Early College Scholars
2019 Summer Day Course Listings

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 receive permission to enroll in a course.
4. If a course is full, it will be indicated in the course description.

2019 Section Dates:
- Section II: June 10-July 12
- Section III: June 10-August 2
- Section IV: July 15-August 15
- Section V: June 17-August 2

Guide to Course Listings:

**ANCIENT CIVILIZATIONS OF THE NEW WORLD**
An examination of the Inca empire in Peru, and the Maya and Aztec empires in Mexico through the inquiry into the roots, development, form, and evolutionary history of pre-Colombian civilization in each region from its earliest times to the rise of the classic kingdoms. Examples of respective artistic accomplishments will be presented and discussed.

**Prerequisite:** None

**Section Number**
L48 310C (3 units)

**Tuition:** $1,995

**THE AMERICAN CITY**
The American city has multiple forms: as a place to live and work, as a measure of economic vitality, as an architectural creation, as a political setting for both the promise and peril of democracy, and as a mythic backdrop for fictive struggles of identity formation and personal liberation. This course will begin a student’s exploration of American culture and politics, with St. Louis serving as field laboratory for investigations that will also present the lives of New York, Chicago, New Orleans, Philadelphia and other cities. American cities carry material evidence of the economic and political reasons that they exist, the transportation networks that shape them, the street plans that give them form, the governments that provide the public good, the people who call them home, the role of public transportation systems, the geography of racial segregation, and the histories of immigrant communities. At the same time, the role of the American city has changed significantly in the 21st century when most Americans now live in suburbs surrounding older cities. Throughout the semester, this course will analyze the material and social culture of American cities through a series of lectures, films and field trips.

**Prerequisite:** None

**Section Number**
L98 276 (3 units)

**MTuWThF 9:00a-10:45a**

**Tuition:** $1,995

**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

**Section Number**
L48 150A (3 units)

**MTuWThF 9:00a-10:45a**

**Tuition:** $1,995

**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. This course may include off-campus field trips.

**Prerequisite:** None
INTRODUCTION TO ARCHAEOLOGY
Archaeology plays a critical and unique role in understanding the human past. Through study of the methods and theories of archaeology, and a survey of important firsts in the human past, this course introduces students to the way archaeologists use material culture to reconstruct and understand human behavior. Chronologically-ordered case studies from around the globe are used to look at social, ecological, and cultural issues facing humans from the earliest times to the present. Students gain practice reconstructing the past through hands-on participation in two 1-hour labs focusing on lithics and animal bones. By the end of the course, students are expected to be able to think critically about how the past is presented, and why, and the importance of the past as it relates to the present and future. This course may include off-campus field trips.

Prerequisite: None

INTRODUCTION TO ANATOMY AND PHYSIOLOGY I (Lecture only)
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

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

BIOLOGY OF THE BRAIN
This course is for students who wish to learn about the biology of the nervous system, and the scientific process of understanding how it works. Biology of the Brain will include lecture, discussion, and analysis of cutting edge research, so active participation will be important. We will discuss the gross anatomy and cellular composition of the brain. We will discuss how the brain is organized to process sensory information such as vision and to generate motor activity. We will analyze how the brain develops, changes with experience to create memories, and recovers from injury. Along the way, we will discuss nervous system dysfunction a range of contexts such as Addiction, Alzheimer's Disease, and Parkinson's Disease. This course counts as a Natural Science and Mathematics (NSM) distribution requirement.

Prerequisite: high school honors or AP biology

INTRODUCTION TO THE SCIENCE OF LEARNING
This course presents an overview of the scientific research that forms the foundation of modern learning theory and practice. It examines the role of cognition in everyday decision making and the practical implications of that research for teaching and learning. The course may include off-campus field trips.

Prerequisite: None
INTRODUCTION TO ANATOMY AND PHYSIOLOGY I (Lecture and lab)
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

Section II
L29 322 (5 units)
TuWTh 9:00a-12:00p and TuWTh 5:30p-9:20p
Tuition: $3,325; Lab fee: $300

CHEMISTRY

TOPICS IN GENERAL CHEMISTRY
This course is designed to help students successfully transition from high school AP chemistry to the college level. It provides a general introduction to topics that entering freshmen typically find among the most difficult to master in a first-semester general chemistry course, including the nature and structure of the atom, quantum chemistry, and the nature of bonding. Students gain familiarity with the way in which a rigorous college chemistry course is taught and receive a realistic exposure to the nature of quizzes and exams. Problem sets, selected readings, and group problem-solving strengthen skills and facilitate learning.

Prerequisite: high school honors or AP chemistry and high school algebra

Section IV
L07 102 (3 units)
MTuWThF 11:00a-12:45p
Tuition: $1,995

GENERAL CHEMISTRY I

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

Section II
L07 111A (3 units)
MTuWThF 9:00a-10:45a
Tuition: $1,995

GENERAL CHEMISTRY LABORATORY I
This course provides an introduction to basic laboratory techniques, the experimental method, and the presentation of scientific data, as well as direct experience with chemical principles and the properties and reactions of substances. The topics and experiments in this course complement the material covered in the Chem 111A lecture course.

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

Section II
L07 151 (2 units)
TuTh 1:00-2:45p and MWF 1:00-5:00p
Tuition: $1,330

CHINESE

BEGINNING CHINESE: ALLEX PROGRAM
This course is an introduction to spoken Mandarin, the language with the largest number of native speakers in the world. Course objectives are to master Mandarin pronunciation, including the recognition and writing of Pinyin romanization, and to develop the ability to participate in simple, practical conversations on everyday topics. The relationship between Chinese language and culture and the sociolinguistically appropriate use of language will be stressed throughout. Typical class format will include performance of memorized basic conversations, drills, questions and discussion, and various types of communicative exercises. At the end of the course you will be expected to perform all four skills-speaking, listening, reading, and writing-at a basic level of proficiency.

Prerequisite: This course is appropriate for students with no Chinese background. Students who speak Chinese at home will find this course too easy.

Section V
U38 199 (4 units)
MTuWThF 9:00a-10:00a and 11:00a-12:00p
Tuition: $2,660

DRAMA

IMPROVISATION FOR THE ACTOR
This course introduces students to the fundamentals of improvisation. Students are provided with the tools and techniques to develop their artistic voice, both individually and within an ensemble, through various theatre games, exercises, and techniques. Students will build self-confidence, develop creativity, hone presentation skills, and have fun through working collaboratively in an ensemble. Both actors and non-actors are encouraged to take this class.

Prerequisite: None
INTRODUCTION TO GLOBAL CLIMATE CHANGE IN THE 21ST CENTURY
Global climate and global climate change and their impacts on life and civilization. Integrated view of global climate and the diverse forces that can alter global climate. Historical and potential future consequences of global climate change on human life, our industrial civilization, and its sustainability.
Prerequisite: None

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

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

PRINCIPLES OF WRITING
This course is about reading well and writing deliberately and sees those two acts as intimately related. Students will read as writers, studying the strategies that writers use to write persuasively, and practicing those strategies in their own writing. The course offers a method for close reading (based on finding meaningful patterns); it offers practice linking claims with evidence for those claims and it offers practice organizing papers using such skills as well-written summaries, theses, transitions, topic sentences, and paragraphs.
Prerequisite: None

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

**ENTREPRENEURSHIP**

**ENTREPRENEURSHIP AND THE LIBERAL ARTS**

It is a little known truth that more entrepreneurs come out of the Arts & Sciences than any other college. This course will begin by exploring why this is so, examining in particular the creative and innovative qualities developed in liberal arts that are crucial to the success of the entrepreneur. We will then move on to examine entrepreneurs in action, hearing from those in the field and reading of others, learning how the liberal arts proved instrumental in various ways to their development and ultimate success as entrepreneurs.

**Prerequisite:** None

**HISTORY**

**INTRODUCTION TO WORLD HISTORY: THE SECOND WORLD WAR IN WORLD HISTORY**

This course is an introduction to World History that uses World War II as a lens to examine the methodologies, approaches and sources historians employ to understand and analyze historical periods. The class will explore the global connections and interactions which characterize World History. The emphasis of this course will be on digging into topics traditionally neglected: the impact of the war on race, gender, family and children; daily life; and daily ethical decision making.

**Prerequisite:** None

**INNOVATION**

**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.

**Prerequisite:** None

**JAPANESE**

**BEGINNING JAPANESE: ALLEX PROGRAM**

This course is an intensive, introductory course in Japanese language, designed for students with no previous background in Japanese. This course builds a solid foundation in Japanese with a focus on oral interaction. We will also work on the Japanese writing system and learn to read simple texts written in Japanese. The majority of the class time will be spent on students' performance in Japanese in cultural contexts. Students are expected to spend at least 90 minutes preparing for in-class performance. At the end of the course you will be expected to perform all four skills—speaking, listening, reading, and writing—at a basic level of proficiency.

**Prerequisite:** This course is appropriate for students with no Japanese background. Students who speak Japanese at home will find this course too easy.

**Section V**

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<tr>
<th>Section</th>
<th>Units</th>
<th>Time</th>
<th>Tuition</th>
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<tbody>
<tr>
<td>U36 199</td>
<td>4</td>
<td>MTuWThF 9:00a-10:00a and 11:00a-12:00p</td>
<td>$2,860</td>
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LATIN

INTENSIVE INTRODUCTORY LATIN: FROM GRAMMAR BASICS TO TRANSLATION
An intensive introduction to Latin, especially suitable for graduate students in the humanities, social, and natural sciences, but open to undergraduates who seek permission from the Department of Classics. Thorough introduction to grammar, vocabulary, and syntax will be supplemented by translation practice. The last part of the course will focus on translation of substantial selections from Latin authors including Vergil and Ovid. Students who complete the summer course should subsequently be able to enroll in a 300-level Latin course.
Prerequisite: None

Section III
L10 208 (6 units)
MTuWThF 9:00a-12:00p
Tuition: $3,990

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

Section II
L44 170D (3 units)
MTuWThF 3:00p-4:45p
Tuition: $1,995

Section IV
L44 170D (3 units)
MTuWThF 1:00p-2:45p
Tuition: $1,995

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

Section II
L24 1011 (3 units)
MTuWThF 3:00p-4:45p
Tuition: $1,995

Section IV
L24 1011 (3 units)
MTuWThF 11:00a-12:45p
Tuition: $1,995

CALCULUS I
The first course in the calculus sequence. Topics include differential and integral calculus for algebraic and trigonometric functions.
Prerequisite: high school algebra and trigonometry

Section III
L24 131 (3 units)
MTuWTh 9:00a-10:45a
Tuition: $1,995

CALCULUS II
The second course in the calculus sequence. Topics include differential and integral calculus for the transcendental functions, advanced methods of integration, Taylor's theorem, and infinite series.
Prerequisite: AP Calculus AB with a grade of B or better

Section III
L24 132 (3 units)
MTuWTh 9:00a-10:45a
Tuition: $1,995
CALCULUS III
Multivariable calculus. Topics include differential and integral calculus of functions of two or three variables, and a brief introduction to differential equations.

Prerequisite: AP Calculus BC with a B or better and score of 4 or 5 on AP exam

Section III
L24 233 (3 units)
MTuWTh 3:00p-4:45p
Tuition: $1,995

DIFFERENTIAL EQUATIONS

Prerequisite: Calculus III (may be taken concurrently)

Section IV
L24 217 (3 units)
MTuWThF 1:00-2:45p
Tuition: $1,995

FINITE MATHEMATICS: NUMBER THEORY, COMBINATORICS, AND GRAPHS
Intro to number theory, combinatorics, graph theory, and their applications. Methods of proof and practical applications: calendars, scheduling, communications, encryption, etc. This course is best suited for students who have no experience with calculus, trigonometry, or geometry.

Prerequisite: high school algebra

Section IV
L24 220 (3 units)
MTuWThF 1:00p-2:45p
Tuition: $1,995

ELEMENTARY PROBABILITY AND STATISTICS
An introduction to probability and statistics. Discrete and continuous random variables, mean and variance, hypothesis testing and confidence limits, nonparametric methods, Student’s t, analysis of variance, regression, and contingency tables. Graphing calculator with statistical distribution functions (such as the TI-83) may be required.

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

Section II
L24 2200 (3 units)
MTuWThF 1:00-2:45p
Tuition: $1,995

Section IV
L24 2200 (3 units)
MTuWThF 11:00a-12:45p
Tuition: $1,995

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

Section II
L24 309 (3 units)
MTuWThF 9:00a-10:45a
Tuition: $1,995

Section IV
L24 309 (3 units)
MTuWThF 11:00a-12:45p
Tuition: $1,995

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

Section II
L30 233F (3 units)
MTuWThF 9:00-10:45a
Tuition: $1,995
LOGIC AND CRITICAL ANALYSIS
This course is an introduction to first-order logic. Logic is the study of the formal properties of arguments. In this course we learn how to make arguments precise by formalizing sentences and applying methods of deductive reasoning to prove conclusions. We also discuss the relations between logical reasoning and informal reasoning, and logic and rationality. Why study logic? Logic gives you principles and techniques to distinguish good forms of reasoning, helps you to construct correct arguments, and (to some extent) think orderly. Additionally, logic is essential in other fields that you might also be interested in studying (e.g., mathematics, computer science, linguistics, and analytic philosophy). And of course, logic is a fun and interesting subject in its own right. The course presumes no background in philosophy or logic.
Prerequisite: None

GREAT PHILOSOPHERS
In this course we focus on some of the most important texts in the history of Western philosophy in order to discuss a wide range of central philosophical problems. We typically consider, for example, the existence of God, the justification of claims to knowledge, and the requirements of a good human life, including the demands of morality. Among the philosophers most likely to be studied are Plato, Aristotle, Descartes, Hume, Kant, Marx, Nietzsche, and Wittgenstein. Our goal is not just to appreciate the genius of some great philosophers but also to grapple with the current philosophical problems they have bequeathed to us.
Prerequisite: None

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 Sections each week (all mandatory).
Prerequisite: AP Calculus AB with a grade of B or better

POLITICAL SCIENCE

AMERICAN POLITICS
This course is meant to introduce students to the study of American Politics. We will analyze the origins, developments, actors, institutions, and processes of the American political system. In addition to the three branches of government, we will also cover topics such as public opinion, the media, campaigns and elections, political parties, civil right and liberties, and more. By the end of the class, students should become more careful and insightful consumers of political knowledge.
Prerequisite: None

INTRODUCTION TO COMPARATIVE POLITICS
One of the primary goals of a course in comparative politics is to familiarize students with a broad array of political systems. The approach taken in this course can best be characterized as the active acquisition and use of a set of tools for looking at the political world. In other words, instead of putting emphasis on what textbook writers think political scientist know, in this course the emphasis is on “how we know what we know” and on building knowledge. This approach equips students with a set of tools to use long after the course is over. These comparative tools are focused on historical, recent, and current events, and students are provided the opportunity to delve more deeply into a study of the parts of the world most they find most interesting
Prerequisite: None
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

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

RELIGIOUS STUDIES

Religion and American Society

This course explores religious life in the United States. We will focus our study on groups and movements that highlight distinctive ways of being both "religious" and "American," including the Americanization of global religions in the US context. Major themes will include religious encounter and conflict; secularization, resurgent traditionalism, and new religious establishments; experimentalism, eclecticism, and so-called "spiritual" countercultures; the relationship between religious change and broader social and political currents (including clashes over race, class, gender, and sexuality); and the challenges of religious multiplicity in the US. You will: 1) acquire knowledge of the disparate religions practiced in North America during the twentieth century and beyond; 2) examine some of the chief conflicts as well as alliances between religion and the American social order in a global context; and 3) develop interpretive tools for understanding religion’s present and enduring role in the US and the world.

Prerequisite: None

SOCIOMETRY

Social Problems and Social Issues

Through a sociological lens, this course examines the causes and consequences of pressing contemporary social problems in the United States, including increasing poverty and inequality, ‘modern’ racism and sexism, the crisis in health care (with a unique focus on the lack of adequate mental-health services), crime, incarceration and criminal justice, changing patterns of drug abuse, fragile family structures, globalization and assaults on human rights, and environmental degradation. We will also examine the empirical underpinnings on the basis of inequality focusing on the intersection of disadvantaged statuses related to race, class, gender, ethnicity, and sexuality that heighten the risk for social problems and how these risks play out in American society. Through a research project, students will learn how innovative sociological paradigms (some of which have been created outside of the United States) can offer guidelines for successful intervention strategies. Briefings from a few agencies dealing directly with these problems will share perspectives on theoretical and applied work related to advocacy, justice, and interventions. This course is especially relevant for those interested in graduate work and career goals in health and medicine, social service, law, and public policy.

Prerequisite: None
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 II
L77 100B (3 units)
MTuWThF 9:00a-10:45a
Tuition: $1,995