

Berkeley Class Pass Fall 2018

We welcome you to experience a Berkeley lecture. Please keep in mind the following guidelines:

- This is an experience to attend a lecture, a physical pass is not required.
- This is not intended for groups, but rather for individuals or small families.
- Please arrive on time. (Note: Berkeley classes start 10 minutes after the time listed, a practice known as “Berkeley Time.”)
- Please take a seat in the back of the lecture hall and remain for the entire class.
- Please refrain from disrupting classes as Berkeley students are the only ones who may participate in discussions and ask questions.
- Courses may be unavailable to visitors without notice, for example, because of exams.

Monday, Wednesday & Friday Classes

- **Introduction to General Biology, Biology 1B**
 - Valley Life Sciences 2050
 - **MWF 8:00-9:00AM**
 - General introduction to plant development, form, and function; population genetics, ecology, and evolution.
- **Introduction to Statistics, Statistics 2**
 - Stanley 105
 - **MWF 8:00-9:00AM**
 - Population and variables. Standard measures of location, spread and association. Normal approximation. Regression. Probability and sampling. Binomial distribution. Interval estimation. Some standard significance tests.
- **Introduction to Computer Programming for Scientists and Engineers, Engineering 7**
 - Dwinelle 155
 - **MW 9:00-10:00AM**
 - Elements of procedural and object-oriented programming. Induction, iteration, and recursion. Real functions and floating-point computations for engineering analysis. Introduction to data structures. Representative examples are drawn from mathematics, science, and engineering. The course uses the MATLAB programming language. Sponsoring departments: Civil and Environmental Engineering and Mechanical Engineering.
- **Introduction to Environmental Sciences, EPSM 15**
 - Evans 10
 - **MWF 9:00-10:00AM**
 - Introduction to the science underlying biological and physical environmental problems, including water and air quality, global change, energy, ecosystem services, introduced and endangered species, water supply, solid waste, human population, and interaction of technical, social, and political approaches to environmental management.

- **Introduction to General Chemistry, Chemistry 1A**
 - Pimentel 1
 - **MWF 9:00-10:00AM & 11:00-12:00AM & 1:00-2:00PM**
 - Stoichiometry of chemical reactions, quantum mechanical description of atoms, the elements and periodic table, chemical bonding, real and ideal gases, thermochemistry, introduction to thermodynamics and equilibrium, acid-base and solubility equilibria, introduction to oxidation-reduction reactions, introduction to chemical kinetics.

- **Introduction to Logic, Philosophy 12A**
 - LeConte 1
 - **MWF 9:00-10:00AM**
 - The course will introduce the students to the syntax and semantics of propositional and first-order logic. Both systems of logic will be motivated by the attempt to explicate the informal notion of a valid argument. Intuitively, an argument is valid when the conclusion ‘follows’ from the premises. In order to give an account of this notion we will introduce a deductive system (a natural deduction system), which explicates the intuitive notion of ‘follow’ in terms of derivational rules in a calculus. This will be done in stages, first for propositional reasoning (only connectives such as ‘and’, ‘or’, ‘if... then...’) and later for the full first-order calculus (including expressions such as ‘for all...’ and ‘there exists...’). In addition, we will also develop techniques for showing when a claim does not follow from the premises of an argument. This is done by developing the semantics for the propositional and the predicate calculus. We will introduce truth-tables for the propositional connectives and ‘interpretations’ for sentences of first-order logic. At the end of the course, if time allows, we will also cover some metatheoretical issues, such as soundness and completeness of the propositional calculus.

- **Literature in English: The Late-17th through the Mid-19th Century, English 45B**
 - Cory 277
 - **MW 9:00-10:00AM**
 - As we read works produced in a period of tumultuous change, we shall consider those works as zones of contact, reflecting and sometimes negotiating conflict. In a world of expanding global commerce (imports like tea suddenly becoming commonplace in England), political revolution (English, American, French), and changing conceptions of what it means to be a man or woman (a new medical discourse viewing them as categorically distinct), increasingly available printed texts become sites of contestation—including debates about what constitutes “proper” language and Literature itself. We shall think about the ways in which separate groups—British and African, masters and slaves, slave owners and abolitionists, arch capitalists and devout religious thinkers, Republicans and Conservatives, men and women—use writing to devise ongoing relationships with each other, often under conditions of inequality. Throughout we shall be especially attuned to formal choices—from linguistic register to generic conventions and innovations—and how writers deploy these to incorporate opposition, resist authority or authorize themselves.

- **Plagues and Pandemics, Molecular & Cell Biology 55**
 - Valley Life Science 2060
 - **MWF 9:00-10:00 AM**
 - Discussion of how infectious agents cause disease and impact society at large. We will examine historical and current examples of plagues and pandemics and consider the question of what we should do to ameliorate the impact of infectious disease in the future. The course is intended for non-majors and will begin by briefly providing necessary background in microbiology and immunology. The primary focus in each subsequent week, however, will be

on discussing a particular infectious disease. The course will be broad in scope covering biological, historical, ethical and social implications of each disease.

- **Quantum Mechanics, Physics 137A***
 - LeConte 4
 - **MWF 9:00-10:00 AM**
 - Introduction to the methods of quantum mechanics with applications to atomic, molecular, solid state, nuclear and elementary particle physics.
 - ***NOTE:** This is an advanced junior/senior level course with complex content, but taught by an engaging award-winning instructor.
- **Individual Morality and Social Justice, Philosophy 2**
 - Hearst Field Annex A1
 - **MWF 10:00-11:00AM**
 - The course deals with fundamental ethical issues and is intended, at the same time, as an introduction to philosophy. It seeks to address questions concerning the self, our relations to others and our commitment to various human communities. It asks, thus: How can I lead a good life? Are there rules for my relations with others? How are we to settle questions of social living together? We will examine these issues with the help of writings from both Western and Non-Western sources, both classical and modern authors.
- **Introduction to Economics, Econ 1**
 - Wheeler 150
 - **MW 10:00-11:00AM**
 - A survey of economics designed to give an overview of the field.
- **Oceans, Integrative Biology C82**
 - Pimentel 1
 - **MWF 10:00-11:00AM**
 - This course offers multidisciplinary approach to begin answering the question "Why are oceans important to us?" Upon a physical, chemical, and geologic base, we introduce the alien world of sea life, the importance of the ocean to the global carbon cycle, and the principles of ecology with a focus on the important concept of energy flow through food webs. Lectures expand beyond science to include current topics as diverse as music, movies, mythology, biomechanics, policy, and trade.
- **Introduction to Mathematical Physics, Physics 89***
 - 141 McCone Hall
 - **MWF 10:00-11:00AM**
 - Complex numbers, linear algebra, ordinary differential equations, Fourier series and transform methods, introduction to partial differential equations, introduction to tensors.
 - ***NOTE:** This is a sophomore/junior class and very mathematical, but enrollment is smaller than other courses.

- **Introduction to Human Nutrition, NUSCTX 10**
 - Wheeler 150
 - **MW 11:00AM-12:00PM**
 - This course focuses on relationships between diet and health, and responses of the human body to diet and food components, including macro and micro nutrients, water, phytochemicals, and alcohol. This course also provides an overview of the interplay between nutrients and physiological and behavioral responses. Lectures, which address contributions of diet to optimal health or disease risk, are based on current nutritional, biochemical, and medical knowledge. Goals include enabling students to make informed decisions about their nutritional needs and current issues concerning nutrition.

- **Introduction to Environmental Design, Environmental Design 1**
 - Wurster 112
 - **MW 11:00AM-12:30PM**
 - This course will teach anyone how to start to be a designer, not just of drawings and objects, but also buildings, landscapes, and urban spaces. And not just in isolation, but in the complex web of ecological and man-made systems which makes up our shifting environment. You will take from the course first-hand experience of drawing, measuring, and design — which form the basis of the professions of architecture, landscape architecture.

- **Literature in English: The Mid-19th through the 20th Century, English 45C**
 - Latimer 120
 - **MW 12:00-1:00PM**
 - This course examines a range of British and American texts from the period with an emphasis on literary history and its social and political contexts. We will focus on the emergence, development, and legacy of modernism as a set of formal innovations that help us see how literature operates as a means of cultural response in the late nineteenth and twentieth centuries. We will also consider modernism alongside other literary modes and styles (realism, naturalism, postmodernism) that pursue different strategies for representing the experience of the world—and for finding a place for literature within it. Particular attention will be paid to close reading and questions of literary form even as we think about such larger issues as the relationship between reading and entertainment, the changing status of art in respect to new technologies of information and representation, and the challenges to traditional conceptions of the self that are posed by new languages of psychological, national, and racial identity.

- **Literature in English: Through Milton, English 45A**
 - Morgan 101
 - **MW 1:00-2:00PM**
 - This course will introduce students to Chaucer, Spenser, Marlowe, Donne, and Milton; to literary history as a mode of inquiry; and to the analysis of the way literature makes meaning, produces emotional experience, and shapes the way human beings think about desire, commerce, liberty, God, power, the environment, subjectivity, empire, justice, death, and science. We will study how a literary text emerges out of the author's reading of his or her predecessors and in relation to contemporary political, religious, social, and scientific discourses and events.

- **The Structure and Interpretation of Computer Programs, CS 61A**
 - Wheeler 150
 - **MWF 1:00-2:00PM**
 - An introduction to programming and computer science focused on abstraction techniques as means to manage program complexity. Techniques include procedural abstraction; control abstraction using recursion, higher-order functions, generators, and streams; data abstraction using interfaces, objects, classes, and generic operators; and language abstraction using interpreters and macros. The course exposes students to programming paradigms, including functional, object-oriented, and declarative approaches. It includes an introduction to asymptotic analysis of algorithms. There are several significant programming projects.

- **Introduction to Climate Change, Earth & Planetary Sciences 7**
 - Li Ka Shing 245
 - **MWF 2:00-3:00PM**
 - This course covers the physical processes that determine Earth's past, present, and future climate, with a particular focus on the essentially irreversible climate change (a.k.a., global warming) caused by the burning of coal, oil, and natural gas. Topics will also include the estimation of future warming and impacts, the Earth resources that can be used to combat climate change, and the policies being used to shift towards the use of those resources.

- **Introduction to Psychology, Psych 1**
 - Pimentel 1
 - **MW 2:00-3:00PM**
 - Introduction to the principal areas, problems, and concepts of psychology.

- **Principles of Business, UGBA 10**
 - Wheeler 150
 - **MWF 2:00-3:00PM**
 - This course provides an introduction to the study of the modern business enterprise. The course is taught in five modules, the order of which may vary from semester to semester. The first examines the role and governance of business enterprise in a market economy. The second concentrates on financial issues, while the third looks at the problems of managing people in organizations. The fourth examines product pricing, marketing, and distribution issues and the last concentrates on the international business environment.

- **The Beauty and Joy of Computing, CS 10**
 - Evans 10
 - **MW 3:00-4:00PM**
 - An introduction to the beauty and joy of computing. The history, social implications, great principles, and future of computing. Beautiful applications that have changed the world. How computing empowers discovery and progress in other fields. Relevance of computing to the student and society will be emphasized. Students will learn the joy of programming a computer using a friendly, graphical language, and will complete a substantial team programming project related to their interests.

- **Introduction to General Astronomy, Astro C10**
 - Wheeler 150
 - **MWF 3:00-4:00PM**
 - A description of modern astronomy with emphasis on the structure and evolution of stars, galaxies, and the Universe. Additional topics optionally discussed include quasars, pulsars, black holes, and extraterrestrial communication, etc.

- **Introductory Physics, Physics 8A**
 - Pimentel 1
 - **MWF 3:00-4:00PM**
 - Introduction to forces, kinetics, equilibria, fluids, waves, and heat. This course presents concepts and methodologies for understanding physical phenomena, and is particularly useful preparation for upper division study in biology and architecture.

- **Introductory Physics, Physics 8B**
 - Pimentel 1
 - **MWF 3:00-4:00PM**
 - Introduction to electricity, magnetism, electromagnetic waves, optics, and modern physics. The course presents concepts and methodologies for understanding physical phenomena, and is particularly useful preparation for upper division study in biology and architecture.

- **Introductory Physics, Physics 8B**
 - Wheeler 150
 - **MWF 3:00-4:00PM**
 - A description of modern astronomy with emphasis on the structure and evolution of stars, galaxies, and the Universe. Additional topics optionally discussed include quasars, pulsars, black holes, and extraterrestrial communication, etc. Individual instructor's synopses available from the department.

- **A History of Race and Ethnicity in Western North America 1598-Present, Ethnic Studies 10AC**
 - Evans 10
 - **MWF 5:00-6:00PM**
 - This course explores the role of "race" and ethnicity in the history of what became the Western United States from the Spanish invasion of the Southwest to contemporary controversies surrounding "race" in California. Rather than providing a continuous historical narrative, or treating each racialized "other" separately, the course works through a series of chronologically organized events in which issues of racial differences played key roles in creating what became a western identity.

Tuesday & Thursday Classes

- **Introduction to American Politics, Political Science 1**
 - Dwinelle 155
 - **TTH 9:30-11:00AM**
 - An introductory analysis of the structure and operations of the American political system, primarily at the national level.
- **Descriptive Introduction to Physics “Physics for Future Presidents,” Physics 10**
 - Pimentel 1
 - **TTH 9:30-11:00AM**
 - The most interesting and important topics in physics, stressing conceptual understanding rather than math, with applications to current events. Topics covered may vary and may include energy and conservation, radioactivity, nuclear physics, the Theory of Relativity, lasers, explosions, earthquakes, superconductors, and quantum physics. Please be cognizant that this class has a small enrollment.
- **Calculus, Math 1A**
 - Valley Life Sciences 2050
 - **TTH 11:00AM-12:30PM**
 - This sequence is intended for majors in engineering and the physical sciences. An introduction to differential and integral calculus of functions of one variable, with applications and an introduction to transcendental functions.
- **Earthquakes in Your Backyard, Earth and Planetary Science C20**
 - Li Ka Shing 245
 - **TTH 11:00AM-12:30PM**
 - Introduction to earthquakes, their causes and effects. General discussion of basic principles and methods of seismology and geological tectonics, distribution of earthquakes in space and time, effects of earthquakes, and earthquake hazard and risk, with particular emphasis on the situation in California.
- **Film and Media Cultures, Film 20**
 - Dwinelle 142
 - **TTH 11:00AM-12:30PM**
 - This course is intended to introduce undergraduates to the study of a range of media, including photography, film, television, video, and print and digital media. The course will focus on questions of medium "specificity" or the key technological/material, formal and aesthetic features of different media and modes of address and representation that define them. Also considered is the relationship of individual media to time and space, how individual media construct their audiences or spectators, and the kinds of looking or viewing they enable or encourage. The course will discuss the ideological effects of various media, particularly around questions of racial and sexual difference, national identity, capitalism, and power.
- **Survey of World History, International and Area Studies 45**
 - Haas Faculty Wing F295
 - **TTH 11:00AM-12:30PM**
 - This course focuses on benchmarks of the history of various nations and civilizations. It begins with the ancient Greeks, Romans, and Chinese, but emphasizes world developments since the

15th century. The purpose of the course is to gain a better understanding of the rise and decline of states, empires, and international trading systems. Therefore, political and economic structures and developments as well as military factors will be presented along with the more traditional historical perspectives.

- **Introductory Physics, Physics 8A**
 - Pimentel 1
 - **TTH 11:00AM-12:30PM**
 - Introduction to forces, kinetics, equilibria, fluids, waves, and heat. This course presents concepts and methodologies for understanding physical phenomena, and is particularly useful preparation for upper division study in biology and architecture.

- **Environmental Policy, Administration, and Law, ESPM 60**
 - Mulford 159
 - **TTH 12:30-2:00PM**
 - Introduction to U.S. environmental policy process focuses on history and evolution of political institutions, importance of property, federal and state roles in decision making, and challenges of environmental policy. Emphasis is on use of science in decision making, choices between regulations and incentives, and role of bureaucracy in resource policy. Case studies on natural resource management, risk management, environmental regulation, and environmental justice.

- **Gender in American Culture, Gender and Women's Studies 50AC**
 - Dwinelle 145
 - **TTH 12:30-2:00PM**
 - A multi-disciplinary course designed to provide students with an opportunity to work with faculty investigating the topic gender in American culture.

- **Introduction to American Studies, American Studies 10**
 - Valley Life Sciences 2060
 - **TTH 12:30-2:00PM**
 - American culture and cultural change, with attention to the multicultural basis of American society and emphasis on the need for multiple methods of analysis. The course will consistently draw on the arts, material culture, and various fields affecting cultural production and meaning. Those areas include literature, film, history, architecture, history of art, religion, music, engineering, environmental studies, anthropology, politics, economics, law, and medicine.

- **Introduction to the History of the United States: United States from Settlement to Civil War, History 7A**
 - Lewis 100
 - **TTH 12:30-2:00PM**
 - This course is an introduction to the history of the United States from the beginning of the European colonization of North America to the end of the Civil War. It is also an introduction to the ways historians look at the past and think about evidence. There are two main themes: one is to understand the origin of the "groups" we call European-Americans, Native-Americans, and African-Americans; the second, is to understand how democratic political institutions emerged in the United States in this period in the context of an economy that depended on slave labor and violent land acquisition.

- **Introduction to Human Physiology, Molecular and Cell Biology 32**
 - Dwinelle 155
 - **TTH 12:30-2:00PM**
 - A comprehensive introduction to human biology. The course will concentrate on basic mechanisms underlying human life processes, including cells and membranes; nerve and muscle function; cardiovascular, respiratory, renal, and gastrointestinal physiology; metabolism, endocrinology, and reproduction.

- **Introductory Physics, Physics 8B**
 - Pimentel 1
 - **TTH 12:30-2:00PM**
 - Introduction to electricity, magnetism, electromagnetic waves, optics, and modern physics. The course presents concepts and methodologies for understanding physical phenomena, and is particularly useful preparation for upper division study in biology and architecture.

- **Introduction to Archaeology, Anthro 2AC**
 - Stanley 105
 - **TTH 2:00-3:30PM**
 - Prehistory and cultural growth. Introduction to the methods, goals, and theoretical concepts of archaeology with attention to the impact archaeology has had on the construction of the histories of diverse communities - Native Americans, Hispanics, and Euro-Americans.

- **Introduction to Development, Geography C32**
 - Hearst Mining 390
 - **TTH 2:00-3:30PM**
 - This course is designed as an introduction to comparative development. The course will be a general service course, as well as a prerequisite for the upper division 100 series. It is assumed that students enrolled in 10 know little about life in the Third World countries and are unfamiliar with the relevant theory in political economy of development and underdevelopment. The course will be structured around three critical concepts: land, labor, and work.

- **Introduction to Global Studies, Global 10A**
 - Hearst Mining 390
 - **TTH 2:00-3:30PM**
 - This course is designed as an introduction to Global Studies. Using a social science approach, the course prepares students to think critically about issues of international development, conflict, and peace in a variety of societies around the world. As such it provides students with a basic theoretical introduction to the impact of global interaction as well as an opportunity to explore such interaction in a variety of case studies.

- **Introduction to International Relations, Political Science 5**
 - Lewis 100
 - **TTH 2:00-3:30PM**
 - This course is designed to introduce students to the major theoretical approaches to international politics, to explore important historical and contemporary questions and debates in international affairs, and to teach students to think critically about international relations. It is a prerequisite for most upper division international relations courses in Political Science.

- **Introduction to Biomedicine for Engineers, BioEng 10**
 - Lewis 100
 - **TTH 3:30-5:00PM**
 - This course is intended for lower division students interested in acquiring a foundation in biomedicine with topics ranging from evolutionary biology to human physiology. The emphasis is on the integration of engineering applications to biology and health. The goal is for undergraduate engineering students to gain sufficient biology and human physiology fundamentals so that they are better prepared to study specialized topics, e.g., biomechanics, imaging, computational biology, tissue engineering, biomonitoring, drug development, robotics, and other topics. The specific lecture topics and exercises will include the key aspects of genomics and proteomics as well as topics on plant and animal evolution, stem cell biomedicine, and tissue regeneration and replacement. Medical physiology topics include relevant engineering aspects of human brain, heart, musculoskeletal, and other systems.

- **California, Geography 50AC**
 - Valley Life Sciences 2040
 - **TTH 5:00-6:30PM**
 - California had been called "the great exception" and "America, only more so." Yet few of us pay attention to its distinctive traits and to its effects beyond our borders. California may be "a state of mind," but it is also the most dynamic place in the most powerful country in the world, and would be the 8th largest economy if it were a country. Its wealth has been built on mining, agriculture, industry, trade, and finance. Natural abundance and geographic advantage have played their parts, but the state's greatest resource has been its wealth and diversity of people, who have made it a center of technological and cultural innovation from Hollywood to Silicon Valley. Yet California has a dark side of exploitation and racialization.

- **Introduction to Empirical Analysis and Quantitative Methods, Political Science 3**
 - Valley Life Sciences 2050
 - **TTH 5:00-6:30PM**
 - Analytical and methodological problems of political inquiry, with an emphasis on quantification and measurement.

- **Principles of Sociology: American Cultures, Sociology 3AC**
 - Li Ka Shing 245
 - **TTH 5:00-6:30PM**
 - Comparing the experience of three out of five ethnic groups (e.g. African Americans, Asian Americans, Chicano/Latino, European Americans, and Native Americans) we shall examine historically how each people entered American society and built communities and transformed their cultures in the process. Students will be introduced to the sociological perspective, characteristic methods of research, and such key concepts as culture, community, class, race, social change, and social movements.