychology and introduces students to prevalent historical and current topics in the field. Through a combination of audiovisuals, lectures, and discussions, students will better understand the foundations of psychology and its application to our world today. Topics may include motivation, memory, cognition, personality, and social behavior. Successful completion of this course may qualify a student for 4 hours of college credit through Saint Joseph's College.

Introduction to Sociology: Introduction to Sociology examines the relationship between a person's private life and the social world around him, specifically that personal, everyday experiences affect and are affected by the larger society in which we live. The true value of sociology lies in this unique ability to show the two-way connection between our personal thoughts, behaviors, and experiences to the groups, organizations, and cultures to which we belong. We will examine significant past, present, and potential future events that can influence the way we live our everyday lives.

Modern U.S. History: This course begins with the entry of the United States into World War II. The war and the post-war economy changed virtually every aspect of American life, from labor to industry to the broadened perspective of citizens. Veterans received money to buy homes and attend college, and young families began having children in record numbers. As the American Dream became more attainable for many, other Americans - particularly minority groups and women - more actively sought to win their full freedoms during the following years.

In this course, emphasis is given to the politics and assassinations of the 1960s, the rising global involvement of the United States, the Cold War, the Civil Rights movement, Vietnam, Watergate, the rise of conservatism, the AIDS crisis, globalization, the War on Terror, and our modern technological era.

Sports Psychology: Sports Psychology explores the various psychological factors that influence sport performance. Students examine both the scientific theory and the practical application of this knowledge to human performance. Major topics include issues in confidence, anxiety, motivation,

leadership, and personality. Students learn what is relevant to their own experiences in all achievement related contexts, not just the athletic environment.

U.S. Society in the Vietnam Era (CAP): U.S. Society in the Vietnam Era explores the complex dynamics and diverse aspects of American society during that era (1960 – 1975) and the emergence of rights consciousness. Events in this era transformed American perceptions of freedom, foreign policy, race, equality, politics and legal identity, and they continue to have repercussions into the present. The course examines President Johnson's Great Society, the civil rights movement, the Women's Liberation Movement, the Vietnam War, and political activism.

World Cultures and Civilizations: World Cultures and Civilizations is a one-semester elective that offers a regional survey of Earth's geography and cultures, with particular focus given to the Middle East, Africa, and Asia. Topics covered include country locations and their physical, political, economic, and cultural landscapes.

World War II: In this one-semester elective, the various causes of the Second World War are examined. Students examine the causes of World War II, beginning with the period following World War I. The course examines World War II through personal accounts of those who lived through these events to have a better understanding of the implications of war.

FINE ART

Introduction to Film*: In this semester-long class, students critically analyze films based on conceptual understanding of types of film and film styles. Students explore the difference between narrative and non-narrative forms, mise-en-scène, types of framing and shots, as well as the impact of editing, sound, and style on cinematic productions. Students also learn film history, from early cinema and the development of classical Hollywood cinema, through to modern cinema. In this course, students also spend time exploring films outside of traditional Hollywood-type films.

Introduction to Theatre*: Introduction to Theatre explores the historical evolution of drama and theatre from Ancient Greece to modern times. Students will be able to answer the question, "What is theatre?," identify elements of a theatrical production, analyze scripts, and evaluate how theatre reflects society. Students also have the opportunity to view local productions, as well as perform scenes of their own.

Music Production*: This class will explore the inner workings of music production. The goal is to advance the understanding of music and the systems used to create quality sound. Music from a plethora of genres will be discussed, as well as how to break down the intricacies inside the production process. This class will look at common musical patterns and sound editing through math, feeling, and practice.

Please note: Courses marked with an asterisk (*) are not NCAA-approved.