

Winter 2022 Course Descriptions

Please review the course descriptions below. You should select your **top five** classes. The course selection survey will open **Tuesday, October 19 at 11:50 AM** and closes **Monday, October 25 at 8:00 AM**. Course assignments will be sent via UC Davis email on Wednesday, October 27.

- These courses are restricted to honors students and can only be accessed using a **Course Registration Number (CRN)** distributed by UHP. You cannot search for them in Schedule Builder.
- Each honors student must complete three UHP courses during the 2021-2022 academic year (one per quarter). Taking a second course during Winter 2022 does not waive another quarter's UHP course requirement unless approved by UHP.
- All of the Honors courses are capped at 25 students each, except for DES 128A, ECH 1, MAT 17B, MAT 21C, SAS 5, SOC 5, and SOC 162 which are capped at 13, 24, 30, 30, 14, 20, and 20 respectively.
- ECH 1 is part of a large general-population lecture; however, the lab section is taught by Professors Kuhl and Ristenpart instead of a TA and includes only UHP students.
- Honors courses must be taken for a letter grade and earn a minimum grade of C-; courses changed to P/NP grading will not count toward UHP requirements.
- All prerequisites listed in **red text** will not be waived for honors students. All courses with **WE** General Education credits require satisfaction of ELWR.

Note: Department course offering details--classrooms, days, and times—are subject to change. Schedule Builder provides the most accurate information to date.

COURSE OFFERINGS

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
The Art of Chance	202201	AHI	190H	0U2	4.000
INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Housefield, James	Lecture	W	9:00 AM – 11:50 AM	SHREM	1001

Description:

Lecture/Discussion – 3 hour(s); Term Paper. **Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR)**. Study of a broad problem or theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, and writing. May be repeated up to 2 time(s) when topic differs. GE credit: AH, OL, VL, **WE**.

Chance has played a key role in the creation of new art & music for over a century. This course analyzes this history from a curator's perspective to consider how it has been presented in museum exhibits. Together we will investigate the convergence of art & music using chance as a determining factor. Along the way we will look, read, research, & listen to study key figures (Marcel Duchamp, John

Cage, Yoko Ono, George Brecht, Alison Knowles, & others); changing philosophies of art & music; the meeting of Asian, European, & American cultures; movements like Dada, Surrealism, & Fluxus; & discuss how exhibitions are made & succeed. Chance is not random! Nor is this class, which is designed to intersect with recent & forthcoming exhibitions from the Manetti Shrem Museum of Art, UC Davis (John Cage, 33 1/3); SFMOMA (Nam June Paik); & the BAMPFA (Alison Knowles). Our course prepares us to enjoy the Empyrean Ensemble's concert of contemporary music on February 20, 2022. Professor James Housefield is a scholar & curator whose work emphasizes the histories of art & design, Duchamp, Dada, Surrealism, & Fluxus. He also loves music of all kinds. Class meetings will be seminar-style with a combination of lecture, student presentation, and discussion of reading / listening / viewing. Grading will be based primarily on participation, a research paper & presentation, & the creation of an "event score" that engages chance.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Introduction to American Studies	202201	AMS	10	OU1	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Wang, Grace	Lecture	TR	10:00 AM – 11:50 AM	OLSON	251

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). **Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR).** Ideals, conflicts, and realities defining American Cultures through study of popular music, advertising, and other media. Themes include Imagining America, Citizenship and Belonging, and Cultural/Spatial Practices. GE credit: ACGH, AH, DD, SS, **WE**.

This course examines the intersecting ideals, conflicts, and material realities that have defined American culture. Together, we explore whether there is or has ever been a representative “American” or American narrative. We examine cultural representations of American identity and interrogate what is at stake in those claims. And we focus on particular moments where the intersection between culture, politics, and power has been especially instructive or poignant.

As an American Studies course, the material is interdisciplinary, meaning that we will examine texts and sources from a range of different fields, such as literature, history, music, ethnic studies, and visual culture. The course will also focus on making connections between culture, politics, history, and our everyday lives.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Images of America & Americans in Popular Culture	202201	AMS	30	OU1	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Arapoglou, Eleftheria	Lecture	TR	2:10 PM – 4:00 PM	OLSON	101

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). **Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR).** Investigation of verbal and visual discourses about American identity in various popular culture products, including film, television, radio, music, fiction, art, advertising, and commercial

experiences; discourses about the United States in the popular culture of other societies. GE credit: ACGH, AH, DD, SS, **WE**.

Close your eyes, imagine an American city you've never visited. Perhaps it's New York or maybe it's Miami. An image probably comes to mind. Maybe it is a picture of a skyline you've seen in pictures or beaches you've seen in films. Or maybe people socializing in cafes or running on the coastline. You've never been there, but perhaps somehow you have a feeling about the place. You can recall a picture. These images come from films, television, advertisements, photographs, and other forms of art and media.

What is the significance of being able to "see" a place you've never seen? Most Americans see only a small piece of their country, and most of the world has never visited America. However, the wide circulation of images can mediate our understanding of place. Similarly, from the standpoint of the present, pictures shape our relationship to the past. As we look at the historical relevance of images, we also must ask - under what conditions were these images produced? Does their composition reveal anything to us about the attitudes of the day? How does American culture circulate through images? How, in turn, do images produce the idea of American culture?

Our course is focused on two broad aims. First, we will develop an analytic framework through which we can understand the work of images. How do we analyze a picture and place it within a symbolic and social context? Second, we will discuss distinct histories of pictures, their making, and their circulation in America. We will study historic examples that highlight the ideological, cultural, and political work of images, their production, and their consumption.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Human Rights and Film	202201	CDM	167	AU1	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Fisher, Jaimey	Lecture	M	2:10 PM – 5:00 PM	ARTANX	107

Description:

Lecture – 3 hour(s); Film Viewing – 3 hour(s). Study of one or more of the film genres (such as musicals, film noir, screwball comedy, or westerns), including genre theory and the relationship of the genre(s) to culture, history, and film industry practices. May be repeated up to 2 time(s) when topic differs. GE credit: AH, VL.

The course examines the history, development, and institutionalization of human rights through feature films and documentaries. It considers the possibilities, and consequences, of audio-visual depiction of political, social, economic, cultural questions relating to human rights. Each session engages and debates a specific theme of human rights issues, to be supplemented by readings drawn from important documents or scholarly writing about the relevant topics. The approach we shall take will be interdisciplinary, including: philosophical/ethical, historical, socio-political, and media-analytical perspectives.

The class is taught in concert with the UC Davis Humanities Institutes (DHI)'s Human Rights Film Festival, an annual event undertaken with the international NGO Human Rights Watch. We will consider the role of film festivals in the publicizing of human rights issues and debates, including assisting with the programming of the festival.

Topics covered in the course include: colonialism, the impact of the World Wars on the history of human rights; protecting racial, gender, and sexual difference in human rights; understanding differences in myriad regions of the world, including: East Asia, Africa, Latin America, and the Middle East. To comprehend how human rights are understood and represented in our mass-media world, students will also learn the basics of film analysis (e.g., film's different levels of meaning, including technical terms) in the class.

Films will be made available to students to watch in preparation for class; except for the first day, we shall not be watching entire films in class (just short clips for discussion).

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
BioDesign	202201	DES	128A	001	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Cogdell, Christina	Lecture	T	9:00 AM – 11:50 AM	CRUESS	256

Description:

Lecture/Discussion – 3 hour(s). Foundational principles of biodesign, with examples in textiles, fashion, graphics, lighting, products, and architecture. Team-based experience in biodesign intervention; first steps in a mini-entrepreneurial start-up experience. GE credit: AH.

In this unique pair of courses over two quarters – Winter and DES 128B in Spring 2022 – students will work closely with Design and faculty from other colleges in a hands-on, cross-disciplinary course to produce and showcase innovative new products that are functional, elegant, and sustainable. This is a two-quarter commitment, and students are required to enroll in both W22 DES 128A and SP22 DES 128B.

The BioDesign curriculum is based off the [BioDesign Challenge competition rules](#). In the first quarter, interdisciplinary teams of undergraduates learn basic principles of BioDesign and develop their project ideas for a proposal, including an introduction to the lab work they'll need to get going in the next quarter. Then students put their approved plans in motion in the second quarter to create the novel designs coupled with promotional materials such as videos, websites, and product pitches. The series culminates in a local competition judged by UC Davis and visiting faculty as well community experts such as designers and entrepreneurs. Three years ago, UC Davis BioDesign students produced completely innovative [biodegradable zero-waste bandages](#) and a variety of other designs merging art and science. The UCD teams were specifically challenged to use agricultural waste products, even tricking Kombucha SCOBY to produce new biodegradable polymers that can be incorporated into a whole host of applications.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Design of Coffee	202201	ECH	001	AU6	3.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Kuhl, Tonya	Lecture	M	3:10 PM – 4:00 PM		
Ristenpart, William	Lab/Dis	T	10:00 AM – 11:50 AM		

Description:

Lectures – 1 hour(s); Laboratory – 2 hour(s); Project (Term Project) – 1 hour(s). Non-mathematical introduction to how chemical engineers think, illustrated by elucidation of the process of roasting and brewing coffee. Qualitative overview of the basic principles of engineering analysis and design. Corresponding experiments testing design choices on the sensory qualities of coffee. Not open for credit to Chemical Engineering and Biochemical Engineering majors or students who have completed Chemical and Materials Science 5. GE credit: SE, SL, VL.

Note: This course is a large 1-hour general population lecture, but Professors Tonya Kuhl and William Ristenpart will be teaching the small 24-person 2-hour lab.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Intermediate Macro Theory	202201	ECN	101	OU1	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Geromichalos,	Lecture	TR	1:40 PM – 3:30 PM		
Athanasios	Discussion	F	2:10 PM – 3:00 PM	HUNT	110

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). **Prerequisite(s): (ECN 001A C- or better or ECN 001AV C- or better); ECN 001B C- or better; ((MAT 016A C- or better, MAT 016B C- or better) or (MAT 021A C- or better, MAT 021B C- or better) or (MAT 017A C- or better, MAT 017B C- or better)).** Theory of income, employment, and prices under static and dynamic conditions, and long-term growth. GE credit: None.

Macroeconomics is the study of aggregate economic variables, the economy as a whole. This is in contrast to microeconomics, the study of the economic behavior of individual consumers, firms, and industries. These two branches, however, are much closer than their standard separation into different courses would lead you to believe. Macroeconomists look at the individual behavior- the so-called “micro-foundations”- in creating their theories of aggregate economic activity. In this course, we will study how economists model the relationships between aggregate economic variables and examine how various fiscal and monetary policies can affect the results. The main goal of this class will be to improve your ability to apply economic models to analyze and understand real-world events.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Global Economic History	202201	ECN	110B	OU1	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Meissner, Christopher	Lecture	TR	10:30 AM – 11:50 AM		

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). Development and application of analytical models to explain the nature and functioning of economies since the Industrial Revolution. Examples will be drawn from a variety of societies, including England, China, Germany, and India. GE credit: SS.

This course introduces students to the evolution of the global economy since the early 19th century. Getting familiar with the economic history of the global economy will make you more comfortable in understanding current events such as the global economic crisis, the impact of international trade, the role of international capital flows, and the movement of workers across borders.

We will focus heavily on the following concepts/fields from economics:

- International Trade
- International Finance (exchange rates, capital flows, financial crises)
- Immigration

These issues make news headlines everyday (well, at least in the New York Times, Wall Street Journal, or the Financial Times, one of which, by the way, you should be reading on a daily basis). Your understanding of these events and issues will hopefully improve with this course.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Latin American Social Revolutions	202201	HIS	165	0U1	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Schlotterbeck, Marian	Lecture	TR	10:30 AM – 11:50 AM		

Description:

Lecture – 3 hour(s). **Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR).** Major social upheavals since 1900 in selected Latin American nations; similarities and differences in cause, course, and consequence. GE credit: AH, SS, WC, **WE**.

This course examines the causes, consequences, and legacies of Latin America’s major social revolutions in the twentieth century. Through four case studies on Mexico (1910), Cuba (1959), Chile (1970), and Nicaragua (1979), we will ask why these revolutions occurred, what they changed in the societies that experienced them, and in what ways they satisfied and disappointed those who fought for change. We will begin by examining how each revolutionary movement unfolded, paying close attention to the causes that led people to mobilize, as well as to the declared objectives of revolutionaries and the revolutions’ final results. We will ask who stood to benefit from revolutionary programs, and how did everyday life change for people once a push for revolutionary change took place. These questions will urge us to consider divisions within revolutionary movements, such as the differences between women and men, young and old, as well as divisions between those who formed a revolution’s leadership and those who supported revolution through grassroots political activism. Along the way, students will be asked to think comparatively in order to assess how and why revolutionary strategies and outcomes in one country resembled or differed from those in another.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Ethical Issues in American Health Care	202201	IST	8X*	0U1	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Fedyk, Mark	Lecture	MW	6:10 PM – 8:00 PM	OLSON	118

Description:

*IST 8X is a cross-listed course consisting of IST 8A, IST 8B, and IST 8C. Students will register for course 8A, 8B, or 8C depending on their GE preference. Course 8A: SE, SL. Course 8B: AH. Course 8C: SS.

This course will have a tighter focus on the history of the classification of people in the American healthcare system. Topically, this means that the course will cover race, racialization, and racism, and the classification of people and their bodies, drawing primarily on examples from the evolution of health science and health care in the 20th century. But the course will expand its focus to ask linked questions about why the health sciences need categories of people, and investigate ethical questions about how these categories can be formed in ways that are expressive of diversity, inclusive, but also scientifically meaningful, in the sense that the categories can be used to support evidence-based clinical reasoning.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Adventures in Data Science: Quarter 1	202201	IST	8X*	0U3	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Stahmer, Carl	Lecture	T	1:10 PM – 2:00 PM	SHIELDS	360
Reynolds, Pamela		R	1:10 PM – 4:00 PM	SHIELDS	360

Description:

*IST 8X is a cross-listed course consisting of IST 8A, IST 8B, and IST 8C. Students will register for course 8A, 8B, or 8C depending on their GE preference. Course 8A: SE, SL. Course 8B: AH. Course 8C: SS.

Prerequisite(s): Have declared or be intending to declare a traditionally non-computational major and/or minor. Students from social sciences, humanities, and arts will receive priority; students in the life sciences and similar traditionally non-computational majors are also eligible to participate.

This course focuses on acquiring the skills necessary for performing data-driven, interdisciplinary research.

This is the first course in a challenging two-quarter series. The first course of the series, offered in Winter 2022, is a classroom-based course in which students will acquire the core skills and knowledge necessary to conduct data-driven research using the R programming language. No previous experience with computer science, data science, or statistics is required. It is an expectation that students who successfully complete the first quarter of the series with a final grade of B or better will move on to the second course of the series offered in Spring 2022. The second course is a practicum-based learning opportunity in which students will be embedded into one of several interdisciplinary research teams to solve active research problems with faculty and researchers from across UC Davis. During the second quarter students will work closely with the faculty Principal Investigators (“clients”), Graduate Student mentors, and staff research data scientists.

Combined, the **two-quarter honors/elective** series introduces students to the basics of computer programming and data analysis using the R programming language and provides hands-on exposure to the core skills needed to work in interdisciplinary, team-science settings. This program is designed to give students pursuing majors that are not within the data sciences the knowledge and skills to succeed in today’s interdisciplinary, data-driven workforce.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Searching for Sustainability Through Entropic Forces and Collective Actions	202201	IST	8X*	0U4	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Min, Susette	Lecture	TR	10:30 AM – 11:50 AM	SHREM	1303

Description:

*IST 8X is a cross-listed course consisting of IST 8A, IST 8B, and IST 8C. Students will register for course 8A, 8B, or 8C depending on their GE preference. Course 8A: SE, SL. Course 8B: AH. Course 8C: SS.

What is entropy? Why is this term so important to know, not just for physicists, but for everyone, especially in light of the current pandemic that has irrevocably changed the way we live in the world and engage with others?

In this course, we look beyond the mathematical definition of entropy and explore various open systems that are not at thermodynamic equilibrium such as the Earth, and processes on it that impact life and ecology. The interdisciplinary course is broadly organized around four elements: earth, water, air, and fire. For example, we will explore how changes in our engagement with land and water resources can lower the impact of the carbon cycle and greenhouse gases, and protect biodiversity on earth. We will study the spread of COVID-19 by looking at socio-economic conditions and biological mechanisms of a society and how it consumes free energy and look at the human body as an open system and how at the end of a person's life, the body decomposes. The course will then explore how science and technology, capitalism, and government have attempted to resist entropy, and at the same time, have contributed to its deterioration and acceleration, underlining how ideas of progress and ideas of entropy, life, and human forces are intimately linked.

Like time, entropy cannot be reversed or stopped, but learning about its process will remind students and the larger community of UC Davis how every situation, every system is never permanent, but only temporary.

In collaboration with the Science, Humanities and Arts: Process and Engagement (SHAPE) program funded by the Andrew W. Mellon Foundation. A performing artist will engage with the course throughout the quarter with a culminating public performance at the Mondavi Center for the Performing Arts.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Calculus for Biology and Medicine	202201	MAT	17B	0U1	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Varn, Dowman	Lecture	MWF	10:00 AM – 10:50 AM	VEIMYR	116
	Discussion	R	5:10 PM – 6:00 PM		

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). **Prerequisite(s):** MAT 016A C- or better or MAT 17A C- or better or MAT 021A C- or better or MAT 21AH C- or better. Introduction to integral calculus and elementary differential equations via applications to biology and medicine. Fundamental theorem of

calculus, techniques of integration including integral tables and numerical methods, improper integrals, elementary first order differential equations, applications in biology and medicine. Not open for credit to students who have completed MAT 016C, MAT 021B, or MAT 021C; only 2 units of credit for students who have completed MAT 016B. GE credit: QL, SE, SL.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Calculus	202201	MAT	21C	0U1	4.000
INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Chavez, Anastasia	Lecture	MWF	10:00 AM – 10:50 AM	BAINER	1060
	Discussion	T	6:10 PM – 7:00 PM	KERR	293

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). **Prerequisite(s): MAT 016C C- or better or MAT 017C C- or better or MAT 021B C- or better or MAT 021BH C- or better or MAT 017B B or better.** Continuation of MAT 021B. Sequences, series, tests for convergence, Taylor expansions. Vector algebra, vector calculus, scalar and vector fields. Partial derivatives, total differentials. Applications to maximum and minimum problems in two or more variables. Applications to physical systems. GE credit: QL, SE.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Music from Latin America	202201	MUS/SPA	127/171	001	4.000
INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Ortiz, Pablo	Lecture	TR	10:00 AM – 11:50 AM	MUSIC	203

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). **Prerequisite(s): Consent of Instructor. Completion of Entry Level Writing Requirement (ELWR).** Examination of music from Latin America. Characteristic music (i.e. tango, bossa nova, salsa, musica motena, musica andina) as well as its implications in other musical genres. Taught in English. May be repeated up to 1 time(s) when topic differs. Not open to students who have taken SPA 171S or MUS 127S. (Same course as SPA 171). GE credit: AH, VL, WC, WE.

The course focuses on the music and culture from five major areas of Latin America: Mexico, the Caribbean, Brazil, Peru and the Andes, and the Southern Cone. We will examine how music from these areas becomes global through exposure and hybridization with "lingua franca" styles such as cumbia, hip-hop, rock, etc. We will also watch films that exemplify crucial aspects of the different cultures with a special emphasis on their music.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Musics of East and Southeast Asia	202201	MUS	129C	0U1	4.000
INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Spiller, Henry	Lecture	TR	10:30 AM – 11:50 AM	EVERSN	266

Description:

Lectures – 3 hour(s); Discussion – 1 hour(s). **Prerequisite(s):** Prior experience with music performance, such as self-taught instrument, private lessons, or performance in an ensemble/band. Completion of Entry Level Writing Requirement (ELWR). Survey of music cultures from Japan, China, Korea, Vietnam, and Indonesia, with special emphasis on the role of music in society and on the elements of music (instruments, theory, genres, and form, etc.). Introduction to ethnomusicological theory, methods, approaches. GE credit: AH, VL, WC, WE.

This course aims to introduce students to selected musical traditions of Asia, as well as to some general conceptual approaches of the field of ethnomusicology. This quarter the course will focus on music traditions of Indonesia and Korea. Through a series of case studies, we will examine aesthetic and technical aspects of different musical systems as well as the role music plays in various cultural processes, such as religion and cosmology, the dialectic of tradition and modernity, and the construction of ideologies of gender, class, and identity. Although the course is in the form of a survey, it makes no claims to be comprehensive or even representative of such an enormous and culturally diverse geographical area. The overall course objectives are to: (1) become familiar with the goals and methods of ethnomusicology, (2) develop vocabulary and frameworks for analyzing music in its cultural context, and (3) achieve a deeper understanding of how music does real cultural work.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Visualization in Science	202201	PHY	12	OU1	3.000
INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Terning, John	Lecture	MWF	10:00 AM – 10:50 AM		

Description:

Lecture – 3 hour(s). Production, interpretation, and use of images in physics, astronomy, biology, and chemistry as scientific evidence and for communication of research results. GE credit: SE, SL, VL.

This course will explore scientific discovery in visual terms as well as how science can be creatively communicated to non-experts. The students will produce their own imaginative videos expressing responses to a specific scientific topic as a final product while linking scientific ideas and data with innovative visual analogies and personal narratives. In a rapidly changing world, citizens need to be adequately informed about science in order to make educated choices. However, few people have sufficient time to keep up with the wide variety of developments. A further problem is that when scientists try to communicate with the public they typically fail to make a human/emotional connection hoping that “facts will speak for themselves.” Psychological research shows that emotional engagement precedes cognitive engagement. Visual representation can convey a great deal of information, but without the emotional component that art has the potential to evoke, it will always fall short. Modern science began with Galileo; his invention of the telescope allowed him to see further than anyone had imagined possible. As a true renaissance man, he recorded his observations of mountains and craters on the moon by painting watercolors. Since that time many leaps in science have been spurred on by leaps in our ways of seeing the world. The advent of microscopes brought biology to the cellular level. Motion pictures introduced the study of the very fast (from running horses to explosions) and the very slow (the growth and movement of plants). In the 20th century seeing was extending beyond the visible spectrum to ultraviolet light, infrared light, X-rays, radio waves (radar and MRI) and even sound waves (sonar and sonograms). The information gained revolutionized our understanding of the world around us, including discovering the molecular structure of DNA, monitoring the chemical composition of the atmosphere, and finding our small place in a vast, expanding Universe. All these visual techniques provide an intuitive way to approach science, by letting us literally see how the world

works. Even when information is collected by more mundane techniques, resulting in tables of numbers, it is difficult to communicate the results to non-scientists without some form of data visualization. In an era of big data, even scientists rely on data visualization to understand what the data is telling us. Lives and even the existence of our species may depend on clearly communicating the results of science. Famously, the crew of the Challenger space shuttle died as a result of poor science communication. The NASA engineers knew that the shuttle engines would fail if launched during a cold snap, but were unable to present this information in a manner that was clear and compelling enough to convince the managers.

Lectures will cover how the world is revealed through visual means and how scientific results can be effectively communicated visually. Science topics to be explored include climate change, DNA, gene editing, medical treatment, and our place in the cosmos. Students will be given the opportunity to choose the science topics to discuss.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
A Hummingbird Story: Biology and Symbolism	202201	SAS	5	001	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Tell, Lisa	Lecture	T	1:10 PM – 2:00 PM	VM3A	5206
Ullman, Diane	Lec/Dis	R	1:10 PM – 4:00 PM	ENHORT	128

Description:

**Students in this course will register for both SAS 5 (3 units) and SAS 90X (1 unit) for a total of 4 units of credit.*

SAS 5: Lecture/Discussion – 3 hour(s). Highlights a current issue and/or controversy found in contemporary society and looks at how this problem impacts and is affected by the physical, social, and biological sciences. Topics vary. May be repeated up to 2 time(s). GE credit: SE, SS.

SAS 90X: Seminar – 1-4 hour(s). Examination of a special topic in Science & Society through shared readings, discussions, written assignments, or special activities such as fieldwork, laboratory work, etc. May be repeated for credit. GE credit: None.

Pollinators encompass a diverse group of animals that provide important ecosystem services. This seminar will explore the hummingbird species of California, what ecosystem services hummingbirds provide, the important factors that help hummingbirds be successful and produce offspring, and how hummingbirds are being studied in science. In addition, discussions about the visual symbolic message of the hummingbird in different Latin American countries researching cultures, artifacts and visual historic representation will occur. Students will learn how to research ideas and apply their own concept and designs to a symbol that is representative of the hummingbird. They will learn the basic design principles that can be applied to creation of visual narrative. The design can be hand drawn, digitally, technically draw or abstract, still maintaining the core message. Students will be guided through the design process with critiques at each step of the process, and continued class discussions on the meaning of their design and research leading up to their concept. Their final project will be rendered in ceramics, and they will learn to silk screen their designs onto ceramic tiles, and collaborate in combining their work into a mural. The goal of this course is to provide students with an overview of scientific studies evaluating challenges that hummingbirds are facing in an ever changing world in addition to understanding and expressing the symbolism of these majestic birds using basic principles of visual narrative.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Global Social Change	202201	SOC	5	0U1	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
McCourt, David	Lecture	TR	10:00 AM – 11:50 AM	BAINER	1128

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). Introduction to change and diversity in world history, including the United States. Examines population and family, technological changes and economic development, power and status, culture and identity. GE credit: ACGH, SS, WC.

This course offers an analysis of some of the major global social changes since the nineteenth century, using the growth of capitalism as an overarching framework. The course focuses on four main elements of the development of capitalism: first, the evolution of the capitalist world system, which spread from its origins in Europe and North America to dominate the globe today; second the major components of the capitalist system, the capitalist class, states, workers, and consumers; third, the course examines how the system has functioned and its impacts on politics, economies, and societies around the world; and finally, fourth, we discuss common forms of resistance to capitalism. Recent events like the global coronavirus pandemic and the ongoing problem of climate change, make this course particularly timely.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Health, Cultures, and Inequalities	202201	SOC	162	0U1	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Lo, Ming-Cheng	Lecture	TR	1:40 PM – 3:00 PM	BAINER	1128

Description:

Lecture – 3 hour(s); Term Paper/Discussion – 1 hour(s). Analysis of how sociocultural factors shape illness experience. Evaluation of how certain conditions come to be understood as health conditions; illness identities and biographies; doctor-patient interactions; biomedical cultures; how race, ethnicity, and gender shape health practices. GE credit: DD, SS.

This course equips students with sociological concepts in order to advance their understandings of the social and humanistic aspects of medicine. We will focus on how cultural and societal factors shape health, healthcare options and encounters, as well as the ways in which we make sense of illness experiences and develop patient identities. Key topics that will be explored include: the social construction of medicine; doctor-patient interactions; doctors' professionalization; medicalization of social and behavioral problems; race and class disparities in health; healthcare policies; illness experiences and identities; the medicalization of deaths and its limitations.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Video Game Rhetorics	202201	UWP	13	001	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Ching, Kory	Lecture	TR	10:30 AM – 11:50 AM	HUTCH	75

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). **Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR).** Examination of video games as rhetorical texts whose meaning is produced through complex interplay of procedures, narratives, rules, and context. Writing about video games using critical perspectives and analytic methods. GE credit: AH, VL, **WE**.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Proposal Writing	202201	UWP	110	001	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Macarthur, Marit	Lecture	MW	1:40 PM – 3:00 PM	OLSON	27

Description:

Lecture – 3 hour(s); Extensive Writing. **Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR).** Instruction in the elements and practices of professional writing in specialized genres. May be repeated up to 2 time(s) when topic differs. GE credit: AH, **WE**.

This course introduces students to strategies for composing effective proposals. Students learn to identify a need, target an appropriate funding source, and persuasively argue the merits of the proposed solution, whether to secure funding or procure a contract. The course focuses on writing a proposal that meets all the funder's requirements and presents a well justified narrative, budget, and timeline. Students will learn to identify the rhetorical basis of proposals and to differentiate between solicited and unsolicited proposals for various contexts, such as nonprofit and for profit, academic and private. They will learn how to define the problem or area of opportunity for which support is being sought, research solutions, and solicit buy-in from stakeholders. They will learn to identify sources of funding for grant proposals, to understand Requests for Proposals, and to analyze the charge of the funding sources, assess the proposal requirements, and understand the role of the Grant Program Officer. They learn how the review process works, what the common elements of proposals are, and develop essential proposal writing skills, including formatting, editing, and working with multiple authors.

Please note that this course does not fulfill the [Upper Division Writing Requirement](#), but can be applied towards the [Professional Writing Minor](#).