

High School Summer Scholars Program

2017 Course Listings

Session A (June 11-July 15)

Please note the following:

1. These course listings are subject to change and cancellation without notice.
2. Students are permitted to enroll in a maximum of 7 units.
3. Students must meet all prerequisites listed in order to enroll in a course.

AMERICAN CULTURE STUDIES

SOCIAL PROBLEMS AND SOCIAL ISSUES

Through a sociological lens, this course examines the causes and consequences of pressing social problems in America, including drug abuse, crime, poverty, racism and sexism, the health care crisis, globalization and inequality, and environmental degradation. Interventions guided by sociology and other social sciences will be offered. This course will be of special interest to those with career goals in medicine and health care, social service, law, and public policy. Attendance mandatory during the first week.

Prerequisite: None

Session A
L98 120 (3 units)
MTuWThF 1:00p-2:45p

ANTHROPOLOGY

INTRODUCTION TO HUMAN EVOLUTION

This course is a survey of the fossil evidence for human evolution. The course includes discussion of the genetics of human variation and evolution, the study of living nonhuman primates, and the fossil record and its interpretation. An evolutionary perspective is used in an attempt to understand modern humans from the naturalistic point of view. This course may include off-campus field trips.

Prerequisite: None

Session A
L48 150A (3 units)
MTuWThF 11:00a-12:45p

INTRODUCTION TO CULTURAL ANTHROPOLOGY

This course covers the basic concepts and theoretical principles of sociocultural anthropology. Course material is presented from Asia, Africa, Melanesia, Latin America, and North America.

Prerequisite: None

Session A
L48 160B (3 units)
MTuWThF 3:00p-4:45p

ART HISTORY

HISTORY OF WESTERN ART, ARCHITECTURE & DESIGN

A history of the visual arts, including architecture, sculpture, painting, and design, from the ancient world to the present with emphasis on the relationship of art to society and to political and cultural events.

Prerequisite: None

Session A
L01 113 (3 units)
MTuWThF 1:00p-2:45p

BIOLOGY

INTRODUCTION TO PROBLEM-BASED LEARNING IN BIOLOGY

Have you ever wondered how doctors and scientists diagnose and discover cures to modern human afflictions? In this course, students will be given a general topic and break up into small groups to research questions related to that topic. We will all report back to the group each week with what we've found, and provide each other with interesting facts about our topic, as well as hints for conducting inquiry-based research. The instructor will guide students on how to conduct in-depth research on problems of current biological importance using a variety of web-based search engines and library tools, with a strong emphasis on learning how to read and interpret primary research articles. Weekly topics from previous years have included psychological disorders, genetics of sleep regulation, reproductive therapies, alternative medicine, and human evolution. Students should have broad interests and background in general biology and chemistry and should be curious, exploratory, interactive, and willing to try an active, nontraditional educational experience. There are no exams, so grades will be based on class participation, weekly group presentations, written outlines, and a final iSearch paper on a topic of their choice.

Prerequisite: high school honors or AP biology

Session A
L41 112 (3 units)
MWF 9:00a-12:00p

GENERAL BIOLOGY I

First part of a two-semester rigorous introduction to basic biological principles and concepts. This course covers the molecular and cellular basis of life, bioenergetics, signal transduction, DNA and protein synthesis, and the function of whole organisms (physiology). Laboratories include traditional wet labs as well as inquiry-based, on-line labs.

Prerequisite: high school honors or AP chemistry

Session A
U29 101 (4 units)
MWF 6:00p-8:30p and TuTh 5:00p-9:00p

INTRODUCTION TO ANATOMY AND PHYSIOLOGY I

This is the first of a two-semester sequence that examines all major organ systems in the human/mammalian body. The emphasis is on understanding normal function and processes at the gross, cellular, and molecular levels. The course also addresses pathology and disease. Course covers histology, bone, muscle, and nervous systems, including sensory function and the special senses.

Prerequisite: None

Session A
U29 322 (5 units)
TuTh 9:00a-12:00p and TuWTh 5:30p-9:20p

BUSINESS

DESIGN THINKING: HUMAN-CENTERED APPROACHES TO MAKING THE WORLD

This course provides an overview of approaches to design thinking: a process of identifying, creating, and implementing solutions. Through an experiential approach, students learn methods for understanding users' needs, synthesizing complex information, identifying directives for design, generating ideas, prototyping, and communicating solutions. Methodologies will reflect multiple areas, including design, engineering, business, and anthropology. The class operates collaboratively tackling a locally relevant problem, such as active transportation or waste management. Students also explore the role of this process in business, organizations promoting social change, and education through readings, case studies, lectures, guest speakers, discussion, and written exercises. No previous experience in design is required. Limited space available in this course.

Prerequisite: None

Session A
U44 290 (3 units)
MTuWThF 3:00p-4:45p (this course is currently full)

CHEMISTRY

GENERAL CHEMISTRY I

Fundamental chemical principles and their applications. Atomic and molecular theories. Law of chemical combination. Periodic classification of the elements. Properties of gases, liquids, solids, and solutions.

Prerequisite: AP chemistry, honors or AP physics, and two years of high school mathematics (AP Calculus AB preferred)

Session A
L07 111A (3 units)
MTuWThF 9:00a-10:45a

DANCE

BODY-MIND BALANCE

This class encourages the calming of the critical mind and the awakening of the physical senses. Employing theories and practices of Yoga, contemporary movement sciences, current body-mind and relaxation techniques, this class emphasizes body awareness and deep mindfulness. Students should wear comfortable clothing and bring a mat or towel. This course is available as Pass/Fail only.

Prerequisite: None

Session A
U31 119 (1 unit)
MW 5:30p-7:15p

EARTH AND PLANETARY SCIENCES

GEOLOGY OF NATIONAL PARKS

Survey of geologic processes occurring at the Earth's surface and its interior using national parks and monuments as the prime venue for presentation. Volcanism and mountain-building; the work of streams, glaciers, and wind; lake and coastline development; stratigraphy and sedimentation; and Earth history. Material presented in a geographic context, with emphasis on landforms and landscape evolution, relating geology to the development and settlement of the U.S.

Prerequisite: None

Session A
L19 118A (3 units)
MTuWThF 9:00a-10:45a

EAST ASIAN STUDIES

TOPICS: JAPANESE POPULAR CULTURE

This course introduces students to the world of popular culture in contemporary Japan. With an eye upon historical and social contexts, we will explore a wide variety of media-manga (comics), anime (animation), literature, and art-and the role of pop culture in daily life, fashion, film, and music. We will also consider the interplay of Japan's popular culture with that of its East Asian neighbors and Japan's prominence within the global pop-mediandscape. Topics will include Mizuzaki Havao and environmentalism, gender roles and mobility, the self and subjectivities, idealized worlds and character trones, disaster and recovery, and the rural-urban divide. Students will have the opportunity to share their own Japanese pop culture 'discoveries' with the class. No Prerequisites.
Prerequisite: None

Session A
L05 221 (3 units)
MTuWThF 9:00a-10:45a

ECONOMICS

INTRODUCTION TO MICROECONOMICS

Determination of prices; distribution of national income; theory of production. For a thorough introduction to economics L11 1021 should also be taken, but is not required.

Prerequisite: None

Session A
L11 1011 (3 units)
MTuWThF 9:00a-10:45a

INTRODUCTION TO MACROECONOMICS

Business fluctuations: inflation, recession; monetary and fiscal policy; economic development. For a thorough introduction to economics L11 1011 should also be taken, but is not required.

Prerequisite: None

Session A
L11 1021 (3 units)
MTuWThF 1:00p-2:45p

ENGLISH LITERATURE

TOPICS IN ENGLISH AND AMERICAN LITERATURE: BANNED BOOKS: FROM THE GIVER TO THE LORD OF THE FLIES

In this course we will read a number of Young Adult novels that have been banned and examine what leads to the banning of a book. Why are YA novels particular targets of censorship, and why does society attempt to sanitize narratives about adolescence? The novels we will cover, by Toni Morrison, Stephen Chbosky, William Golding, and Lois Lowry, among others, have been banned in the United States on political, religious, sexual, or social grounds. We will gain insight into the controversies these novels started and also consider the themes and questions raised by the texts and their moral implications. In written assignments and class discussion, we will explore what, if anything, these novels have in common and what they may contribute to the study of literature. Students will be asked to engage critically with the texts they encounter and to hone their close reading skills while also considering historical and cultural contexts of the novels. Readings: "The Lord of the Flies," William Golding; "The Perks of Being a Wallflower," Stephen Chbosky; "The Bluest Eye," Toni Morrison; "The Giver," Lois Lowry; "The House on Mango Street," Sandra Cisneros.

Prerequisite: None

Session A
L14 245 (3 units)
MTuWThF 1:00p-2:45p

LINGUISTICS

INTRODUCTION TO LINGUISTICS

Language is one of the fundamental capacities of the human species, and there are many interesting and meaningful ways in which it can be studied. This course explores the core components of linguistic theory: speech sounds (phonetics and phonology), word formation (morphology), sentence structure (syntax), and meaning (semantics). It also provides an overview of interdisciplinary ideas and research on how language is acquired and processed, its relation to the mind-brain and to society, and the question of whether the essential properties of language can be replicated outside the human mind (specifically, in chimpanzees or computer programs).

Prerequisite: None

Session A
L44 170D (3 units)
MTuWThF 1:00p-2:45p

MATHEMATICS

INTRODUCTION TO STATISTICS

Data collection: sampling and designing experiments. Data organization: data, tables, graphs, frequency distributions, numerical summarization of data, and consumer price index. Inference: elementary probability and hypothesis testing.

Prerequisite: None

Session A
L24 1011 (3 units)
MTuWThF 11:00a-12:45p

MATRIX ALGEBRA

Theory of matrices and vector spaces from a concrete, computational point of view. Topics: row reduction (pivot method), rank and dimension, determinants, eigenvalues and eigenvectors, and diagonalization of symmetrical matrices.

Prerequisite: AP Calculus BC with a B or better

Session A
L24 309 (3 units)
MTuWThF 9:00a-10:45a

PHILOSOPHY

BIOMEDICAL ETHICS

A critical examination, in light of contemporary moral disagreements and traditional ethical theories, of some of the moral issues arising out of medical practice and experimentation in our society. May include euthanasia, genetic engineering, abortion, medical malpractice, the allocation of medical resources, and the rights of the patient.

Prerequisite: None

Session A
L30 233F (3 units)
MTuWThF 11:00a-12:45p

PHYSICS

GENERAL PHYSICS I

First semester of a two-semester, calculus-based introductory physics sequence designed to expose students to the concepts, laws, and structure of physics. Topics include kinematics, Newton's laws, energy, linear momentum, angular momentum, conservation laws, gravitational force, harmonic motion, wave motion and interference, sound, and special relativity. Five 2.75-hour lectures and two 3-hour lab sessions each week (all mandatory).

Prerequisite: AP Calculus AB with a grade of B or better

Session A
L31 117A (4 units)
MTuWThF 9:15a-12:00p and MW 1:30p-4:30p

POLITICAL SCIENCE

INTERNATIONAL POLITICS

Globalization, the accelerating rate of interaction between people of different countries, creates a qualitative shift in the relationship between nation-states and national economies. Conflict and war is one form of international interaction. Movement of capital, goods, services, production, information, disease, environmental degradation, and people across national boundaries are other forms of international interactions. This course introduces the study of global political-economic relations. We focus upon building a toolkit that will help us understand the micro-foundations of the globalization of material and social relations.

Prerequisite: None

Session A
L32 103B (3 units)
MTuWThF 1:00p-2:45p

PSYCHOLOGY

INTRODUCTION TO PSYCHOLOGY

Survey and analysis of concepts, research, and theory covering the areas of learning, memory, motivation, personality, social, abnormal, clinical, and biological psychology. Introduces the diversity of questions, areas, approaches, research, and theories that compose the study of mind and behavior.

Prerequisite: None

Session A
L33 100B (3 units)
MTuWThF 11:00a-12:45p

WOMEN, GENDER, AND SEXUALITY STUDIES

INTRODUCTION TO WOMEN, GENDER, AND SEXUALITY STUDIES

This course will provide an introduction to the major and concepts in the interdisciplinary field of women, gender and sexuality. We will examine the meanings attached to terms such as "man," "woman," "gay," and "sex." Topics discussed may include the history of feminist movements, masculinity, biological frameworks for understanding gender, intimate violence, sexual identities, and intersectionality.

Prerequisite: None

Session A

L77 100B (3 units)

MTuWThF 11:00a-12:45p