Freshman and Sophomore Seminars
University of California, Berkeley
231 Evans Hall
Berkeley, CA 94720-2922
Freshman & Sophomore Seminars at Berkeley

UC Berkeley’s Freshman and Sophomore Seminars provide an unparalleled opportunity for faculty members and small groups of lower-division students to explore a scholarly topic of mutual interest together, in the spirit of learning for its own sake. By taking a seminar a student becomes an active member of Berkeley’s intellectual community. The seminars depend on the regular presence and active participation of every student. Sharing ideas in class is an important academic skill that can be acquired only through practice. The vigorous discussions that characterize the most successful seminars depend on the commitment of each and every member of the class. Students are encouraged to choose their seminars based on the pull of intellectual curiosity, a desire to explore enticing and even unfamiliar realms.

Please visit the Freshman & Sophomore Seminar website at http://fss.berkeley.edu/ for the following:

- Updates to the seminar lists included in this document on easy-to-follow web pages
- Revisions to this document
- Pop-up menus to help students find seminars of interest based on seminar topics
- Information regarding the Food for Thought Seminar series, a wonderful way for faculty and students to get better acquainted in an informal setting before or after class

L&S Discovery Courses

The seven-course breadth requirement can be an unparalleled opportunity to explore fascinating worlds of knowledge. The Letters & Science Discovery Courses take the guesswork out of satisfying the breadth requirement. Taught by some of the most distinguished faculty on campus and deliberately designed to engage and ignite the minds of non-experts, these courses are unforgettable. For details on the Discovery Courses, see http://lsdiscovery.berkeley.edu.

This document was last updated on January 8, 2020.
Freshman Seminars

The following courses, most of which are numbered 24, are limited to 15-18 students. Each is offered for one unit of credit. First-year students will be given priority for enrollment. Courses designated P/NP may be taken pass/no pass only; courses designated LG may be taken for a letter grade or on a pass/no pass basis. If a course is designated as requiring the consent of the instructor to enroll, or if you would like additional course information, contact the undergraduate assistant in the department offering the seminar.

Anthropology 24, Section 1
Becoming Human (1 unit, P/NP)
Professor Lisa Maher
Tuesday 11:00-12:00, 2251 College Ave. #101, Class number: 23123

How did we become human and what makes us unique? As a topic that captures the imagination in our quest to understand our species, it seems like every month there is a new discovery and a new piece to the ever-changing puzzle. This course traces the history of the human lineage, with a particular focus on the last phases of human evolution—namely, how and why Homo sapiens thrived and flourished. Recent developments in our understanding of the fossil record, ancient DNA, and archaeological data have revolutionized our understandings of what make us human and how those characteristics evolved. We will examine the most recent scientific discoveries and explore how these data are covered in the media and other popular venues. Through this lens, we will explore the emergence of the first bipedal hominids, look at the earliest evidences for tool use, discuss theories about what happened to our closest fossil relatives, the Neanderthals and newly-discovered Denisovans, examine the appearance of modern human behavior, and explore how Homo sapiens came to dominate the globe. Freshman students; no background in science, evolution, or archaeology necessary.

Lisa Maher is a prehistoric archaeologist in the Department of Anthropology who has been working in the eastern Mediterranean for twenty years. She is involved in research all over the globe and directs several excavation projects in Jordan, most recently at a 20,000-year old hunter-gatherer aggregation site that is the largest Palaeolithic site in region and with the country's earliest hut structures and human burials. She has also recently started a project in Cyprus exploring the island’s earliest sea-faring hunter-gatherer groups. Specializing in geoarchaeology, ancient stone tool technologies, and cultural heritage conservation, she is interested in the intersections between past landscapes and people, from our earliest human ancestors to the present.

Faculty web site: http://anthropology.berkeley.edu/people/lisa-maher

Anthropology 24, Section 2
Literature of Indigenous Maya and Nahuatl People (1 unit, LG)
Professor Rosemary Joyce
Tuesday 11:00-12:00, 192 Barrows Hall, Class number: 32740

This seminar will introduce students to the literary production of Maya and Nahuatl-speaking people who have inhabited the territory today identified as Mexico and Guatemala for millenia. We will be reading poetry and prose translated from Nahua, K’ich’e, and Yukatek originals written down using the introduced European alphabet under Spanish colonialism in the sixteenth to nineteenth centuries. We will juxtapose these classic texts with the continued production of poetry and prose in these indigenous languages today by artists producing contemporary theatre, music, and video work.

Students who are interested in the indigenous cultures of Mexico and Guatemala. Class discussions will be held in English.

I am an anthropologist who conducts research in archives, museums, and through field archaeology in Honduras, on sites ranging in age from the earliest known villages (occupied by 1600 BC) to colonial forts...
and towns from the eighteenth and nineteenth centuries. My publications deal with people's identities as men and women, and as members of different racialized groups, and how those identities influence their power and status. I am a specialist in ancient pottery, which has led me to research on foodways, including the detection of traces of chocolate in pots dating before 1100 BC. This is an aspect of my interest in everyday lives and their complexity, including feasting, ceremonies around birth and death, and artistic craft production.

Faculty web site: http://anthropology.berkeley.edu/people/rosemary-joyce

**Architecture 24, Section 1**  
**Design Thinking and Innovation (1 unit, P/NP)**  
Professor W. Mike Martin  
**Tuesday 1:00-3:00, 270 Wurster Hall, Class number: 13067**

Class will be held two hours per week for five weeks -- from January 21 through February 18, 2020.

Design thinking and innovation are key drivers of success for many of today’s leading industries, companies, and institutions. At the center of these activities are processes of knowledge application and skill referred to as design thinking. This type of thinking is nested in a rich history of forms of inquiry as research paradigms. This course will explore the relationship of design thinking to other forms of thinking strategies, as well as connect thinking to the actions of innovation. Much of our future progress, both today and in the years to come, will result from a culture of creative innovation. An important element of a creative culture is the use of design thinking, specifically, but all forms of inquiry, as a means to unlock the challenges and potential of our actions. Designing represents a powerful set of methods to engage everyday challenges in almost any discipline or profession. The course will focus on ways of thinking as they relate to changing our environment, our organizations, our discipline, etc. In addition, the course will illustrate some of the characteristics of career paths that are at the center of design thinking and innovation.

Professor W. Mike Martin has been at UCB for the past 25 years in the Architecture Department of the College of Environmental Design. He served as the Undergraduate Dean of CED for eleven years and completed a three-year term as Chair of the Architecture Department. Just before retiring, he served as the University of California Systems Education Abroad Director for Scandinavia from 2006-2008 in Copenhagen, Denmark. His teaching and research have focused on the study of the practice of design thinking, collaborative design, work-studies of practice, and storytelling/narrative as a means of knowledge transfer in practice and the academic community.

Faculty web site: http://ced.berkeley.edu/ced/faculty-staff/mike-martin

**Bioengineering 24, Section 1**  
**Playing well with others—developing teamwork through Role-Playing Games (RPGs)** (1 unit, P/NP)  
Professor Terry Johnson  
**Wednesday 4:00-5:00, 179 Stanley Hall, Class number: 30665**

Role-Playing Games (RPGs) are collaborative storytelling tools wherein a Game Master (GM, sometimes DM for ‘Dungeon Master’) designs and performs the world, while Players take on the role of a character interacting with that world. The story is told through a combination of GM agency, Player agency, and random numbers (typically generated using RPG dice) that determine the outcome of an intended action according to an established set of rules. There are RPGs that operate on different models, too, but the above is most typical.

RPGs are a great way to learn how to lead and participate in a team, to flex your
creative muscles, or simply to set aside the week’s homework for an afternoon in favor of something exciting and different. This class is designed for folks who are interested in RPGs, but does not assume that you have experience with either GMing or playing. We’ll often use Dungeons and Dragons 5th Edition (D&D 5E) as an example, so access to a Player’s Handbook will be handy, but not essential. It’s also fun to have your own physical RPG dice set to play with (and yell at), but likewise, not essential. This seminar is part of the Food for Thought Seminar Series.

Terry D. Johnson has a master’s degree in chemical engineering from MIT and is currently an Associate Teaching Professor of bioengineering at UC Berkeley. He hopes that by teaching in this field, he will be giving students the tools that they will need to repair him as he gets older.

He teaches courses in a wide range of subjects, displaying a versatility that has prevented him from achieving any actual expertise. In 2010 he received the Golden Apple Award for Outstanding Teaching, and was one of the recipients of Berkeley’s 2013 Distinguished Teaching Awards. He is also co-author of the popular science book How to Defeat Your Own Clone (and other tips for surviving the biotech revolution).

Chemical Engineering 24, Section 1
Whose Science, Whose Fiction? Exploring America’s Scientific Imagination (1 unit, P/NP)
Professor Jeffrey Reimer
Monday 4:00-6:00, 100 D Hildebrand Hall (Library), Class number: 12818

Class will meet on select Mondays during Spring semester. The course calendar will be posted before the semester begins.

What do we learn about ourselves, our society, and the natural world through science fiction? Discover with Professor Reimer how space exploration and technological innovation in the mid-twentieth century spawned an explosion of books, movies and television that revealed much about the US psyche. Technological triumphalism, cultural hegemony, libertarian politics, the nature of God, sexual identity, and "war as a force that gives us meaning" are just a few of the topics that will reveal themselves in our readings and seminar time together.

Jeffrey A. Reimer received his bachelor’s degree (with honors) from the University of California at Santa Barbara, and his doctorate from the California Institute of Technology. Prior to his faculty appointment at UC Berkeley he was a postdoctoral fellow at IBM Research in Yorktown Heights, New York. He is presently the C. Judson King Endowed Professor and the Warren and Katharine Schlinger Distinguished Professor and Chair of the Chemical and Biomolecular Engineering Department. Professor Reimer has won several teaching awards, including the UC Berkeley Distinguished Teaching Award, the highest award bestowed on faculty for their teaching. Professor Reimer’s scholarship is in the fields of materials chemistry and engineering, with particular attention to the application of sophisticated NMR spectroscopic and physical measurements. He is recognized for these works by election as a Fellow of the American Association for the Advancement of Science, a Fellow of the American Physical Society in the Division of Materials Physics, and a Fellow of the International Society for Magnetic Resonance. In 2015 Professor Reimer was the recipient of a Research Fellowship from the Alexander von Humboldt Foundation. In addition to his ~175 research publications, Professor Reimer is co-author (with T.M. Duncan) of the introductory text Chemical Engineering Design and Analysis (Cambridge University Press, 1998), and the text Carbon Capture and Sequestration (with Berend Smit, Curt Oldenburg, Ian Bourg, World Scientific Press, 2013).

Faculty web site: http://india.cchem.berkeley.edu/~reimer/
Civil and Environmental Engineering 24, Section 1
Waves: Ideal, Real, and In-Between (1 unit, P/NP)
Professor Evan Variano
Wednesday 12:00-1:00, 544 Davis Hall, Class number: 28039

Predicting sinusoidal wave motion has been one of the great successes of calculus and is a centerpiece of basic physics. However, many of the wave types observed in nature do not fit into this rather narrow mathematical description. This course will take a broad view of waves, exploring a wide variety of different wave types. Examples will be drawn from fields including biology, ecology, and physics, with a particular emphasis on the water waves encountered in environmental engineering. For each wave type we explore, we will consider the simplified mathematical models that try to capture the essence of the wave. We will explore the limits of these models and discuss the practical implications of making engineering decisions based on idealized models. The class will follow Gavin Pretor-Pinney's armchair science book, "The Wave Watcher's Companion," with supplementary material presented in class to motivate and support group discussions. This seminar is part of the Food for Thought Seminar Series.

Dr. Variano studies fluid motion in the environment, with a special focus on the air-water interface. As an innovator of laboratory techniques, he has found ways to directly observe fluid behavior in new and revealing ways. He uses his measurements to describe the underlying physical processes that control the motion of pollutants, nutrients, and plankton in the world's oceans. The constant tension between observing the world in all its complexity and simplifying it for engineering purposes is what drives his research program; this tension is a central theme that we discuss in the seminar. Undergraduates contribute in significant ways to his research efforts, with several students joining the lab each year. He has also published a paper on best practices for integrating research experiences and classroom learning.

Classics 24, Section 1
Homer's Odyssey (1 unit, P/NP)
Professor Dylan Sailor
Thursday 3:00-4:00, 122 Wheeler Hall, Class number: 24151

In this freshman seminar, we will read and discuss a landmark of world literature, the ancient Greek epic poem called the Odyssey. The work tells the story of the Greek hero Odysseus' struggle to make his way back home after the Trojan War and of what happened when he got there. Along the way, we will look at what the poem has to say about very many things, including identity, violence, the nature of “home,” the relationship between household and political community, gender, fame, family, and the power of storytelling. There will be monsters, strange lands with strange customs, sorceresses, conversations with ghosts, transformation and shapeshifting, gods and goddesses, storms, shipwrecks, tricks and schemes, lies and tall tales, and all kinds of other wild stuff. There will be no written assignments in this course; the only requirements are that you 1). complete the weekly readings, 2). think about them, and 3). on the basis of your reading and thinking contribute actively and constructively to our in-class discussions. Since the class is essentially just reading a book, thinking about it, and talking about it, students who like the idea of doing that will probably have a lot more fun in the seminar than students who do not like the idea of doing that.

Professor Sailor grew up in and around Seattle but has lived in California for many years. He received BAs in Classics and in History from the University of Washington in 1995 and a PhD in Classics from Berkeley in 2002. He taught at UC San Diego in the Department of Literature from 2002-2005 before coming back to Berkeley to teach in the Department of Classics. His research mostly concerns the literature and culture of ancient Rome, and has focused on how the Romans wrote about their own history.

Faculty web site: http://www.classics.berkeley.edu/people/dylan-sailor
Computer Science 24, Section 1
Boeing 737 MAX: Money, Machines, and Morals in Conflict (1 unit, P/NP)
Professor Brian Barsky
Friday 12:00-2:00, 606 Soda Hall, Class number: 29312

The class will not meet every week. Professor Barsky will work out exact arrangements directly with the students.

The Boeing 737 MAX aircraft has been grounded worldwide after two fatal crashes with similar characteristics within five months of each other. In both incidents, pilots could not control the aircraft shortly after takeoff resulting in tragic crashes with no survivors. Due to concerns about financial losses, there is pressure to resume the use of the 737 MAX for commercial passenger flight as soon as possible notwithstanding continued safety concerns. Examination of the many factors that led to these disastrous consequences illuminates disquieting ethical issues of corporate behavior and lack of government oversight. There is a complex web of concerns involved. At the heart is a computer software that controls the aircraft (Maneuvering Characteristics Augmentation System, or MACS) which was a key element in the crashes. This seminar will require students to research and present some of the issues involved in this timely matter. Possible topics to be discussed include physics of flight, aeronautics, avionics, aircraft design, engineering ethics and the social responsibility of engineers, corporate interest and business ethics, the role of responsible government, issues of increased reliance on complex software replacing humans, etc. Students from all academic disciplines are welcome and encouraged to enroll. Attendance at all classes and other course-related activities is required to receive a “pass” grade, except for prior arrangement with the instructor or documented emergencies. “Guidelines Concerning Scheduling Conflicts with Academic Requirements” state “faculty may decline to enroll students in a class who cannot be present at all scheduled activities.” Food for Thought dining details will be discussed in class. Enrollment is by instructor approval. Students interested in enrolling should email the professor at <barsky@berkeley.edu>. This seminar is part of the Food for Thought Seminar Series.

Brian A. Barsky is Professor of the Graduate School. He is a Warren and Marjorie Minner Faculty Fellow in Engineering Ethics and Professional/ Social Responsibility. Prof. Barsky has faculty affiliations in Electrical Engineering and Computer Sciences (EECS), Optometry, Vision Science, Bioengineering, the Berkeley Institute of Design (BID), the Berkeley Center for New Media (BCNM), the Arts Research Center (ARC), and the Berkeley Canadian Studies Program. He received his Ph.D. from the University of Utah in Computer Science. His research interests include computational photography, contact lens design, computer methods for optometry and ophthalmology, image synthesis, computer aided geometric design and modeling, CAD/CAM/CIM, interactive and realistic three-dimensional computer graphics, visualization in scientific computing, computer aided cornea modeling and visualization, medical imaging, vision correcting displays, and virtual environments for surgical simulation.

Faculty web site: http://people.eecs.berkeley.edu/~barsky

Education 24, Section 1
Women and Athletics in American Higher Education (1 unit, P/NP)
Professors Catherine Koshland and Derek Van Rheenen
Monday 3:00-5:00, 31 Evans Hall, Class number: 32935


This seminar will focus on the evolution over the last 150 years of women and athletics in American higher education, with a particular focus on the University of California, Berkeley (Cal) within this national history. For example, the first intercollegiate athletic event for women was a basketball game between Cal and Stanford in December 1896. Class discussions will highlight issues around participation,
competition, access to opportunities, differences across the United States, professional opportunities, including coaching and athletic department leadership, and the NCAA. The course will also examine the effects of Title IX legislation in 1972 and since, including the Office of Civil Right (OCR) and the courts’ interpretation of this legislation, as well as the efforts made by colleges and universities to support gender equity. The class will engage with archival materials and primary sources in the Bancroft Library, view videos, read pertinent literature in the field and attend at least one women’s athletic competition on campus. Students will engage in a small-scale ethnographic project to culminate the learning objectives of the course.

The learning objectives for the seminar are as follows:

**Gain a historical and critical sensitivity to the intersection of women, sport, and American higher education;**

**Become familiar with an important aspect of Berkeley’s institutional and cultural history;**

**Be introduced to archival research and how to access primary sources and unique collections, as found in the Bancroft Library;**

**Develop communication and oral presentation skills; and**

**Complete a culminating course project at the intersection of women and college sports.**

Catherine P. Koshland is the Vice Chancellor for Undergraduate Education at the University of California, Berkeley, and the Wood-Calvert Professor in Engineering. She is a professor of Environmental Health Sciences in the School of Public Health and a professor in the Energy and Resources Group. Her research is at the intersection of energy, air pollution, and environmental (human) health, emphasizing mechanistic approaches as well as a systems perspective. It is conducted at multiple scales, from mechanistic analyses of combustion products in flow reactors to control strategies in urban airsheds to studies of human health.

Professor Koshland graduated with a B.A. in Fine Arts from Haverford College, studied painting at the New York School of Drawing, Painting and Sculpture, and received her M.S. in 1978 and her Ph.D. in 1985 in Mechanical Engineering from Stanford University. She was a former member of the Haverford College Board of Managers from 1994 – 2014 and served as Board Co-Chair from 2005 – 2009 and Chair from 2009 to 2014.

Professor Koshland has had a longstanding interest and commitment to the student athlete experience. She served on the first gender equity committee for the campus (part of the 1st NCAA certificate process); served on the Ad Hoc Advisory Committee on Intercollegiate Athletics and Recreational Sports chaired by Earl Cheit; and served on search committees for 3 Athletic Directors. She currently co-chairs the University Athletic Board (UAB). She played field hockey as a Division-3 player.

Derek Van Rheenen earned his Ph.D (1997) in Cultural Studies, his Master’s degree (1993) in Education, and his undergraduate degree in Political Economy/German (1986), all from U.C. Berkeley. Derek joined the faculty in 1997. He coordinates the Cultural Studies of Sport in Education (CSSE) M.A. Program in the Graduate School of Education. Professor Van Rheenen is also the Executive Director of the Athletic Study Center at U.C. Berkeley. As Director, Derek provides leadership in support of student athlete development through individualized and tailored academic support.

His publications include Envisioning Scholar Practitioner Collaborations: Communities of Practice in Education and Sport (2018), Out of Bounds: When Scholarship Athletes Become Academic Scholars (2010), and numerous articles and chapters. These include, among others, “Exploitation in college sports: race, revenue and educational reward,” “Becoming REGS: The Impact of Institutional Sport Elimination on Division I Student Athletes,” and “The Blind Leading the Blind: Goalball as engaged scholarship.”

As an undergraduate at Berkeley, Derek earned Academic All-American honors as a Division I student athlete and played professional soccer for several years following graduation. Derek was inducted into the CAL Athletic Hall of Fame in 2008.

Faculty web site: http://gse.berkeley.edu/faculty/dvanrheenen/dvanrheenen.html
English 24, Section 1
Emily Dickinson (1 unit, P/NP)
Professor Bryan Wagner
Wednesday 4:00-5:00, 189 Dwinelle Hall, Class number: 32148

We will be reading and discussing extraordinary poems by Emily Dickinson.


Faculty web site: https://english.berkeley.edu/profiles/74

English 24, Section 2
Cults in Popular Culture (1 unit, P/NP)
Professor Poulomi Saha
Tuesday 2:00-3:00, 305 Wheeler Hall, Class number: 33248

We are fascinated by cults. What is it about communities and groups that promise total belief and total enthrallment that so captures the imagination? This course will look at a range of representations of cults in popular culture -- from the documentary "Wild Wild Country" to novels, journalistic exposés, and films -- to consider what cults might tell us about society, politics, religion, and our sense of self. This class hopes to invite students who are ready to be themselves fascinated, enthralled, and perhaps entranced. One of the tasks before us will be to learn how to think critically in the face of that fascination. Students will also be asked to be ready to work collaboratively with one another over the course of the semester, building their own intentional community of sorts.

Poulomi Saha is Assistant Professor of English and author of "An Empire of Touch: Female Political Labor & the Fabrication of East Bengal." Affiliated faculty in the Program for Critical Theory, the Center for Race and Gender, and in the Designated Emphasis in Women and Gender Studies, she teaches courses in ethnic American literature, postcolonial studies, and gender and critical theory. Her research spans eastward and forward from the late 19th century decline of British colonial rule in the Indian Ocean through to the Pacific and the rise of American global power and domestic race relations in the 20th. She is currently at work on a new book, "Fascination: America's Hindu Cults," that looks to how Indian spirituality has long enthralled an American public imagination and fundamentally shaped its racial and spiritual self-conception.

Faculty web site: https://www.poulomisaha.com

Environmental Science, Policy, and Management 24, Section 1
Issues in Natural Resource Conservation (1 unit, P/NP)
Professor David Wood
Friday 10:00-11:00, 214 Haviland Hall, Class number: 26008

Some of the issues to be dealt with include management and preservation of timberlands; reducing fire risk through logging; management in wilderness areas; endangered species; importation and exportation of logs; the lives of John Muir and Gifford Pinchot; trees and religion; can rain forests be saved?; killer bees; coral reefs—human threat; jobs versus spotted owls; vegetarianism; Muir Woods, past and present; garbage in the United States; biofuels; solar power; airport expansion in the San Francisco Bay Area; the competition for water; fracking; global warming and geoengineering; and many more topics to be selected by the students.

Professor Wood’s research interests include host-selection behavior of forest insects, chemical ecology, the biology and ecology of bark beetles, forest pest management, the biodeterioration of wood by insects, and insect/pathogen/tree interactions. In 1995 he was awarded the Berkeley Citation for distinguished service to the University.

Among his numerous publications, he recently co-authored three research papers, one that is published in Forest Ecology and Management, one in Forest Science and one in Environmental Entomology.

Faculty web site: http://ourenvironment.berkeley.edu/people_profiles/david-wood/

Environmental Science, Policy, and Management 24, Section 2
Diversified Farming Systems: From Theory to Practice (1 unit, LG)
Professor Kathryn De Master
Location for on-campus meeting of 3/20/20 (1:00-5:00 pm) to be determined.,
Class number: 26009

Off-Campus field trip will take place on Saturday, March 21, 2020 from 7:00 a.m. to 8:00 p.m., driving time not included in contact hours.

This course offers an introduction to the theory and practice of diversified agro-ecological farming systems. Our seminar will combine in-class instruction with a field trip to area farms, to learn from farmers and view diversified farming systems practices in action. **This course is open to any freshman students interested in exploring the theory and practice underpinning diversified agro-ecological farming systems. Any student may attend, and the course is not limited to students with specific training in either the natural or social sciences.** The class will be graded but will be accessible to all Berkeley student participants.

Kathryn De Master is an Assistant Professor of Agriculture, Society and Environment in the Department of Environmental Science, Policy, and Management. She is a rural sociologist of agriculture whose work focuses on the changing structures in agriculture in the US and internationally. Her research interests include farmland access and financialization, the “agriculture of the middle,” diversified farming systems, participatory mapping, and the influence of corporations in agri-food systems. An avid advocate for community-driven rural conservation and development and diversified agro-ecological farming systems, De Master is an affiliated scholar with the Berkeley Food Institute and has facilitated numerous community-based participatory agri-food initiatives.

Faculty web site: http://ourenvironment.berkeley.edu/people_profiles/kathryn-de-master/

Environmental Science, Policy, and Management 24, Section 3
Soil Pollution and Remediation (1 unit, P/NP)
Professor Céline Pallud  
Monday 1:00-2:00, 78 Barrows Hall, Class number: 32717

This seminar will explore environmental quality from the aspect of soil science. Soil degradation is the decline in soil quality due to agricultural, industrial or urban activities. Soil degradation is a global problem that encompasses physical, chemical and biological deterioration. Soils play crucial roles in the quality of our environment, affecting, for example, food and water quality and quantity, and supporting many living organisms. This seminar will focus on soil pollution, and on remediation, which is the removal of pollutants and contaminants. An understanding of soil properties and processes is essential to understand how pollutants behave in soil, and how to design (bio)remediation strategies. The seminar will introduce students to basic soil properties and will include current topics, relevant problems and discussion of emerging approaches to soil remediation, with a focus on bioremediation and phytoremediation (using soil microorganisms or plants to clean up soils).

C. Pallud has been teaching soil science and doing research on soil and environmental quality at UC Berkeley for the last five years. Her research and background are strongly multidisciplinary, at the interface between soil physics, soil chemistry and soil microbial ecology. Her research is focused on understanding how those nutrients and contaminants cycle in the environment, with implications for maintenance of water and soil quality, evaluation of pollution risks, and design of (bio)remediation strategies.

Faculty web site: http://celinepallud.com/

French 24, Section 1  
Immigration in France: The Arabic Paris (1 unit, P/NP)  
Professor Thoraya Tlatli  
Thursday 2:00-3:00, 4125A Dwinelle Hall, Class number: 30856

This course is designed to give a new perspective on the city of Paris when it is considered through the perspective of its immigration history. It is, as well, an introduction to the history of North African immigration in France in the twentieth- and twenty-first centuries. We will first focus on the main historical events that rendered the massive North African immigration possible and sometimes unavoidable, because of French colonialism. We will then pay close attention to the various cultural ways in which the city of Paris has been shaped and transformed by immigration, throughout the twentieth- and twenty-first centuries. We will consider the ways in which the city of Paris has been in some ways redefined by its North African immigrant population by examining cultural documents, such as films, music, food and literature. **Course taught in ENGLISH. No knowledge of French is needed.**


French 24, Section 2  
Surfing the French New Wave (1 unit, P/NP)  
Professor Nicholas Paige  
Wednesday 3:00-4:00, 4125A Dwinelle Hall, Class number: 32157

The French New Wave is perhaps the most emblematic moment in modern cinema, one that continues to inspire filmmakers from Los Angeles to Teheran to Hong Kong. This seminar will give students the
opportunity to explore a dozen or so movies from this extraordinary flowering of filmmaking talent in the late 1950s and early 1960s. Films discussed include works by Godard, Truffaut, Varda, Rohmer, and Resnais, just to name a few. We will also be reading some important short essays from the period that will help bring the films’ preoccupations into focus. Students will be able to stream subtitled versions of the films on their own schedules. For additional details, please visit dept. website at http://french.berkeley.edu Course taught in ENGLISH. No knowledge of French is needed.

Along with the New Wave and the history of Paris, Professor Paige teaches seventeenth- and eighteenth-century French literature and culture. His main research area is the history of the novel, with special interest in quantitative approaches to literary history. He has also published on Jean-Luc Godard.

Faculty web site: http://french.berkeley.edu/people/detail.php?person=12

**Geography 24, Section 1**  
Platform urbanism: The changing relationship between technology and cities

(1 unit, P/NP)  
Professor Desiree Fields  
Tuesday 11:00-12:00, 575 McCone Hall, Class number: 32799

From the reconfiguration of urban space to accommodate ridehailing platforms to Airbnb’s impacts on housing markets, from Google’s efforts to map Rio de Janeiro’s favelas to its redevelopment of a waterfront neighborhood in Toronto, the relationship between digital platforms and cities is impossible to ignore. This seminar will explore the dynamics of this relationship, and of technology and the urban more broadly. We will examine the history of technological imaginaries of cities; consider the difference between smart cities and platform urbanism; discuss the social, spatial, and ecological implications of platform urbanism; and dwell on the urban politics of platforms. Freshmen in Geography or related social sciences (City Planning, Global Studies, History, Sociology, Urban Studies, etc.) and those in relevant fields (Engineering, Computer Science, etc.) open to new perspectives. Any student with an interest in the topic and the willingness to do some required reading and discussion every week is welcome.

Desiree Fields is an Assistant Professor in the Department of Geography at Berkeley, where she is also a core faculty member in the Global Metropolitan Studies program. Fields studies housing as a vector of urban inequality and terrain of grassroots political contestation. Her current work explores how the shift to a finance-oriented political economy and the growing reach of digital platforms reshape urban housing markets, and resulting struggles for justice. Ranging from participant observation at tech industry conferences to popular education workshops with tenant activists, this project includes fieldwork on platform business models for rental housing in Berlin, London, and San Francisco. Fields is also a Visiting Fellow at the Urban Institute at the University of Sheffield, UK, and a core partner of the Housing Justice in Unequal Cities network (based at UCLA).

**Geography 24, Section 2**  
Reading Gramsci in the Days of Trump-Bannonism (1 unit, P/NP)

Thursday 4:00-5:00, 575 McCone Hall, Class number: 33293

Try googling “Gramsci” along with Trump, Bannon, and some of the many other right-wing nationalist figures such as Modi, Bolsonaro, Erdogan, le Pen, Orban and Putin. You will see that, in different regions of the world, many on the Left and some on the Right are turning to the Italian scholar-activist Antonio Gramsci (1891—1936) to explain the current moment – as well as to try moving in diverse political directions. Gramsci was thrown in prison by Mussolini in 1926, with the prosecutor vowing “to stop this brain from working for 20 years”. Defying this hope, Gramsci produced 3000 pages of notes before his death in detention 10 years later. In his Prison Notebooks he reflected both on the failure of the
revolutionary movements in which he had been engaged, and on what this meant for a more effective strategy. Yet the multiple interpretations and deployments of Gramsci in the present moment exemplify a longstanding problem—namely, that the concepts and arguments laid out in the Prison Notebooks can and have been read and used in very different ways. In this seminar we will explore the question of what it means to bring Gramsci’s writings to bear on contemporary challenges—bearing in mind, as Stuart Hall once observed, that we cannot just beam Gramsci down and ask him to solve our problems for us.

**German 24, Section 1**  
Nietzsche at the Movies (1 unit, P/NP)  
Professor Karen Feldman  
Wednesday 10:00-11:00, 282 Dwinelle Hall, Class number: 32749

In this freshman seminar we will read and discuss short excerpts from the work of Friedrich Nietzsche and relate those excerpts to popular films. We will focus on the following topics: Apollo vs. Dionysus; strength and weakness; truth and representation; history; and repetition. The goal is to develop a cursory understanding of some central Nietzschean concepts.

Karen Feldman a Professor of German. She works on aesthetics, critical theory and literary theory.

Faculty web site: http://german.berkeley.edu/people/professors/karen-feldman/

**Global Studies 24, Section 1**  
Diversity, Identity, and Social Justice: America in Global Perspective (1 unit, P/NP)  
Lecturer Darren Zook  
Tuesday 2:00-3:00, 122 Wheeler Hall, Class number: 22530

Diversity is perhaps the most important social issue in America. As a concept, diversity includes and relates to a number of other issues, such as racism, discrimination, social justice, immigration, marginality, integration, and so forth. Many a program has been put in place to address and resolve these issues, in the hope that, over time, America would come together and make all of its differences work collectively as one harmonious and integrated society. For some people, this is already happening. For others, America seems more divided now than ever, and diversity has failed to deliver on its promise.

This seminar will delve into the complexities of this thing we call diversity, to explore the rhetoric and the reality of diversity as it currently exists in America. We will do this by reading accounts of diversity as it happens—not just in the news but also in a variety of different media—and then learning how to discuss critically the central issues of diversity. The goal is not just to talk about diversity, but also to learn how to talk about diversity in ways that are both critical and constructive. Diversity is an extraordinarily sensitive issue, and too many people simple avoid the conversation to avoid the discomfort that might ensue.

Darren Zook has been a member of the faculty at the University of California, Berkeley, since 2000. He teaches in International and Area Studies and in Political Science. He has taught previously at the University of California, Davis, and at the Claremont Colleges in southern California. In 2012, he was a Fulbright Research Scholar in Singapore working on a project that focused on cybersecurity in the Asia-Pacific region.

During his time at the University of California, Berkeley, Darren Zook has taught and published on a wide variety of topics, including the politics of the Asia-Pacific region, human rights and international law, terrorism and security studies, multiculturalism and diversity, and economic policy with a focus on anti-corruption programs. His research interests have continuously grown into an unusually broad portfolio of international and comparative projects, and his work has taken him to various parts of Asia, the Pacific Islands, and northern Europe.
Zook has recently published a four-book series, entitled Ourselves Among Others: The Extravagant Failure of Diversity in America and An Epic Plan to Make It Work, which is an engaged critique of current diversity policy and practice in the United States and elsewhere in the world.

**Global Studies 24, Section 2**  
**Global South in the NY Times: Reading like an Anthropologist (1 unit, P/NP)**  
**Lecturer Clare Talwalker**  
**Tuesday 3:00-4:00, 78 Barrows Hall, Class number: 23188**

This Global Studies Freshman Seminar will explore diverse ways of thinking about the economy, with a focus on Global South coverage in the New York Times and drawing on the writings of feminist economic geographers J. J. Gibson-Graham. Students will work in pairs to facilitate one class meeting per pair in the semester, working closely with the instructor to design that class.

Clare Talwalker is a continuing lecturer in International and Area Studies and core faculty of the Global Poverty and Practice Minor. She is also co-editor of a UC Press book series Poverty, Interrupted. Trained in cultural anthropology, she has written about the public sphere, social inequalities and postcoloniality in India. She has also written about students working to abolish poverty. She offers classes on poverty/inequality, political economy, cultures and capitalisms, and India. Talwalker grew up in Mumbai, India. She earned her B.A. at Dartmouth College and her Ph.D. at Duke University.

**Global Studies 24, Section 3**  
**Best Movies of All Time (1 unit, P/NP)**  
**Lecturer Peter Bartu**  
**Thursday 5:00-6:00, 210 Dwinelle Hall, Class number: 24287**

Consider yourself a budding movie critic? Have an opinion on everything? Or just looking to hang out and converse about the greatest movies of all time? Look no further. We will of course consider Casablanca, the Battle of Algiers, the first Max Max movie (and the last), Bladerunner (duh, the first one), Point Break, both of them, Superbad, and Wild Tales (from the bad heart of Argentina), the Departed, Heat, and anything with Javier Bardem and Penelope Cruz in it (No Country for Old Men, Counsellor, Vicky Christina Barcelona). Disagree with the selection? Come and make a case for your top ten movies, no genre left unexplored. One movie each week.

Dr. Peter Bartu teaches courses at the University of California, Berkeley on Political Transitions in the Middle East, the Gulf States, and International Organizations & Global Governance. He has worked with the United Nations in a variety of roles throughout the Middle East including as a member of the UN’s stand-by mediation team in Benghazi and Tripoli during the Libyan revolution. In 2008-2009 he led a United Nations team that produced a seminal report on the disputed internal boundaries between the Arabs and the Kurds in Iraq including Kirkuk. He has worked as a foreign policy advisor in the Australian Prime Minister’s Department and the Sydney Organizing Committee of the Olympic Games and in his spare time enjoys open water swimming at the Dolphin Club in San Francisco.

**History 24, Section 1**  
**Philosophical Provocations (1 unit, P/NP)**  
**Professor Michael Nylan**  
**Tuesday 11:00-12:00, 3205 Dwinelle Hall, Class number: 32825**

Herbert Fingarette, one of the most distinguished philosophers of his time and ours, wrote a manuscript which had just gone to his publisher shortly before his death in November 2018. Under, perhaps, the influence of Berkeley’s own Bernard Williams, Fingarette was interested in the "limits" of moral
philosophy, given his (and Williams’) belief that “much, if not most of our actions are inadvertent, involuntary, thoughtless, by habit or rote, or otherwise unintentional,” and that philosophers often do not agree on the basic premises of their reasoning. Fingarette therefore wrote a series of short “provocations” (his word) that lay out the different ways thinkers have approached a series of life’s conundrums, for example, How much do we owe others while taking care of our own interests? Is partiality for one’s own family and friends appropriate when we try to think of the larger, common good? Is the search for knowledge and truth unalterably opposed to political action? What guidelines serve us when we operate, always, with insufficient information about present and future realities? It is precisely these sorts of problems that this course will explore throughout the semester, one per week. The goal of the course will be not to read a great deal, but to think harder about how we see the world and operate in it.

Dr. Michael Nylan has been a professor in the History Department at UC Berkeley since 2001. Her research focuses on the history of the early empires in China (roughly 323 BC to AD 316), on manuscript vs. print culture, and on the use and abuse of Chinese "history" in modern politics.

Faculty web site: http://history.berkeley.edu/people/michael-nylan

History 24, Section 2
Campus Treasures: The museums, archives and rare books of Berkeley (1 unit, P/NP)
Professor Tom Laqueur
Thursday 2:00-4:00, Permanent location to be determined (see special schedule notes), Class number: 32866

The first few meetings of the class, beginning on Thursday, January 23, will be held in 3401 Dwinelle Hall.

After initial meetings in which we will discuss the history of museums, archives and rare book collections and their place in the organization of knowledge we will visit, and get back stage introductions to, the Berkeley Art Museum, the Magnes Collection of Jewish Art and Life, the museums of entomology, paleontology, and botany (the Jephson and University Herbarium) in the Valley Life Sciences Building as well as the Ethnic Studies Library archives, and the rare book collections, LGBT, and oral history archives of the Bancroft Library among others. One two hour meeting/week.

Thomas Laqueur is a cultural historian who has written on the history of education, religion, medicine, human rights and working class politics as well as, more recently, on sexuality (two books) and on questions of memory and memorialization. His most recent book is called The Work of the Dead: A Cultural History of Human Remains.

Faculty web site: http://history.berkeley.edu/people/thomas-w-laqueur

History of Art 24, Section 1
Thinking about the Strangeness of Photography

(1 unit, P/NP)
Professor Darcy Grimaldo Grigsby
Tuesday 1:00-3:00, 308B Doe Library (seminar room), Class number: 32785

Class will meet on Tuesdays from January 21 to March 3, 2020.

This seminar will introduce students to the complexity of photography as a medium and its history. We will read some of the classic texts on photography from the nineteenth century to the present. Rather
than focusing on photography as a “high art,” we will think about what it means to put this medium in the museum. Throughout the course we will do a lot of looking and thinking about how we use and see photography in our daily lives. **This seminar is open to all freshman students and should be of interest to many.**

Darcy Grimaldo Grigsby is the Richard and Rhoda Goldman Distinguished Professor in the Arts and Humanities at University of California, Berkeley. She was born in the Panama Canal Zone and specializes in eighteenth- through twentieth-century French and American art and visual culture, particularly in relation to the politics of race, slavery, and colonialism. She is the author of three books: Extremities. Painting Empire in Post-Revolutionary France (2002); Colossal. Engineering the Suez Canal, Statue of Liberty, Eiffel Tower and Panama Canal. (2012); and Enduring Truths. Sojourner’s Shadows and Substance (University of Chicago Press, 2015). She has just completed her fourth book: Creole. Portraying France’s Foreign Relations in the Nineteenth Century (forthcoming, Penn State University Press) and has launched a new book project provisionally entitled For Want of Color that examines the pervasive practice of hand-coloring personal photographs from the nineteenth century to the 1950s.

**Integrative Biology 24, Section 1**  
**Ethnobiology, Nutrition, and Global Food Systems (1 unit, P/NP)**  
**Professor Thomas Carlson**  
**Tuesday 10:00-11:00, 4110 VLSB, Class number: 19988**

We will explore the ethnobiological systems around the world that generate thousands of different species of plants and animals eaten by humans. We will examine the historical, cultural, commercial, and biological factors that have resulted in the worldwide consumption of certain plant and animal species. We will also compare the nutritional qualities, health effects, and carbon footprint of conventional industrial food, organic food, locally grown food, and food that is hunted or gathered. In this seminar we will read Michael Pollan’s Omnivore’s Dilemma and view the documentary film Food Inc. **Any interested Freshmen are welcome.**

Thomas Carlson is a physician and ethnobotanist who is on the faculty of the Department of Integrative Biology and is Curator of Ethnobotany in the University and Jepson Herbarium at the University of California, Berkeley. He has conducted food plant and medicinal plant research with, and provided medical care for, over forty different ethno-linguistic groups in fifteen different countries in South America, Central America, North America, Africa, Asia, and Pacific Islands. Tom’s multidisciplinary work with diverse institutions, biocultural environments, and communities has helped illuminate how local indigenous ethnobotanical systems contribute to human health and ecosystem health.

Faculty web site: http://ib.berkeley.edu/people/faculty/carlsont

**Integrative Biology 24, Section 2**  
**How and Why Do Birds Sing (1 unit, P/NP)**  
**Professor George Bentley**  
**Tuesday 2:00-3:00, 4110 VLSB, Class number: 19989**

Do you ever wonder why some birds sing and others just call? Would you like to know how songbirds produce such melodious tunes? What about the dawn chorus? Sexual attraction? Aggression? It’s just the day-to-day life of songbirds. Come and learn about the anatomy and physiology of birdsong, from the specialized organs to highly evolved brains. Find out how bird song can cause hormones to surge. This seminar will cover the hows and whys of vocal communication in birds with an emphasis on what classic and cutting-edge research has taught us.

George Bentley received his B.Sc. in biology (1993), and his Ph.D. in zoology (1996) at the University of Bristol in the United Kingdom. Following receipt of his doctorate, Dr. Bentley joined the Behavioral
Neuroendocrinology Group at Johns Hopkins University, initially as a postdoctoral fellow and later as an associate research scientist. In January 2000, Dr. Bentley moved to Professor John Wingfield's laboratory at the University of Washington as a research associate in the Departments of Psychology and Biology. Dr. Bentley moved to Berkeley in June of 2005, where he is an Associate Professor in the Department of Integrative Biology and his lab focuses on how the brain detects environmental cues and turns them into hormonal signals. These signals in turn affect the behavior and physiology of the organism itself, or organisms to which the behavior is directed. For example, a male bird's song can cause a female to solicit copulation and change her hormonal status. Exactly how the brain performs this feat is largely unknown, but birds are an excellent model for this type of research as they have extravagant auditory and visual displays. The research in Dr. Bentley's lab is mostly performed on birds, but is not limited to this vertebrate class. Current projects in the lab involve sheep, horses, rats, mice, hamsters and humans; many of these projects are in collaboration with other labs around the world (Japan, New Zealand, Germany, United Kingdom). Undergraduates are especially encouraged to get involved in active research projects. Currently, there are nine undergraduates working in the Bentley lab on neuroendocrine mechanisms of regulation of reproduction and on the neural basis of song behavior.

Faculty web site: http://ib.berkeley.edu/people/faculty/bentleyg

Integrative Biology 24, Section 3
Animal Navigation: Which Way is Home? (1 unit, LG)
Professor Roy Caldwell
Monday 2:00-3:00, 5192 VLSB, Class number: 19990

A homing pigeon can return to its loft after being shipped one thousand km to a place it has never been. A whale spends its summers in the Bering Sea and its winters near Maui. A female sea turtle returns for the first time to a beach where she hatched thirty years earlier to lay her own eggs. A Monarch butterfly flies south two thousand km to spend the winter in a secluded grove in central Mexico. A limpet returns forty cm to a favorite depression in a rock. The abilities of animals to navigate have intrigued biologists for decades. We will read a series of papers describing how animals navigate and how they use such methods as landmarks, celestial cues, and geomagnetic fields to determine where to go and what route to follow. We will also attempt to replicate experiments that suggest that humans are able to navigate using geomagnetic fields. This seminar is as much about the process of science as it is about animal navigation. We will first explore examples of animal navigation and how the underlying mechanisms are being researched. We will then examine experiments that suggest a human navigation ability based on geomagnetic input, and finally we will design an experiment to test if humans have the ability to detect and/or use a geomagnetic sense as do many other animals. At the end of the semester each student will write a short scientific paper presenting the results of the class experiment. The seminar is designed for students interested in biological research. Registration for this seminar is limited to 15 students.

The seminar is designed for students interested in biological research.

My research interests lie in invertebrate behavior and ecology with much of my work centered on the behavioral ecology of stomatopod crustaceans, a group of tropical marine predators. The initial focus of this research was on how the evolution of potentially lethal weapons influenced stomatopod biology. These studies dealt mainly with communication and the functions of aggression. More recent research expanded to include the evolution of mating systems, interspecific communication, sensory ecology, prey selection and the biomechanics of the strike. We have also used stomatopod populations as bio-indicators to assess the health of tropical coastal habitats. I have also become interested in the behavior of blue-ringed and other pygmy octopuses. We are currently studying the behavior of several species. Much of my research has centered in the tropics including programs at Lizard Island, Moorea, Panama and Indonesia.

Faculty web site: http://ib.berkeley.edu/people/faculty/caldwellr
Integrative Biology 24, Section 4
Marine Ecosystems in Peril (1 unit, P/NP)
Professor Wayne Sousa
Monday 3:00-4:00, 5192 VLSB, Class number: 19991

Marine ecosystems are experiencing severe stress and disturbance from a variety of human activities, including climate change (warming temperatures, acidification, intensification of storms, and sea-level rise), coastal development (including mariculture), pollution, over-exploitation of resources, and introductions of non-native species. This seminar will examine case studies of these phenomena and others, and explore ways of reducing their impacts or restoring already damaged habitats. We will draw our information primarily from peer-reviewed scientific literature. A weekend field trip to a marine habitat will illustrate some of the harmful local impacts of human activities. I'm looking for students with an interest in ecology and environmental science. Prior knowledge of marine habitats and organisms is not a requirement.

I have been a faculty member at Berkeley since 1977, first as a member of the Zoology Department, and now Integrative Biology. My early research was on the response of seashore communities to natural disturbances. I then studied salt marsh host-parasite interactions, focusing on the host snail, Cerithidea californica and its larval trematode parasites. I am now investigating the biological and physical factors that structure tropical mangrove forests on the Caribbean coast of Panama.

Faculty web site: https://sousalab.squarespace.com/

Integrative Biology 24, Section 5
The Emergence of Infectious Disease (1 unit, P/NP)
Professor Michael Boots
Wednesday 4:00-5:00, 4110 VLSB, Class number: 24265

The emergence of new and the re-emergence of known infectious diseases continues to cause devastating epidemics, not only in human populations, but also in agriculture and wildlife. Where do they come from? Why do they emerge? Can we predict the next one? How virulent are they likely to be? This seminar will discuss these questions in the context of evolution and ecology.

My research focuses on the ecology/epidemiology and evolution of infectious disease. Parasites and pathogens continue to cause a major burden to human health, cause significant damage in agriculture, and are ubiquitous in nature. The overall aim is to understand the evolution of parasites, of host defense and how infectious organisms spread, persist and affect their host populations. We use a combination of evolutionary theory, experimental host-parasite systems, epidemiological models of wildlife and human tropical disease, and field entomology.

Integrative Biology 24, Section 6
The Darwinian Revolution (1 unit, LG)
Professor Brent Mishler
Thursday 10:00-11:00, 4110 Valley Life Sciences Building, Class number: 24288

The Darwinian Revolution was one of the greatest upheavals in human thought, involving the very basis of our self-awareness: Where did we come from? What is or should be the basis for our ethics and social behavior? Where are we going? Topics to be considered include the historical antecedents of Darwin's theories; the scientific evidence for evolution and natural selection; the impact of Darwinism on religion, social theory, and ethics; later scientific developments and recent challenges by latter-day creationists. The goal is to use these interdisciplinary topics as an exemplar of scientific methods and change, and of the unsteady relationship between science and the public. In addition to attending and participating in each week's lecture/discussion, each student will be required to write a short paper (five pages maximum) due at the end of the semester.
Brent Mishler is Director of the University and Jepson Herbaria at the University of California, Berkeley, as well as a professor in the Department of Integrative Biology, where he teaches phylogenetic systematics and plant diversity. He received his Ph.D. from Harvard University in 1984, and was on the faculty at Duke University in Durham, NC for nine years before moving to UC Berkeley in 1993.

Faculty web site: http://ucjeps.berkeley.edu/people/mishler.html

**Integrative Biology 24, Section 7**  
**Biological Impacts of Climate Change (1 unit, P/NP)**  
**Professor Caroline Williams**  
**Tuesday 2:00-3:00, 5192 Valley Life Sciences Building, Class number: 32714**

The pace of current climate change is orders of magnitude faster than any changes experienced in the Earth’s past. This is reconfiguring biological diversity in ways that we are only beginning to recognize. Organisms are shifting their distributions in time and space, and experiencing population fluctuations and extinctions. In this seminar we will explore the biological impacts of climate change on plants, animals (including humans), communities, and ecosystems. **This seminar is for anyone who cares about the planet, wants to understand climate change research, and become a more effective advocate for understanding climate change. You must be prepared to fully engage with the course, contribute actively to discussions, and do all the readings.**

Caroline Williams is an Assistant Professor in Integrative Biology. She is an evolutionary physiologist who studies the evolution of metabolism in response to environment perturbations. One of her research foci is the responses of insects to winter climate change.

Faculty web site: http://cmwilliamslab.com

**Linguistics 24, Section 1**  
**Language Myths (1 unit, P/NP)**  
**Professor Larry Hyman**  
**Wednesday 11:00-12:00, B4 Dwinelle Hall, Class number: 20186**

Everyone has preconceptions about language in general and languages in particular. But are these accurate? The purpose of this course is to discuss a number of widespread “language myths”: misleading, misplaced, or just plain false ideas that the general public has about the nature of language or about specific languages such as standard and non-standard English, French, unwritten languages etc. In our weekly meetings we will discuss and evaluate a number of such common language myths, for example: Are all languages equally complex? Are some more logical? More beautiful? Is there such a thing as a primitive language? Do some people speak more grammatically than others? Is the English language undergoing a process of decay? We will draw on facts from English, other languages that may be familiar to participants, and lesser known languages which bear on the above and other questions. **No linguistic or other prerequisites are required. All interested students are welcome, especially students who have a fascination with language and/or languages.**

Larry M. Hyman is a Professor of Linguistics at Berkeley where he chaired the Department of Linguistics from 1991 to 2002. He obtained his Ph.D. at UCLA in 1972 and subsequently taught at USC until coming to Berkeley in 1988. His research centers around the study of sound systems (phonology) and grammar, particularly within Bantu and other Niger-Congo languages in Africa. His publications include several books and numerous articles in the major journals in general and African linguistics, and has recently served as President of the Linguistic Society of America. One of his long-standing interests is the study of tone languages, as found in Africa, Asia, Meso-America and elsewhere.

Faculty web site: http://linguistics.berkeley.edu/people/person_detail.php?person=19
Materials Science and Engineering 24, Section 1  
Materials and Weapons of War through History (1 unit, P/NP)  
Professor J. W. Morris Jr.  
Friday 10:00-11:00, 47 Evans Hall, Class number: 28494

For most of known history, advances in materials technology have appeared primarily in two areas: objects of art and weapons of war. The former build civilization. The latter have often set its course, as critical military engagements from Kadesh to Kosovo have most often been dominated by the forces with the superior technology. In this seminar, we shall use the development of weapons through history as a vehicle to understand the important properties of different types and classes of materials, and trace their technological development and technical significance across the millennia.

Professor Morris has been a member of the Berkeley faculty since 1971 and was Program Leader for the Advanced Metals Program at the Lawrence Berkeley Laboratory for almost twenty years. He has taught the introductory course Material Science and Engineering 45 for most of that period, and is a recipient of the University's Distinguished Teaching Award.

Faculty web site: https://mse.berkeley.edu/people_new/morris/

Mathematics 24, Section 1  
Using Random Walks in the Physical and Social Sciences (1 unit, P/NP)  
Professor F. Alberto Grunbaum  
Thursday 10:00-12:00, 939 Evans Hall, Class number: 20323

The class will be held on Thursdays for seven (7) weeks, from January 30 through March 12, 2020.

Random walks (whatever they are) have been used as models to understand all sorts of phenomena. More recently this has been enriched with the introduction of so-called "quantum walks." I will explain what this is all about and illustrate some of the surprising results one can explain with these tools by looking at the so called Parrondo's paradox (you may want to Google this one).

Alberto Grunbaum is a Professor in the Mathematics Department at UC Berkeley. His fields of expertise include analysis, probability, integrable systems and medical imaging.

Faculty web site: http://math.berkeley.edu/people/faculty/f-alberto-gruenbaum

Mechanical Engineering 24, Section 1  
Art and Science on Wheels (1 unit, P/NP)  
Professor Benson Tongue  
Tuesday 10:00-11:00, 104 Dwinelle Hall, Class number: 32937

This seminar will examine two devices near and dear to my heart—the automobile and the bicycle. Both of these have undergone a long history of change and innovation; both inspire passion in their users; and both embody technical as well as artistic excellence. Some issues we will look at will be efficiency, alternative power sources, environmental impact, dynamics, aerodynamics and handling. Along the way we'll dispel some myths, and ideally people will leave with a deeper appreciation for what bicycles and cars truly represent. **Upright bipeds with bilateral symmetry preferred. Hopefully mammalian.**

Benson likes to profess in the Department of Mechanical Engineering. His interests lie in the fields of vibrations, dynamics and controls, not to mention Scottish dancing, bicycling, fast cars, bird watching,
photography and playing around with Photoshop. His books, Principles of Vibrations and Dynamics: Analysis and Design of Systems in Motion, make great bedtime reading.

Faculty web site: http://www.me.berkeley.edu/faculty/tongue/

**Molecular and Cell Biology 90E, Section 1**  
**Matter, Mind, Consciousness (1 unit, P/NP)**  
**Professor David E. Presti**  
**Thursday 11:00-12:00, 107 Mulford Hall, Class number: 18492**

All we know comes to us via our mental experience: our thoughts, feelings, perceptions, and conscious awareness. However, it is a deep mystery as to how the physical processes of our brain and body are related to the subjective experience of consciousness. Investigation of this mind-body connection is among the most profound challenges in all of science, impacting everything about who we believe we are and how we relate to the rest of what we call reality. While biophysical science has made great progress in understanding the structure and function of brains and bodies, the nature of consciousness remains in many ways as deeply mysterious today as it was centuries ago. I argue that revolutionary ideas will be required in order to take a science of consciousness to a place of deeper insight. We will address this question from the perspectives of biology, philosophy, physics, psychology, and sociology—cognitive science, broadly defined. **Students interested in all areas of the arts, humanities, and sciences are encouraged to enroll. This seminar is part of the Food for Thought Seminar Series.**

David Presti has taught neuroscience at UC Berkeley for twenty-eight years. For the past fifteen years, he has also been teaching neuroscience to Tibetan monks and nuns in India, Bhutan, and Nepal. He is author of Foundational Concepts in Neuroscience: A Brain-Mind Odyssey (2016) and of Mind Beyond Brain (2018).

Faculty web site: http://mcb.berkeley.edu/labs2/presti/

**Music 24, Section 1**  
**Javanese Shadow Play and Its Music (1 unit, P/NP)**  
**Professor Benjamin Brinner**  
**Tuesday 2:00-3:00, 243 Morrison Hall, Class number: 32368**

This seminar explores the use of music as an integral part of theatrical story telling through the medium of Javanese shadow plays. These performances bring together two-dimensional puppets, intricately carved and painted, with story telling, song, and instrumental music in a show that mixes humor, philosophy, drama, and political commentary, on the basis of characters and plots derived from local versions of the Indian ‘epics’ Mahabharata and Ramayana. The course will culminate in attendance at, and discussion of, a Javanese shadow play performed on campus. There will be opportunities to discuss music in relation to other types of theatrical performance. No prior experience necessary.

A member of the faculty in the Department of Music at UC Berkeley since 1989, I teach undergraduate and graduate courses in ethnomusicology, drawing on many years of research in Indonesia and Israel, as well as less extensive engagement with people making and enjoying various kinds of music in the US, Ireland, and the UK. I am particularly interested in how musicians know what they know and do what they do, with focus on interaction among members of an ensemble and expert memory for music. Other topics I research and teach include musical instruments and music in support of oral narrative, including the role of music in accompanying Javanese shadow plays.
Natural Resources 24, Section 1
Global Environment Theme House Freshman Seminar (1 unit, P/NP)
Professor Kate O'Neill
Monday 5:00-6:30, Clark Kerr Campus, Building 1, Class number: 26192

After the formal sessions, the professor and students may continue their discussion informally over dinner in the Dining Commons. Food for Thought dining arrangements and field trip arrangements will be discussed in class.

The goal of this Freshman Seminar is to bring students and faculty together to explore issues such as global environmental change, policy and management of natural resources, sustainable rural and urban environments, and environmental leadership. The seminar will provide students and faculty a forum to exchange ideas, challenge one another’s thinking, and share experiences in a small group setting. Students will have the opportunity to do research and teach their peers about regional to global environmental issues in preparation for Theme Program field trips and guest speakers. **Course enrollment is restricted to Global Environmental Theme House participants. Obtain CEC from the instructor.** This course is also listed as .

Kate O’Neill joined the Department of Environmental Science, Policy and Management at UC Berkeley in 1999, specializing in the field of global environmental politics and governance. She writes on the ever-changing nature of global environmental challenges and our responses to them, on environmental activism and social movements, and on the global political economy of wastes. She teaches upper division and graduate courses in International Environmental Politics, and is a leading faculty advisor in the Conservation and Resource Studies Major in the College of Natural Resources. She holds a Ph.D. in Political Science from Columbia University, and is a co-editor of the journal Global Environmental Politics. She is currently the Resident Faculty member in Unit 2.

Near Eastern Studies 24, Section 1
Animals in Ancient Egypt  (1 unit, LG)
Professor Carol Redmount
Thursday 1:00-2:00, 252 Barrows Hall, Class number: 30824

The ancient Egyptians had a rich and multifaceted relationship with the natural world around them, especially with animals. Animals, domestic and wild, played symbolic roles in the Egyptian universe as representatives and manifestations of various deities, and practical roles in the lives of ancient Egyptians where they functioned as pets, food, and offerings to the gods. In this one-hour seminar we will look at some of the many different ways the ancient Egyptians related to the animals populating their universe. **Seminar open to freshman students. No background in field required.**

Carol Redmount is an archaeologist who has been excavating in the Middle East, and especially Egypt, for over thirty years. Her fieldwork research has taken place in Egypt, Jordan, Israel, Cyprus, Tunisia and the United States. Over the years she has adopted cats from Israel and Jordan and sponsored a dog and a cat from Egypt for adoption. She has always been fascinated by the ancient Egyptians’ complex relationships with the many animals in their world and looks forward to exploring these further in this seminar. She lives in Berkeley with four rescue animals—one small dog and three cats—as well as two parrots.

Faculty web site: [http://nes.berkeley.edu/Web_Redmount/Redmount.html](http://nes.berkeley.edu/Web_Redmount/Redmount.html)

Nuclear Engineering 24, Section 1
How It’s Made (1 unit, P/NP)
Professor Peter Hosemann
Monday 12:00-1:00, 47 Evans Hall, Class number: 28576
This class is an introduction to the conventional manufacturing techniques of components used in nuclear and other engineering applications. An introduction to metal fabrication will be given, including, but not limited to, a brief introduction to refining, casting, forming, machining and joining. After an overview of the techniques available to engineers, the students will be expected to perform a literature review and discuss how specifically chosen components can be manufactured. In addition, the students will be encouraged to participate in the campus-offered machine-shop training where basic skills in machining are taught after a short introduction by the professor to the shop tools.

Originally from Vienna Austria, Peter Hosemann earned his MS in 2005 and his PhD in 2008 at the Montanuniversitaet Leoben in Austria in Materials Science. Professor Hosemann is interested in experimental materials science for nuclear applications. His main focus is on structural materials used for nuclear components (fission, fusion, spallation, etc.). His research focuses on developing a basic understanding of the materials' degradation processes in a nuclear environment and resulting consequences to engineering application.

**Nuclear Engineering 24, Section 2**

**Radioactivity and Society: The Good, the Bad and the Ugly (1 unit, P/NP)**

**Professor Eric Norman**

**Thursday 9:00-10:00, 41 Evans Hall, Class number: 28577**

Ever since its discovery over a hundred years ago, the phenomenon of radioactivity has had profound effects on our society. From Madam Curie to Homer Simpson, radioactivity has been the subject of much fact and fiction. In this seminar, we will examine the history of radioactivity, its uses in medicine, industry, and space exploration, as well as the ways in which society has viewed this often misunderstood physical phenomenon. **This course is designed for any student interested in becoming better informed about both the positive and negative aspects of radioactivity and its influences on society.**

Eric Norman is an Emeritus Professor of Nuclear Engineering. Professor Norman taught both undergraduate and graduate level courses in nuclear physics in the Nuclear Engineering Dept. from 2006 to 2014. Previously he worked as an experimental nuclear scientist at Lawrence Livermore and Lawrence Berkeley National Laboratories. His research interests include neutrino physics, nuclear astrophysics, and nuclear forensics for non-proliferation and national security. He is a fellow of the American Association for the Advancement of Science and the American Physical Society.

Faculty web site: [www.nuc.berkeley.edu/people/eric_norman](http://www.nuc.berkeley.edu/people/eric_norman)

---

**Nuclear Engineering 24, Section 3**

**A Survey of Nuclear Engineering (1 unit, P/NP)**

**Professor Raluca Scarlat**

**Monday 11:00-12:00, 39 Evans Hall, Class number: 32925**

An introduction to the multitude of sub-disciplines in nuclear engineering, and a survey of the nuclear technologies that are being researched and developed at UC Berkeley. The course will consist of lectures from many of the faculty in the department of nuclear engineering. This is a good opportunity to learn about the nuclear engineering field of study, the possible career paths of a nuclear engineer, and the ongoing research in the Department of Nuclear Engineering.

Raluca Scarlat is an assistant professor at UC Berkeley, in the Department of Nuclear Engineering. Raluca Scarlat’s research focuses on chemistry, electrochemistry and physical chemistry of high-temperature inorganic fluids and their application to energy systems. Her research includes safety analysis, licensing and design of nuclear reactors and engineering ethics, and she has extensive experience in design and safety analysis of fluoride-salt-cooled high-temperature reactors (FHRs) and Molten Salt Reactors (MSRs). Professor Scarlat has a Ph.D. in Nuclear Engineering from UC Berkeley, a certificate in Management of
Technology from the Haas School of Business, and a B.S. in Chemical and Biomolecular Engineering from Cornell University. At Berkeley, she has taught engineering thermodynamics, and engineering ethics and society.

**Nuclear Engineering 24, Section 4**
**Practical Skills Enabling Undergraduate Research in Science and Engineering (1 unit, P/NP)**
**Professor Rebecca Abergel**
**Wednesday 11:00-12:00, 39 Evans Hall, Class number: 33005**

This seminar is designed to provide students with the skills they need to quickly and meaningfully participate in and contribute to Berkeley’s research infrastructure. Students will learn to identify their research interests and approach faculty about research positions. They will be trained in universal research skills needed to be successful.

The course consists of one weekly meeting: a 1 hour lecture/discussion or a laboratory tour. The lectures and accompanying assignments will bring students through the common steps of joining a research group, including contacting current students for background on ongoing projects and attending research group meetings. The laboratory tours will introduce students to the breadth of physical science and engineering research performed at Berkeley, with a slight emphasis on nuclear, radiological and chemical sciences.

**This course is designed for freshmen, sophomores, and incoming transfer students who are interested in joining Berkeley’s research enterprise and want to be well-prepared in tackling the process of finding, joining, and contributing to a research group. Students from all science and engineering majors are welcome.**

Rebecca Abergel joined The Lawrence Berkeley National Lab Chemical Sciences Division in 2009 and the UC Berkeley Nuclear Engineering Department in 2018. Her research program is dedicated to investigating the fundamental coordination chemistry and biochemistry of heavy and f-elements, with therapeutic and environmental applications such as chelation, separation, bioremediation of toxic metals, and design of alpha-immuno therapy agents. She currently serves as the LBNL Heavy Element Chemistry Group Leader, the chair of the LBNL Radioactive Drug Research Committee, and is an associate editor for the International Journal of Radiation Biology and a corresponding member (USA) for Radioprotection. She is the recipient of a WCC Rising Star award from the American Chemical Society (2017), an Early Career award from the U.S. Department of Energy (2014), and was selected as an Innovator under 35 – France by the MIT Technology Review in 2014.

Faculty web site: http://actinide.lbl.gov/gtsc/BioAn/

**Political Economy 24, Section 1**
**Political Economy in Contemporary Perspective (1 unit, P/NP)**
**Senior Lecturer Alan Karras**
**Tuesday 4:00-5:00, 210 Dwinelle Hall, Class number: 21460**

This seminar will require students to engage with current events, international and domestic, through the lens of political economy. Those who are enrolled will be required to read The New York Times and/or The Economist each week, identify issues of political economy that are being discussed, and present them to their peers for discussion. Differing perspectives on the news, as well as the different ways in which political economy theorists would interact with the events, will be discussed. Students should expect vigorous engagement and critical thinking.

Alan Karras is Associate Director of and Senior Lecturer in the Interdisciplinary Social Science Programs. He is the author of Smuggling: Contraband and Corruption in World History, as well as several other books and articles on similar subjects. He is currently the Lead Media Author for the concise edition of a World History textbook, an author of the AP edition of the same book, and is also engaged in researching corruption in the British East India Company. He previously served as the Chair of the AP World History
Development Committee for the College Board (as well as several other committees). He was also a member of the Boards of Editors for Cambridge University Press's Dictionary of World History and the nine-volume Cambridge World History. In addition to smuggling and corruption, his research interests are in eighteenth-century Caribbean history, especially as it relates to more recent global issues in political economy.

Faculty website: http://iastp.berkeley.edu/People-Detail/Alan%20Karras

Portuguese 24, Section 1
Discovering Brazil: An Introduction to Latin America’s Largest Country through Movies, Music, and Literature (1 unit, P/NP)
Professor Candace Slater
Tuesday 1:00-2:00, 210 Dwinelle Hall, Class number: 24127

This course uses movies, music, and a number of memorable stories by some of the most famous Brazilian authors to better understand the nation’s past and present. The goal is to look at both its pressing problems and overwhelming creativity and resilience. As one large chunk of Latin America, Brazil offers both comparisons and contrasts to other countries such as Mexico and neighboring Argentina. However, it is also part of the larger Portuguese-speaking world which includes not just Portugal but also African countries including Angola and Mozambique, as well as outposts in Asia. In addition, since Brazil is the size of the continental U.S., it invites comparisons between how slavery played out in both and still affects continuing cultural and artistic forms. The primary requirement for the course is to attend the classes (attendance is required) and to do the preparation (readings, film viewing, etc.) that will allow students to interact with one another as well as to get a good initial overview of a vast and surprising country. No special preparation. Students with an interest in Latin America are particularly welcome but an existing interest is not required. All readings and class discussions will be in English.

Candace Slater teaches Brazilian literature and culture, as well as courses on the Amazon, in the Department of Spanish and Portuguese. She has a secondary affiliation with the Energy and Resources Group. She is the author of seven books and many articles and has traveled widely throughout Latin America and the Iberian Peninsula.

Faculty website: http://spanish-portuguese.berkeley.edu/our-faculty/

Psychology 24, Section 2
The Cognitive Neuroscience of Identity: Individual, Cultural, and Beyond (1 unit, P/NP)
Professor Sonia Bishop and
Monday 1:00-2:00, 179 Stanley Hall, Class number: 23285

We are able to open this course to 25 students thanks to the Andrew W Mellon Foundation. In this course, we will examine various key aspects of the psychology and cognitive neuroscience of identity, including individuality, emotion, memory, creativity, and the experience of self. We will explore these topics with the aid of selected Cal performances which illustrate, evoke, or challenge aspects of the experience of identity. Students are required to attend at least three of the selected Cal performances. Admission will be free and each enrolled student can bring a friend for free as well. Please don’t sign up if you can’t make the shows!

Cal Performance Dates:
2/9/20: An Evening of Jazz Duos Onstage (held in Zellerbach Hall)
2/22/20: Cirque Eloize; Hotel (held in Zellerbach Hall)
3/12/20: Cal Speaker Series: Laverne Cox (held in Zellerbach Hall) 
4/7/20: Yamamoto: The Drummers of Japan; Passion (held in Zellerbach Hall) 
5/1/20: The Tallis Scholars; The Field of the Cloth of Gold (held at First Congregational Church)

Sonia Bishop (sbishop@berkeley.edu) is an associate professor within the Department of Psychology. Her area of expertise concerns the brain basis of emotional and attentional processing and how this can go wrong in anxiety as well as other conditions. She is also a keen amateur improviser and a member of Pan Theater in Oakland.

**Psychology 24, Section 3**  
The Shattered Mind (1 unit, P/NP)  
Professor Mark D’Esposito  
Monday 12:00-1:00, 2038 VLSB, Class number: 30672

In this seminar, we will read and discuss chapters from a book entitled "The Shattered Mind" by Dr. Howard Gardner. As Dr. Gardner states, "It is my purpose in this book to demonstrate that a host of critical issues in psychology can be illuminated by a thoughtful study of the behavior and testimony of brain-damaged individuals." Such topics will include aphasia, amnesia and the frontal lobe syndrome. The case studies that are presented in the book will be supplemented by patients seen and cared for by Dr. D’Esposito, who is a practicing neurologist. **I would like to limit this to intended psychology, cognitive science or neurobiology majors; however, exceptions would be possible with my approval.**

I am a Professor of Neuroscience and Psychology, Director of the UC Berkeley Brain Imaging Center as well as a practicing neurologist.

Faculty web site: http://despolab.berkeley.edu

**Rhetoric 24, Section I**  
How to Read without the Help of Emojis (1 unit, LG)  
Professor Daniel F. Melia  
Wednesday 10:00-11:00, 7415 Dwinelle Hall, Class number: 22473

It is said that Beethoven's late string quartets, derided by critics at the time of their composition, "taught us how to listen to them." Many written works also "tell us how to read them." In this seminar we will be looking at the openings of many essays, poems, novels and other works to see how they instruct us in reading. There is no reading list, but each week students will be required to discuss and post about short parts of different written works, for example, the famous opening of the first chapter of Moby-Dick, "Call me Ishmael . . ." **I hope that this seminar will appeal to those who want to improve their paranoid reading skills ("how did that author do that to me?")**

Daniel Melia is Professor Emeritus in the Department of Rhetoric, where he has taught for forty-three years.

Faculty web site: http://rhetoric.berkeley.edu/people.php?page_id=1056&p=62

**Spanish 24, Section I**  
#metoo in the Time of Cervantes? Women’s Roles in Dramas of Justice and Mercy (1 unit, P/NP)  
Professor Emilie Bergmann
Thursday 1:00-2:00, 204 Dwinelle Hall, Class number: 32258

The abuse of authority by powerful men against women is a central theme in the classic theater of seventeenth-century Spain. A peasant uprising is inspired by a woman outraged at her assault by a nobleman in Lope de Vega’s Fuenteovejuna. A woman abandoned by her lover guides a prince toward an ethical awakening in Calderon’s La vida es sueno (Life is a Dream). We will read selected chapters of Don Quixote, Part I, in which women successfully defend their autonomy and honor, and Part II, which presents an anti-Machiavellian contrast between Sancho’s merciful wisdom and the gratuitous cruelty of aristocrats. At the end of the seventeenth century, Sor Juana Ines de la Cruz indict the violence of the conquest of Mexico in the introductory loa to El divino Narciso. Texts may be read in Spanish or English translation; discussion in English. **Requirements:** weekly participation; each student will be responsible for formulating questions and leading discussion for one meeting and writing 2 short essays.

**Required Texts (all available on bCourses):**
- Selected episodes (5 chapters) of Don Quixote.
- Pedro Calderón de la Barca, La vida es sueño / Life is a Dream
- Sor Juana Inés de la Cruz, El divino Narciso / The Divine Narcissus

Emilie L. Bergmann, Professor of Spanish, Emerita (Ph.D., Johns Hopkins University). Her research and teaching focus on questions of gender and sexuality, on visual culture in early modern Spanish and Colonial Latin American literature and on twentieth-century women writers in Castilian and Catalan. She is co-editor of ¿Entiendes? Queer Readings, Hispanic Writings (Duke UP, 1995), Approaches to Teaching the Works of Sor Juana Inés de la Cruz (MLA, 2007), and the Routledge Research Guide to the Works of Sor Juana Ines de la Cruz (2017).

**Undergraduate Business Administration 24, Section 1**
**Passion and Purpose: Exploring the Meaning of Meaning (1 unit, P/NP)**
**Distinguished Teaching Fellow Cort Worthington**
**Wednesday 10:00-12:00, C250 Cheit Hall, Class number: 32619**

Class will be held from January 22 through March 4, 2020.

How does one navigate this unexpected journey we call life? What fundamental forces are truly at play as we search for and create meaning for ourselves? And how can we forge a life that allows us to contribute our full potential to the world?

No answers are guaranteed in this 1-credit explorative seminar, but the questions we’ll be asking ourselves are assured to be compelling. We will draw upon readings from a number of provocative thinkers on this subject of purpose and life meaning. We will shine focus on each student’s own life experiences and aspirations related to the question of meaning. We will challenge our individual assumptions and mental models with the goal of expanding each person’s ability to seek and potentially discover greater meaning and contribution.

Along with readings and facilitated discussion, short in-session exercises will add an experiential component to our work together, helping connect the ideas we’re exploring to tangible, actionable growth. **Students interested in the class should add themselves to the waitlist and send the instructor two paragraphs: one introducing themselves and one explaining their interest in the class by January 18, 2020 (to cort@berkeley.edu). Enrollment is limited to 12 students and applications will be accepted on a rolling basis.**

Cort Worthington is a Distinguished Teaching Fellow on faculty at UC Berkeley’s Haas School of Business, where he designs and delivers leadership courses for undergraduates and MBA students. His consulting client list includes Pixar, Yelp, Kaiser, Samsung, the US Army, and the US Olympic Team.
Prior to his position at Berkeley, Cort was co-founder of toy company Primordial, LLC, where he raised capital and served as Director of Operations. Along with multiple stints in Central America as a political activist, Cort spent twelve years as a film producer, directing documentary crews around the world. Additional experiences include fourteen seasons leading elite teams as a forest fire fighter and parachuting U.S. Forest Smokejumper, which piqued his interest in improvisational principles as applied to leading within high-risk, dynamic situations.

Cort’s current intellectual focus explores how existential questions inform a leader’s approach to his or her own personal and professional development. He holds an MA in Communication from Stanford University, an MBA from Columbia University Business School (finance), and an MBA from the University of California, Berkeley (leadership).

Vision Science 24, Section 1
Myths, Mysteries and Discoveries in Medicine (1 unit, P/NP)
Dr. Patsy Harvey
Wednesday 11:00-12:30, 394 Minor Hall, Class number: 10086

This 90-minute seminar will meet for the first nine weeks of the semester, from January 22 through March 18, 2020.

Throughout the centuries, people sought to understand the reasons for diseases, disabilities and death. Intriguing explanations, myths and superstitions were developed in an attempt to describe and prevent their medical maladies. In this course, we will discuss early and current explanations of health problems, with special considerations given to nutrition and various cultures in the US and around the world. We will also discuss recent changes in health care and imagine future roles and discoveries of medicine. Students enrolled in this seminar should be curious about people's beliefs and misconceptions about health and diseases, including our own myths about vision.

Dr. Patsy Harvey received her Doctor of Optometry and Masters in Public Health from UC Berkeley. She currently teaches at the UC Berkeley School of Optometry, including courses on Systemic Diseases, Geriatrics, and the History of Medicine and Optometry. During her international travels and clinical work, she developed a fascination with health beliefs in other countries and times, and enjoys discussing their beliefs and myths with others.
FRESHMAN AND SOPHOMORE SEMINARS

Most of the following courses are limited to 20-25 students. First- and second-year students are given priority for enrollment. Some of these courses fulfill Letters and Science breadth requirements; for details consult A Guide for Students in the College of Letters and Science: Earning Your Degree. If a course is designated as requiring the consent of the instructor, or if you would like additional information, please contact the undergraduate assistant in the department offering the seminars.

African American Studies 39B, Section 1
Welcome to the University -- Look Back, Give Back: Navigating U.C. Berkeley While Analyzing the History of Hiphop and Black Cal Student Life Prior to Proposition 209
(2 units, LG)
Mr. John Quame Patton
Wednesday 4:00-6:00, 3111 Etcheverry Hall, Class number: 31073

This seminar course intends to motivate first/second year and transfer students, assist them in practicing critical thinking skills and prepare students to be able to successfully identify support networks amongst faculty, staff and peers within the university and in the wider Bay Area community. Using Hiphop culture as the content, the course will offer practical approaches to increase students’ confidence, critical thinking and research skills. However, the course goes further, exposing students to their forerunners, alumni who have successfully navigated the campus both before and after the passing of Proposition 209, allowing students to form a deeper understanding of how Proposition 209 impacted "Black life" on campus.

John “Quamé” Patton is currently a Special Projects Program Coordinator with the Centers for Educational Equity and Excellence and an Academic Advisor for the Student Support Services Program at U.C. Berkeley. Additionally, he is a lecturer and co-founder of the Dr. VéVé Clark Institute for Engaged Scholars in African American Studies and co-founder of the Barbershop Talks Mentorship Program. He graduated from Crenshaw High in South Central Los Angel...
which explored how and why the Philippines became the leading exporter of professional nurses to the United States. Her second book, Global Families: A History of Asian International Adoption in America, unearths the little-known historical origins of Asian international adoption in the United States beginning with the post-World War II presence of the U.S. military in Asia.

Faculty web site: http://ethnicstudies.berkeley.edu/people/faculty-profile/catherine-ceniza-choy

History 39C, Section 1
The History of Neoliberalism (4 units, LG)
Professor Christoph Hermann
Monday 2:00-4:00, 3205 Dwinelle Hall, Class number: 33406

Neoliberalism has become a catch-word in social sciences. It is used by scholars from various disciplines and has different meanings. However, usually it is used to indicate some profound change that has taken place since the 1970s. Some even use it to describe the three decades that have followed the postwar period. In this seminar we will approach neoliberalism from a historical perspective, including the history of neoliberal ideas, neoliberal transformations in a number of selected countries, the 2008-09 economic crisis, the neoliberalization of higher education, and the contentious relationship between neoliberalism and democracy. We will end with a look at the future of neoliberalism.

The class will familiarize students with the reading and understanding of academic literature and introduce them to academic writing. Students will formulate, articulate, and defend ideas in academic discussions and learn the specific historical approach to social and economic phenomena, and the importance of history for understanding contemporary issues and debates.

All the course readings are available for download from bCourses. Students will write three 5- to 6-page long essays related to topics that are discussed in class, which should include references to class readings. This seminar may be used to satisfy the Historical Studies or Social and Behavioral Sciences breadth requirement in Letters and Science.

I am a lecturer in History at UC Berkeley, specializing in economic history and the history of economic and social thought. My background is social sciences more broadly and I am particularly interested in the intersection between economy and society.

History 39D, Section 1
“Big History” as astronomy, astrology, and philosophy: from antiquity to the Big Bang (4 units, LG)
Dr. Maria Mavroudi
Wednesday 2:00-4:00, 3205 Dwinelle Hall, Class number: 32932

In 2011, Bill Gates and David Christian launched a project for teaching “Big History” at high schools. In their definition, “Big History seeks to understand the integrated history of the Cosmos, Earth, Life, and Humanity, using the best available empirical evidence and scholarly methods.” The vocabulary, concepts, and environmental fears driving the project are distinctly twenty-first century. However, humanity has sought the exact same goals for longer than two millennia already. The course will sample how ancient Greek philosophy and science were used in order to propose practically and morally relevant “Big History” at different times and places: Graeco-Roman antiquity, the Christian and Muslim Middle Ages, and the modern period. This seminar may be used to satisfy the Historical Studies or Philosophy and Values breadth requirement in Letters and Science.

Maria Mavroudi is a professor in the Departments of History and Classics at the University of California, Berkeley. Her research interests include Byzantine and Islamic science; bilingualism in the Middle Ages; the transmission of the ancient philosophical and scientific tradition between Byzantium and Islam; and Byzantine intellectual history. Her work was recognized with a MacArthur Fellowship in 2004.
History 39G, Section 1  
Civilizing the Vikings (4 units, LG)  
Professor Geoffrey Koziol  
Monday 1:00-4:00, 3104 Dwinelle Hall, Class number: 32633

The Vikings are back! In video games, movies, cosplay, and white neo-nationalist movements. Since we’re in the throes of another Viking craze, we might as well offer a course on their history. After several weeks discussing Viking attacks on England and the Continent, we will turn to Viking mythology, the colonization of the North Atlantic, and feuding. A fair amount of attention will be devoted to recent archaeological excavations. We will do a little work with Norse mythologies, as well as the ways the history of early Scandinavian kings was grafted into those mythologies. We will end with the beginnings of real monarchies in 12th- and 13th-century Scandinavian kingdoms. Readings are both primary and secondary sources. This seminar may be used to satisfy the Historical Studies breadth requirement in Letters and Science.

Professor Koziol specializes in the study of religion, power, and ritual in medieval Europe. He also has broad interests in ethnology. In addition to classes on medieval history, he has also taught courses on The Da Vinci Code, the problems of writing biographies, and ritual.

Faculty web site: http://history.berkeley.edu/faculty/Koziol/

History 39H, Section 1  
Culture and Migration in the Eastern Mediterranean, 1800-2000 (4 units, LG)  
Professor Christine Philiou  
Thursday 2:00-4:00, 3205 Dwinelle Hall, Class number: 33127

The Eastern Mediterranean, like the larger Mediterranean world of which it is a part, has been a fascinating laboratory of unity and diversity—geographic, economic, social, political, and cultural—since Roman antiquity. In this course we look at the unity and diversity of culture in the region as related to population movements over the last two centuries. After considering historical and anthropological conceptions of culture, we consider the political developments, economic conditions, and violent conflicts that precipitated migration, both within the region and abroad, to the Americas, for example. What is the experience of migration and how is it different across eras, regions, and confessional communities? How is that experience remembered or forgotten afterward? In what ways is culture disrupted, reconstructed, adapted, and effaced in the course of migration and resettlement? In what ways is migration an integral part of modernity in the nineteenth- and twentieth-century Eastern Mediterranean, for Christians, Muslims, and Jews alike? What are the similarities and differences between the historical cases of migration we will be reading about and the contemporary migrations in the region in the past 10 years?

This course will prepare students to continue study of the constituent areas of the Eastern Mediterranean (the Balkans; Middle East; North Africa) as well as to take courses in migration in other regions and eras. Students will gain a broad, historical understanding of migration, its many causes and effects, and with the ways migration is part of the fabric of history and society in the modern world. This seminar may be used to satisfy the Historical Studies or Social and Behavioral Sciences breadth requirement in Letters and Science.

Christine Philiou specializes in the political and social history of the Ottoman Empire and modern Turkey and Greece as parts of the post-Ottoman world. Her book, Biography of an Empire: Governing Ottomans in an Age of Revolution (University of California Press, 2011), examines the changes in Ottoman governance leading up to the Tanzimat reforms of the mid-nineteenth century. It does so using the vantage point of Phanariots, an Orthodox Christian elite that was intimately involved in the day-to-day work of governance even though structurally excluded from the Ottoman state. Her current work turns to the political, personal and intellectual/artistic itinerary of the Turkish writer Refik Halit Karay (1888-
Her interests and other publications have had to do with comparative empires across Eurasia, various levels of transitions from an “Ottoman” to a “post-Ottoman” world in the nineteenth and twentieth centuries, and political and cultural interfaces in the eastern Mediterranean, Middle East, and Balkans in the early modern and modern eras. This fall she is teaching a seminar on the post-Ottoman World, and next semester a graduate seminar on comparative empires, “The Ottoman Empire and its Rivals.”

**History 39I, Section 1**  
**Child Labor in Africa: A Historical Perspective (4 units, LG)**  
**Professor Tabitha Kanogo**  
**Thursday 10:00-12:00, 2303 Dwinelle Hall, Class number: 33128**

A recent study indicates that 48 million African children, or one third of all children under 14 years of age, are “economically active”. The range of children’s work extends beyond the purely economic and includes military service and sex slavery. Emerging within specific socio-cultural, economic, religious and political contexts riddled with extreme poverty, and a hostile global environment, child labor in Africa is a complex phenomenon that defies simple analysis or solution. This seminar seeks to explore historical and emergent trends in child labor in rural and urban Africa. Topics to be explored include: the complex definitions of childhood and child labor; traditional constructions and organization of children’s work including apprenticeships and production for household consumption; gender and child labor; colonialism, globalization and redefinition of children’s work; child abductions, child soldiers; agricultural work and sex slavery among others. The seminar will also explore the world of Talibes who are religious wards whose begging/agricultural lives complicate conventional notions of children’s work. As well as secondary and primary texts, the course will include documentaries on African children. This seminar may be used to satisfy the Historical Studies or Social and Behavioral Sciences breadth requirement in Letters and Science.

I am a professor of African History at the Department of History. I am a social historian whose research interests include gender, women, missions, labor and social movements, children and youth, and biographies.

Faculty web site: http://history.berkeley.edu/people/tabitha-kanogo

**History 39U, Section 1**  
**Shanghai: Between China and the World (4 units, LG)**  
**Visiting Lecturer J. Brooks Jessup**  
**Monday 12:00-2:00, 3205 Dwinelle Hall, Class number: 32784**

This seminar explores the history of Shanghai as a place of interaction between China and the world during the nineteenth and twentieth centuries. Shanghai’s opening to foreign trade and residence after 1842 sparked its rapid growth into China’s largest metropolis, and one of the great cities of the world, less than a century later. We will focus on how the accelerating flow of people, goods, and ideas through Shanghai from across the world and throughout China dramatically transformed the material and mental landscape of the metropolis, which in turn shaped the lives and identities of the many different groups of residents who crowded into its expanding borders. This seminar may be used to satisfy the Historical Studies breadth requirement in Letters and Science.

J. Brooks Jessup received his PhD from UC Berkeley. His book project examines the rise of Shanghai as a national center of Buddhist activism in twentieth-century China. Research interests include urban history, public religion, Buddhist modernism, human-animal relations, and environmental history.

**Legal Studies 39D, Section 1**  
**Current Political and Moral Conflicts and the U.S. Constitution (2 units, LG)**
The debate about politics and morals has moved steadily into the realm of the Supreme Court, but people differ on what exactly the role of the Court should be. Some have strongly argued that the Court's interpretation and application of the Constitution have adversely affected our fundamental rights and usurped powers from other branches of government. This position claims the Court has created an "Imperial Judiciary," a supreme authority, not a supreme court. Others argue as strongly that the Court has acted properly to find and protect evolving fundamental freedoms and individual rights in the face of unprecedented political and governmental efforts to limit them. This position claims the Court has, in fact, fulfilled the role envisioned for the Court by the Constitution. This seminar will follow the Socratic method in examining moral and political issues that have a constitutional basis and the Court's participation in the debate on topics such as transgender and gay rights (including gay marriage); “sincerely held religious beliefs” as a defense to compliance with anti-discrimination laws; abortion; privacy; limitations on speech including “hate” speech, college speech codes, trigger warnings and micro-aggressions; and euthanasia. We will read Supreme Court cases, as well as political and legal commentary from across the political spectrum. The prime focus of the seminar is to encourage students to develop their critical thinking skills. Accordingly, students are expected to develop, support and defend their own views and opinions regarding the relevant topics.

Alan J. Pomerantz, Esq., is a practicing lawyer and Senior Counsel at Pillsbury Winthrop Shaw Pittman, a major international law firm. A graduate of the NYU School of Law, he also studied under the Fulbright Program in Chile and received an advanced legal degree from the University of Amsterdam (Netherlands). He has lectured and taught widely, including at the NYU School of Law, NYU College of Arts and Science, the University of Amsterdam, Columbia Graduate School, and the University of Concepcion (Chile). He has published numerous articles and contributed to several treatises on legal topics. Mr. Pomerantz is recognized by several peer publications as one of the world’s leading lawyers. He is also the recipient of the 2015 Fulbright Commission Global Citizens Award, and the 2016 Global Award for his legal work. Mr. Pomerantz has participated in important and controversial matters affecting individual rights, including the right of public artistic expression, the right of privacy for acts of consenting adults, and numerous free speech cases.

Music 39M, Section 1
Sound and Resistance in South African Music (4 units, LG)

Friday 1:00-4:00, 242 Morrison Hall, Class number: 32567

This seminar will be an introduction to political questions in selected musics of South Africa. We will watch documentaries, listen to stories told in music, and study academic writings about revolutionary song, kwai, mbqanga, amakwaya, maskanda, and other identified forms. We will be particularly interested in the mediation and representation of the power of musical expression under and after apartheid. It is often assumed that sound and sounding expression naturally act in ways that counter the status quo, even though, historically in South Africa, forms of sounding have also been responsible for oppressive projects of racialization and stereotyping. We will ask this question: does sound always resist?

Slavic Languages and Literatures 39, Section 1
Images of Eastern Europe (2 units, P/NP)
Professor David Frick
Wednesday 12:00-2:00, 6307 Dwinelle Hall, Class number: 30640

We will examine images of an “other,” not quite European Europe in a variety of literary and visual representations. Two main genres will be at the center of our investigation: works of imaginative literature in which inhabitants of Eastern Europe seek to establish their own identities, and works of
Western European and American literature that put Eastern Europe to their own thematic uses.

We will range from the Gothic clichés of Dracula, through more subtle attempts of Westerners and exiles to explain to Western readers what it means to cross the boundary between Eastern and Western Europe, to the versions of self-definition found in Eastern European novels and film, and finally to the ways in which Eastern Europe has become a part of the imaginative geography of Western literature and film. The ultimate goal of the course will be twofold: to understand something about the countries of Eastern Europe and about the ways in which Eastern Europe has functioned in our imaginations.

Primary focus will be on the twentieth century. Among the authors: Bram Stoker, Thomas Mann, Italo Calvino, John le Carré, Günter Grass, Milan Kundera, Ludvík Vaculík, Isaac Bashevis Singer, Gregor von Rezzori, Witold Gombrowicz.

Course requirements: class participation, two short papers (3–5 pp.), and an in-class essay examination.

Professor Frick has spent many months since 1980 conducting research in Poland, Lithuania, Russia, and Germany. His main area of interest is in the cultural history of early modern Poland, Lithuania, Belarus, and Ukraine, and he has devoted special attention to conflicts between social authorities and personal identities.

Faculty web site: http://slavic.berkeley.edu/faculty.html#frick

South and Southeast Asian Studies 39, Section 1
Southeast Asian Performing Arts (2 units, LG)
Dr. Maria Josephine Barrios-Leblanc, Ms. Cynthia Aban and Ms. Ninik Lunde
Tuesday 9:00-11:00, 45 Evans Hall, Class number: 17143

The course focuses on Southeast Asian performance—the music of Vietnam, Indonesian dances, and Philippine theater and music. Discussions shall be guided by the following questions: How have geography, religion, social structures, customs, and beliefs shaped indigenous performing art forms? How are performing traditions revitalized in contemporary times? How have experiences of colonialism and social movements informed the work of performing artists? How can we read/view these works today? We hope to attract students interested in one, both, or all of the following: the Southeast Asian region, the performing arts (music, dance, theater), and history.

Maria Barrios-Leblanc has a Ph.D. in Filipino (Philippine Literature) from the University of the Philippines (UP). Before coming to UC Berkeley, she served as Associate Professor and Associate Dean of the UP College of Arts and Letters. She has written/editored more than a dozen books including language textbooks, poetry collections and research on Philippine drama and literature.

Faculty web site: http://sseas.berkeley.edu/people/faculty/joi-barrios-leblanc

Cynthia Aban is a singer and kulintang player with the multi-awarded performing band Grupong Pendong which utilizes indigenous instruments in creating contemporary music. Before coming to UC Berkeley, she was a Ph.D. student at the University of the Philippines studying Filipino psychology.

Faculty web site: http://sseas.berkeley.edu/people/faculty/chat-aban

Ninik Lunde has a Master’s degree in Linguistics from the University of Wisconsin. She taught Indonesian language at UW Madison for five years and has been teaching beginning and intermediate Indonesian since 1993 at UC Berkeley. She has created audio-visual materials for her classes. Her academic interests include linguistics and comparative literature. In addition to language teaching, she also has been performing Javanese, Balinese and Sumatranese dances on campus, in the Bay Area and at dance festivals.
South and Southeast Asian Studies 39, Section 2
Island Imaginations: Exploring the Short Story in the Philippines, Indonesia, Malaysia and Singapore (2 units, LG)
Lecturer Karen Llagas and Professor Sylvia Tiwon
Friday 10:00-12:00, 50 Barrows Hall, Class number: 17144

The Philippines, Indonesia, Malaysia and Singapore are multicultural island nations in Southeast Asia with strong story-telling traditions. We will read and discuss the short story as a modern narrative form through which writers have explored questions of nation and identity in colonial and postcolonial times. The seminar introduces students to some of the major contemporary themes including romance, resistance, gender, the challenges of modernization and the new global order.

Karen Llagas lectures in UC Berkeley's Beginner and Intermediate Filipino classes; she teaches Tagalog privately and in group classes in the San Francisco Bay Area and online.

Sylvia Tiwon is an Associate Professor in the Department of South and Southeast Asian Studies. She teaches literature, gender, and oral and cultural studies of Southeast Asia with a focus on Indonesia. Her areas of interest include national and pre-national literatures, oral discourse and mythologies, as well as socio-cultural formations at the national and sub-national levels.

Faculty web site: http://sseas.berkeley.edu/people/faculty/ninik-lunde

South and Southeast Asian Studies 39, Section 3
Contentious Politics and Southeast Asian Literature (Focus on Vietnam and the Philippines) (2 units, LG)
Dr. Maria Josephine Barrios-Leblanc and Lecturer Hanh Tran
Friday 2:00-4:00, 211 Dwinelle Hall, Class number: 17145

Do you like debates? How do you think people can debate about politics through literature? This course looks into the dynamics of literature and politics in Vietnam and the Philippines by asking the following questions: How have writers articulated their beliefs on colonialism, human rights, gender and class through poetry and fiction? When does ideology inform literary techniques? How can we study specific genres such as prison literature, testimonial literature, guerrilla literature, and underground newspapers and literary magazines?

Maria Barrios-Leblanc has a Ph.D. in Filipino (Philippine Literature) from the University of the Philippines (UP). Before coming to UC Berkeley, she served as Associate Professor and Associate Dean of the UP College of Arts and Letters. She has written/edited more than a dozen books including language textbooks, poetry collections and research on Philippine drama and literature.

Faculty web site: http://sseas.berkeley.edu/people/faculty/joi-barrios-leblanc

Hanh Tran holds an M.A. degree in South and Southeast Asian Studies with a concentration in Political Studies and Literature. He has been a lecturer of Vietnamese language and literature at UC Berkeley since 2006. He has also guest lectured and co-taught several seminars on Southeast Asian Literature and Movies. His current research interest is in Southeast Asian Material Culture and History of Art. He also sponsored several DeCal courses on Vietnamese culture through films.

Faculty web site: http://sseas.berkeley.edu/people/faculty/joi-barrios-leblanc

South and Southeast Asian Studies 39, Section 4
India Through the Lens of Fiction - Selected Chapters from Hindi Literature
(2 units, P/NP)
Lecturer Nora Melnikova
Monday 4:00-6:00, 35 Evans Hall, Class number: 33328

Hindi literature covers a vast geographical, temporal and social space. In this seminar, we will focus on the most popular and significant authors and works of Hindi prose and poetry.

Our readings will start with the works of prominent medieval mystical poets Kabir, Surdas and Mirabai. However, the main emphasis of the course will be on twentieth-century fiction, especially the pre- and post-independence novels and short stories. The classes will be centered around particular topics—social issues, historical events, or philosophical and religious themes. We will read the most representative works of twentieth-century Hindi writers, such as Munshi Premchand, Jainendra Kumar, Manto, Nirmal Verma, Mridula Garg, Mohan Rakesh, Mannu Bhandari, etc., and discuss them in the class.

No prior knowledge of Hindi is required. All the literary works will be available in both Hindi and English.

Course requirements: class participation, weekly readings, and a final essay (10 pages).

Nora Melnikova teaches Hindi language and literature readings at the Department of South and Southeast Asian Studies. Before coming to Berkeley, she lived and taught at universities in Prague and Delhi. Her main areas of interest are Hindi literature, contemporary India and religious studies.

Vision Science 39, Section 1
The Relation of Science and Religion (1.5 units, P/NP)
Professor Stanley Klein and Dr. Christopher Cochran
Tuesday 2:00-3:30, 394 Minor Hall, Class number: 32797

This freshman/sophomore seminar encourages students to reflect on the compatibilities and tensions between science and religion, with a focus on bridge building and collaborative thinking. The course shall focus on two very different proposals for how to produce happy dialogue between science and religion. One proposition is that science and religion can be integrated into a holistic worldview that borrows insights from both realms. We will study how Albert Einstein and the Dalai Lama take this position. A different proposal is that science and religion are independent realms of life that shall coexist and benefit from one another but are better off not interfering with each other. We will study why physicist Richard Feynman and biologist Stephen Jay Gould took the position that science and religion are separate and independent realms of human life. We will also have open discussions about some of the deep puzzles of life. Speakers such as theologians, scientists, and social scientists will be invited. There will be short readings on most weeks. One three page paper will be assigned.

Stanley Klein is a physicist doing research on how our brains do vision. He is also active with various groups devoted to improving communications such as between science and religion. Relevant to this seminar is his commitment to finding approaches for our society to function better by learning how to listen to views different from our own. Prof. Klein is vice chair of the Academic Senate committee “Demonstrations and Student Action.”

Christopher Cochran recently (2017) received his Ph.D. in Cultural Anthropology at University of California Santa Cruz. He is currently working on a project comparing Freud’s work on the delirium of Judge Schreber with Carl Jung’s work on the imagination of physicist Wolfgang Pauli. The psychotic Schreber’s and the Nobel Prize winning Pauli’s imaginative flights into a world where mind and matter coalesce pose questions about the relationship between paranoia and scientific reason that are little understood even decades later.
**SOPHOMORE SEMINARS**

The following courses are limited to 15 students. Each is offered for one or two units of credit. Second-year students will be given priority for enrollment. Courses designated P/NP may be taken pass/no pass only; courses designated LG may be taken for a letter grade or on a pass/no pass basis. If a course is designated as requiring the consent of the instructor, or if you would like additional course information, contact the undergraduate assistant in the department offering the seminar.

**Astronomy 84, Section 1**  
**The Nature of Science and Time (1 unit, P/NP)**  
**Professor Alex Filippenko**  
**Friday 10:00-12:00, 131 Campbell Hall, Class number: 23577**

We will consider the nature of space and time, especially in the context of our understanding of the overall properties of the Universe. The major topics from the following best-selling book will be discussed: "A Brief History of Time," by Stephen Hawking. Our journey will take us through the basics of the two pillars of modern physics: quantum mechanics and Einstein's general theory of relativity. We will also explore string theory, which attempts to unify these two great fields by postulating the existence of many hidden dimensions in which packages of energy vibrate. **Though the seminar is intended for non-science majors, the discussion will be held at a fairly high level; thus, students must have already successfully completed (with a grade of "B-" or higher) at least one of the following courses: Astronomy C10, L&S C70U, Astronomy 7A, or Astronomy 7B. If you want to be considered for enrollment in this class, please complete a short survey at https://forms.gle/Bpdng8HWfruj66WGA. Thank you.**

Alex Filippenko joined the UC Berkeley faculty in 1986. An observational astronomer who makes frequent use of the Hubble Space Telescope, the Keck 10-meter telescopes, and Lick Observatory, he engages in research on exploding stars, active galaxies, black holes, gamma-ray bursts, and observational cosmology. Having coauthored nearly 1000 articles on his research, Filippenko has received numerous awards and is one of the world's most highly cited astronomers; he is also an elected member of both the National Academy of Sciences and the American Academy of Arts & Sciences. He was a member of both groups that showed that the expansion of the Universe is accelerating with time. This discovery was honored with the 2011 Nobel Prize in Physics to the teams' leaders and the 2015 Breakthrough Prize in Fundamental Physics to all team members. A dedicated and enthusiastic teacher, he has won the campus Distinguished Teaching Award and has been voted "Best Professor" a record 9 times in the Daily Cal's annual "Best of Berkeley" survey. He was also named the 2006 CASE/Carnegie National Professor of the Year among doctoral and research institutions. Besides being an avid tennis player, skier, and hiker, he enjoys world travel and loves to experience total solar eclipses throughout the globe (17, so far).

Faculty web site: http://astro.berkeley.edu/people/faculty/filippenko.html

**Economics 84, Section 1**  
**Buddhist Economics (2 units, P/NP)**  
**Professor Clair Brown**  
**Monday 3:00-5:00, 2 Evans Hall, Class number: 19469**

In Buddhist Economics, we will explore how the assumptions of interdependence, impermanence, and altruism are the foundation for an economy that cares for all people and the planet. This "Buddhist economy" is compared to a "Free Market economy." Some questions that we address are these: What creates happiness? What is an equitable distribution of income? How is our own well-being related to the well-being of other people and the planet? How should we measure the performance of economic growth? **Many students in my Econ 1 class at UC Berkeley were frustrated with the assumption that “more is better”---having more income and what it buys is what makes people better off. They also were shocked that GDP growth does not include**
the income distribution across the population. In the Free Market model, the rich benefit just as much as the poor from another dollar of income, and income per capita compares quality of life across countries. In the competitive Free Market economic model, it makes sense to go shopping if you are feeling pain, because buying things makes you feel better. Yet we know from experience and from neuroscience that consuming more does not relieve suffering. What if we lived in a society that did not put consumption at its center? What if we follow instead the Buddhist worldview that people are interdependent with each other and the planet, and are driven by compassion rather than desire? Most of the required reading is from my book, Buddhist Economics: An Enlightened Approach to the Dismal Science, Bloomsbury Press, 2017. In this seminar, students will work in teams to write op-eds or blogs on specific questions, and publish them online (Medium, Axios, and others). Join in the exploration!

Clair Brown has published research on many aspects of the labor market, including high-tech workers, labor market institutions, firm employment systems and performance, the standard of living, wage determination, and unemployment. Clair taught Econ 1 for many years, and practices Tibetan Buddhism. Her books include American Standards of Living, 1919-1988 (Blackwell, 1994), Work and Pay in the United States and Japan (Oxford University Press, 1997), Economic Turbulence (University of Chicago Press, 2006), and Chips and Change: How Crisis Reshapes the Semiconductor Industry (MIT Press, 2009, 2011). Clair with her grad student Eli a holistic measurement for economic performance for California. She is also is a faculty leader in the Development Engineering program for graduate students.

Faculty web site: http://www.irle.berkeley.edu/faculty/brown/Brown.CV.pdf

**Electrical Engineering 84, Section 1**  
**Engineering for the Brain: Mind Meets Matter (1 unit, P/NP)**  
**Professor Chunlei Liu**  
**Tuesday and Thursday 1:00-2:00, 299 Cory Hall, Class number: 30560**

Meets the first half of the semester, beginning January 21, 2020.

Advances of neural engineering, both physical and biological, are rapidly changing the way we see and interact with our brain. Modern imaging allows us to observe our brain in action noninvasively; brain stimulation allows us to modulate neuronal activities and behaviors; genetic editing allows us to modify the basic building blocks of the brain. While these technologies have brought enormous medical benefits and are improving our knowledge of the inner workings of the brain, they also raise many profound questions. The course will introduce modern neural engineering methods in a non-technical way. We will discuss their medical and scientific impact and their legal, ethical and societal implications. **The course is open to all majors. There will be no equations to be solved. Only a curious mind is required.**

Dr. Chunlei Liu is an Associate Professor in the Department of Electrical Engineering and Computer Sciences, and the Helen Wills Neuroscience Institute. He received his PhD from Stanford University. Before joining UC Berkeley, he was an Associate Professor of Radiology and Biomedical Engineering at Duke University. He currently researches in brain imaging and modulation.

**English 84, Section 1**  
**Film Noir and Neo-Noir (2 units, P/NP)**  
**Professor Julia Bader**  
**Tuesday 9:00-12:00, 300 Wheeler Hall, Class number: 32610**

A course analyzing classic American crime films and recent examples of the genre.
Julia Bader is a Professor Emerita in the English Department and specializes in the modern period, both British and American, with an emphasis on fiction, film, and feminism.

Faculty web site: http://english.berkeley.edu/profiles/11

**Gender and Women’s Studies 84, Section 1**
Thinking about Sexual Violence on Campus (2 units, P/NP)
Professor Leslie Salzinger
Monday and Wednesday 12:00-2:00, 50 Barrows Hall, Class number: 31019

How are we, as a community, to understand and respond to the problem(s) of sexual violence on campus? GWS is bringing in a group of scholars from the field to discuss empirical findings, reframe the terms of discussion, and propose restorative justice responses. Seminar participants will attend the five events and meet to read, write, and discuss in tandem with the speaker series.

Note: We will meet once a week, generally on Mondays but sometimes on Wednesdays. A schedule will be provided at the first class; to enroll, students must be available for meeting either day of the week.

Leslie Salzinger is Associate Professor and Vice Chair of Research of Gender and Women's Studies at UC Berkeley. She got her PhD in Sociology at UC Berkeley and previously taught in the sociology departments at the University of Chicago and and Boston College. She writes and teaches on gender, capitalism, nationality, and race and their ongoing co-formations. Her empirical research is ethnographic, mostly focused on Latin America, especially Mexico. Her primary research questions address the cultural constitution of economic processes and the creation of subjects within political economies. Her award-winning first book, Genders in Production: Making Workers in Mexico’s Global Factories (http://www.ucpress.edu/books/pages/9001.html), analyzed the gendered dimensions of transnational production. Her current work in progress, Model Markets: Peso Dollar Exchange as a Site of Neoliberal Incorporation, analyzes peso/dollar exchange markets as crucial gendered and raced sites for Mexico's shift from “developing nation” to “emerging market.”

Faculty web site: http://womensstudies.berkeley.edu/about/department-faculty/leslie-salzinger/

**History 84, Section 1**
Algorithmic life: the social impact of automation (1 unit, P/NP)
Professor Massimo Mazzotti
Monday 5:00-6:00, 470 Stephens Hall, Class number: 24313

Our life is increasingly shaped by digital infrastructures and automated processes. What are the broader implications of this phenomenon, both at the personal and the collective level? What is driving this apparently inescapable technological trajectory?

Massimo Mazzotti is a professor in the Department of History and the Director of the Center for Science, Technology, Medicine, and Society. His research focuses on the social and political dimension of science and technology.

Faculty web site: https://history.berkeley.edu/massimo-mazzotti

**Integrative Biology 84, Section 1**
Natural History of Berkeley (1 unit, P/NP)
Lecturer Alan Shabel
Thursday 2:00-3:00, 2063 VLSB, Class number: 23277
California is a natural history phenomenon, with a complex geology, a diversity of ecosystems, and a rich flora and fauna. In this seminar, you will be introduced to the natural history of Berkeley through a study of the common plants and animals of the wildland-urban interface. We will combine a series of local field trips with a study of museum specimens and short lectures. There will be no exams or homework assignments. In Spring 2019 we will give special attention to the role of fire in East Bay ecosystems. The course is open to freshmen and sophomores.

Professor Alan Shabel is a specialist on mammals with a primary focus on African otters, but his interests range across ecological levels of organization, and he is fascinated by the natural history of California and Berkeley.

**Integrative Biology 84, Section 2**  
**Reimagining Biology in Light of the Microbiome (1 unit, P/NP)**  
**Professor Britt Koskella**  
**Wednesday 4:00-5:00, 5053 Valley Life Sciences Building, Class number: 32715**

We are at an exciting moment in the biological sciences. Every field, from ecology and evolution to molecular biology to medicine, is being reexamined in light of new evidence that the microbiome (the vast array of microbes inhabiting humans and other species) influences how the host develops, what the host eats and metabolizes, how the host acts, and the host’s general health. In short, every aspect of biology is fair game for reconsideration through the lens of the microbiome; and this is especially true of the human microbiome given its direct relevance to medicine and human health.

In this course will examine the new, most exciting data on how the microbiome shapes its host phenotype. We will take a broad view of this idea, covering many systems (including humans, other vertebrates, invertebrates, and plants) and many different microbiome-mediated traits (including disease, behavior, growth, and species interactions). By reading both popular science articles and the primary literature, we will work together to identify the big questions that still need to be addressed and discuss how a research team could test these questions. Who knows, perhaps we will come up with the next great microbiome experiment!

Britt Koskella is an assistant professor in Integrative Biology, whose work focuses on interactions between bacteria and the viruses that infect them (bacteriophages). She seeks to understand how coevolution between bacteria and phage might influence the health of eukaryotic hosts, such as agriculturally important plant species. She is passionate about her research and strongly believes that a good understanding of evolution and ecology is critical to progress in the medical sciences. Koskella also strongly believes that scientific progress can be made only by embracing diverse viewpoints, backgrounds, and training.

Faculty web site: [http://brittkoskella.wordpress.com/](http://brittkoskella.wordpress.com/)

**Public Health 84, Section 1**  
**The Environment in Post Apocalyptic Fiction**  
**1 unit, P/NP**  
**Professor Kirk Smith**  
**Thursday 5:00-7:00, 106 Mulford Hall, Class number: 10766**

This seminar will meet every other week for two hours beginning the first week of the semester (January 23, 2020). The schedule will be announced in the first class meeting.

Environmental disasters, human caused and otherwise, have been featured in many novels and other media since the dawn of the industrial era. In this seminar, we will focus on post-apocalyptic literature with three core readings and one elective. First, we will read the non-fictional assessment *The World*
Without Us (Alan Weisman, 2007), which lays a scientific foundation for how the natural world would change without pressure from humanity. Then we will read the short novel Scarlet Plague, by Jack London (1912), which takes place in the Bay Area and describes the world after plague kills most of the human race in 2013, and finally Earth Abides (1949), a novel about Berkeley in a post-apocalyptic world by George Stewart, former UCB Professor. Selected other readings may also be used. Each student will read a book of his or her choosing from a list provided of historical and contemporary novels dealing with post-apocalyptic worlds. (The course will focus on "realistic" post-apocalyptic fiction, i.e., no vampires, aliens, or zombies.) Each student will be expected to give an oral report on his or her book and participate in discussions on the core books. **Enrollment is limited to fifteen sophomores.**

Dr. Kirk R. Smith is Professor of Global Environmental Health in the School of Public Health. His research focuses on climate and health impacts of air pollution in developing countries and he was previously founder and head of the Energy Program of the East-West Center in Honolulu. He currently is conducting field research in Mexico, Guatemala, Mongolia, China, Nepal, India, and Indonesia. He serves on a number of national and international scientific advisory committees including being Convening Lead Author for four major international assessments underway at present: the Global Energy Assessment, WHO Indoor Air Quality Guidelines, the Global Burden of Disease Comparative Risk Assessment, and the Intergovernmental Panel on Climate Change (IPCC). He holds visiting professorships in India and China; bachelors, masters, and doctoral degrees from UC Berkeley; and is a member of the US National Academy of Sciences. In 2007, he shared the Nobel Peace Prize with many other scientists for his role in the IPCC assessments and, in 2009, he received the Heinz Award in Environment and, in 2012, was awarded the Tyler Prize for Environmental Achievement.

Faculty web site: http://ehs.sph.berkeley.edu/krsmith/

**Public Health 84, Section 2**
**Promoting Mental Health and Preventing Psychological Disorders (aka "Mental Health Meets Public Health") (2 units, P/NP)**
**Professor Emily Ozer**
**Wednesday 2:00-4:00, 214 Haviland Hall, Class number: 32665**

This interactive seminar will use scientific readings, online resources, and discussions to build an understanding of the complex (and often interactive) individual and environmental conditions that increase the risk of mental health problems across the lifespan. The goal is for students to analyze and articulate risk and protective factors for the development of major psychological disorders at different levels of analysis (e.g. intra-individual, family, school, community) and how this evidence informs the development of interventions including policies to promote mental health. Participants may also have the opportunity to learn about and contribute to the framing of a new UC-Berkeley and UCLA initiative to reduce the stigma of mental health disorders among youth. **Please note that while our readings and discussions value the expertise of lived experiences regarding mental health issues among friends, family, and self, this academic space will not provide a therapeutic space for support or processing of mental health issues.**

Professor Emily J. Ozer is a clinical and community psychologist and Professor at the UC-Berkeley School of Public Health whose multi-method research focuses on the role of school climate in adolescent development and mental health; psychological resilience; school-based interventions; and participatory action research (YPAR), an equity-focused approach in which youth are trained to generate systematic research evidence to address problems they want to improve in their schools and communities. Key questions guiding her research are: What features of social settings promote healthier development in the face of violence and other risks? How do we best develop, test, and scale collaborative and participatory approaches to promote positive youth development? She co-directs the Innovations for Youth (I4Y) Center and is the co-developer of the YPAR Hub. She is actively working to develop a sustained research-practice partnership with San Francisco Unified School district to promote student well being and integrate student-led research in school improvement and equity initiatives.
Vision Science 84, Section 1
Vision Research Seen Through Myopia (Near-sightedness) (1 unit, P/NP)
Professor Christine Wildsoet
Thursday 4:00-6:00, 394 Minor Hall, Class number: 10088

This seminar will meet for approximately 2 hours every other week starting on January 23, 2020.

As an introduction to vision research, this seminar will combine reading of recent review papers with hands-on research through mini-projects. Using myopia (near-sightedness) as a topical research example, we will explore together the field through recent review papers—what is known about the condition and the research approaches used to discover that information. Based on this literature, we will formulate research questions around which self- and small-group studies will be designed and executed. Research tools encountered will include questionnaires and instruments used to obtain objective measures of eye dimensions, refractive errors, vision, and visual experience. We will also consider the applications and relative merits of animal models and in vitro cell and tissue studies in myopia research. This seminar is likely of interest to those who suffer from myopia and want to know more about their condition, those who are interested in Optometry or Ophthalmology as potential professions, and those who are just curious about eyes and vision and how one goes about investigating causes and mechanisms underlying eye diseases, of which myopia is an example.

Students interested in research or who find themselves asking "why" a lot should enjoy this seminar. Consider this seminar if graduate research, e.g. a PhD, is among your career path possibilities. The goal of this seminar is to open your eyes to the broad range of possibilities that fall under the umbrella of vision research. If you are also myopic (nearsighted), you may also learn a lot about your own eyes.

Professor Wildsoet is on the faculty of the School of Optometry, where she is involved in pharmacology teaching and coordinating two summer research programs for Optometry students. She is also a member of the Vision Science group. Her research is multidisciplinary as is her research group, which includes basic scientists and clinicians, both local and international. The focus of research in her lab is myopia (nearsightedness), specifically the mechanisms underlying the development of myopia and its clinical management. The overriding goals of this research is understand the environmental factors driving the current myopia epidemic and the development of novel and improved treatments for controlling myopia. Under optimal conditions, young eyes adjust their eye growth to correct neonatal focusing errors. Understanding how this growth regulatory process is derailed in myopia can provide the keys to new treatments. Over the course of her research career, Professor Wildsoet has had the opportunity to work with a range of animals and birds to address other questions related to eye design as well.

Faculty web site: http://wildsoetlab.berkeley.edu

Vision Science 84, Section 2
Current Topics in US Health Care (1 unit, P/NP)
Professors Kenneth Polse and Nancy McNamara
Wednesday 12:30-2:30, 490F Minor Hall, Class number: 33417

Class will meet on Wednesdays from February 5 through March 18, 2020.

The seminar will begin by examining health care prior to Obamacare, outlining many of the serious problems that were widespread prior to the ACA. Following this review, the class will examine the strengths and weaknesses of Obamacare, and the changes that are needed to improve and sustain the ACA. We will then study health care in other developed countries to learn how other wealthy nations are able to provide universal health coverage at considerably less cost that the US. The class will then
look at proposals to “fix” US health care such as “Medicare for All,” “Public Option,” and “private” (e.g., no government) health insurance for all Americans.

Problems associated with affordability, accessibility and quality of health care in the US began to escalate in the late 1980s. Over the past twenty-five years, both Republican and Democratic administrations have attempted unsuccessfully to address these problems. In 2008, President Obama was elected on a mandate to change the health care system in a way that would provide affordable and accessible care to all Americans. After considerable debate, controversy, and compromise, the Patient Protection and Affordable Health Care Act of 2010 (ACA) was signed into law by President Obama on March 23, 2010. The ACA (often referred to as Obamacare) was the most significant health care legislation passed since the Medicare Act of 1964. Since its inception, Republicans have attempted to repeal the law over 50 times. Its constitutionality has been challenged twice and upheld by the US Supreme Court. Today, the majority of US citizens support the continuation of Obamacare, however, the debate and fight between Democrats and Republicans about the ACA continues.

In response to Congress’s inability to repeal and replace Obamacare, President Trump was able to use executive actions to make significant changes that have weakened the ACA. Because of changes in the law and Presidents Trump’s executive actions, the future of the US health care system is unclear. Uncertainty about the ability for Americans to get affordable, accessible and quality health care has become a major focus in the upcoming election with much attention given to the plans that Presidential candidates present for solving the serious issues facing the future of our health care system.

VS 84 is structured so that students have time to both make presentations and participate in discussion. The seminar is divided into modules which cover the topics listed above. Students will use the bCourses (VS84 Spring 2020) website to obtain information for each seminar session. For any given module, the class may review an article, news story, media presentation, or editorial that will serve as the platform for class discussion/debate. Students will be divided into groups and asked to prepare a short presentation on a specific topic, which will be followed by class discussions. Finally, in preparation for the 2020 Presidential election, our seminar will conclude with the students participating in a debate: “Medicare for All” vs. “The Public Option.”

Students interested in pursuing a career in health care delivery (e.g., physician, optometrist, dentist, nurse, etc.), health care planning/administration, public health, or health law, or simply exploring the economic burden of health care on US society will find the seminar topics of interest.

From 1972-2003 Professor Polse served as faculty member, Clinic Director, and Associate Dean in the School of Optometry, University of California, Berkeley (UCB). Recently retired, Dr. Polse is currently Professor of Graduate Studies at UCB. His research developed from years of clinical experience, convincing him that it is the clinician’s astute observations that often drive the research agenda. He also believes that discovery and clinical implementation require close collaborative efforts between basic and clinical scientists, a principle that has guided his research career. Some of Professor Polse’s professional services and honors include President, International Society for Contact Lens Research; memberships on the AOA Council on Research and the National Advisory Eye Council (NIH); a Senior Fulbright Fellowship; AAO Garland Clay Award; AAO Max Shapero Lecture; BCLA Principal Keynote Speaker; UCB Sarver Endowed Chair; and Montague Ruben Medal. Since 1974, Professor Polse has had many students, residents, and post-doctoral fellows participate in his laboratory. He has received continuous research support from NIH and Industry for thirty years, resulting in many successful studies (including two NIH-sponsored randomized clinical trials) and over 140 papers published in peer-reviewed journals.
Dr. McNamara’s research centers on understanding the role of innate immunity in protecting host epithelial cells from environmental injury. Mucosal epithelial cells interface with the environment at all body surfaces, including the eye. Thus, the mucosa is often the first line of defense against environmental injury. Mucosal cells use a general defense strategy and are believed to play a critical role in regulating the more powerful adaptive immune response. Unfortunately, sometimes the immune system goes into overdrive and creates a pathological state. Examples of this include ocular allergy, dry eye disease, bacterial infection and even cancer. In each of these disease entities there is an immunological component that either initiates or enhances the disease state. Dr. McNamara’s work focuses on dissecting the molecular events that underlie early immune responses. Her research program involves clinical studies of the human ocular surface, as well as both in vivo and in vitro studies of the immune pathways that promote inflammation in the pathological state. This work will lead to a better understanding of the molecular patterns that contribute to pathology and suggest new strategies for modulating the response in favor of the host.