

# Winter 2021 Course Descriptions

Please review the course descriptions below. You should select your **top five** classes. The course selection survey will open **Tuesday, October 27 at 11:50 AM** and closes **Monday, November 2 at 8:00 AM**. Course assignments will be sent via UC Davis email on Wednesday, November 4.

- 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 2020-2021 academic year (one per quarter). Taking a second course during Winter 2021 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 ART 113, DES 128, ECH 1, MAT 17B, MAT 21C, and VME 198 which are capped at 20, 12, 24, 30, 30, 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.*

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## COURSE OFFERINGS

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Art, Architecture, and Human Rights	202101	AHI	120A	002	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Watenpaugh, Heghnar	Lecture	MW	9:00 AM – 10:50 AM	REMOTE	

### Description:

Lecture/Discussion—4 hour(s). **Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR).** Study of human rights as they relate to art, architecture, and cultural heritage. Examines museums, art collections, and cultural-heritage management, their relation to the cultural prerogatives of communities and indigenous groups, and protection of cultural heritage during war and conflict. Same course as HMR 120A. GE credit: AH, DD, SS, VL, WC, **WE**.

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TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Creative Visualizations of Science	202101	ART	113	001	4.000

<b>INSTRUCTOR(S)</b>	<b>TYPE</b>	<b>DAYS</b>	<b>TIME</b>	<b>BUILD</b>	<b>ROOM</b>
Martin, Darrin Terning, John	Lecture	TR	1:10 PM – 4:00 PM	REMOTE	

**Description:**

Studio – 6 hour(s). Sound composition and development of an audio databank. Study of repetition and phase shifts. Creation of descriptive acoustic space recordings in combination with other artistic media. Audio as stand-alone or accompaniment. May be repeated up to 1 time(s). GE credit: AH, 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 for several lectures. Lectures will also present artistic interpretations of science with class discussions of both their artistic merit and effectiveness in communicating an idea or point of view. In addition each week there will be an hour and a half of studio time where the students learn about the technical and artistic aspects of producing a video.

In collaboration with the Science, Humanities and Arts: Process and Engagement (SHAPE) program funded by the Andrew W. Mellon Foundation.

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TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Human Rights Film	202101	CDM	167	001	4.000

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

**Description:**

Lecture – 3 hour(s); Film Viewing – 3 hour(s). Formerly listed as FMS 125. A study of one or more of the film genres (such as the documentary, the musical, film noir, screwball comedy, or the western), 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. Not open for credit to students who have completed HUM 125, unless 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 occasionally supplemented by short 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 film-analytical perspectives.

Topics covered include: colonialism, the impact of the World Wars on the history of human rights; protecting racial, gender, and generational 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
Women of Color Reproductive Health & Reproductive Politics in a Global Perspective	202101	CHI	114	001	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Deeb-Sossa, Natalia	Lecture	TR	12:10 PM – 1:30 PM	REMOTE	

**Description:**

Lecture/Discussion – 3 hour(s); Term Paper. **Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR).** Study contemporary issues in reproductive health and reproductive politics, both globally and in the U.S., for women of color. GE credit: ACGH, DD, SS, WC, **WE**.

This course will deal with contemporary issues in reproductive health and reproductive politics for women, in particular women of color in the US. Among the issues to be addressed: birthing policies, abortion, the link between reproductive health and environmental issues, and reproductive health in global context.

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TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
BioDesign	202101	DES	128	001	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Marley, Elizabeth	Lecture	T	4:10 PM – 7:00 PM	REMOTE	

**Description:**

Lecture/Discussion – 3 hour(s); Term Paper. Recent biological theories and their influence upon design theory and practice; includes bio-based materials in contemporary design. GE credit: VL.

In this unique pair of courses over two quarters – Winter and Spring 2021 – students will work closely with Design and Biology or Bioengineering faculty in a hands-on, cross-disciplinary course to produce and showcase innovative new products that are functional, elegant, and sustainable.

The BioDesign curriculum is based off the [BioDesign Challenge competition rules](#). In the first quarter, teams of undergraduates pair with graduate students to 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 venture capitalists. Two 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.

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TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Design of Coffee	202101	ECH	001	A17	3.000

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

**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.**

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TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
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Intermediate Macro Theory 202101 ECN 101 001 4.000

<b>INSTRUCTOR(S)</b>	<b>TYPE</b>	<b>DAYS</b>	<b>TIME</b>	<b>BUILD</b>	<b>ROOM</b>
Geromichalos,	Lecture	TR	1:40 PM – 3:30 PM	REMOTE	
Athanasios	Discussion	F	2:10 PM – 3:00 PM	REMOTE	

**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.

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<b>TITLE</b>	<b>TERM</b>	<b>SUBJ</b>	<b>CRSE</b>	<b>SEC</b>	<b>CREDITS</b>
International Economic Relations	202101	ECN	162	001	4.000

<b>INSTRUCTOR(S)</b>	<b>TYPE</b>	<b>DAYS</b>	<b>TIME</b>	<b>BUILD</b>	<b>ROOM</b>
Swenson, Deborah	Lecture	TR	9:00 AM – 10:20 AM	REMOTE	

**Description:**

Lecture – 3 hour(s); Discussion – 1 hour(s). International trade & monetary relations, trade policy, exchange rate policy, policies toward international capital migration and investment. Emphasis on current policy issues. Intended especially for non-majors. Not open for credit to students who have completed ECN 160A or ECN 160B. GE credit: SS, WC.

International Economic Relations studies the real and financial forces of international integration that bind countries together, including international trade, outsourcing, immigration, trade policy, national exchange rate choices, international capital flows, and international macroeconomic linkages. All topics are discussed and demonstrated in the context of current policy debates with a focus on the implications for national wellbeing in different countries around the world as distinguished by their individual characteristics including country endowments, preferences, size, capabilities and institutions.

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<b>TITLE</b>	<b>TERM</b>	<b>SUBJ</b>	<b>CRSE</b>	<b>SEC</b>	<b>CREDITS</b>
Human Wrongs/Human Rights	202101	HMR	1	001	4.000

<b>INSTRUCTOR(S)</b>	<b>TYPE</b>	<b>DAYS</b>	<b>TIME</b>	<b>BUILD</b>	<b>ROOM</b>
Watenpugh, Keith	Lecture	TR	10:00 AM – 11:50 AM	REMOTE	

**Description:**

Lecture – 3 hour(s); Discussion – 1 hour(s). **Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR).** Introduction to Human Rights and the problems they seek to address. Using key episodes of inhumanity like slavery, genocide, and racism. Examines how international movements for social justice led to the emergence of the international Human Rights system. GE credit: AH, SS, WC, **WE.**

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Ethics and the Contemporary Health Sciences	202101	IST	8X*		4.000

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

**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 examines a sequence of ethical problems that arise as a by-product of recent advances in both the biomedical sciences and the evolution of Western health-care systems. Students in this course will study the ways in which scientific inquiry in these areas can be both a cause of ethical problems and a source of solutions to the very same problems. Students who are interested in a career in the Health Systems will benefit from this course's comparative approach to engaging with the various Health Sciences.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Eating Mathematics with a Spoon: Mathematical Recreations, Explorations, and Philosophy	202101	IST	8X*		4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Tavernetti, Edward	Lecture	TR	3:10 PM – 4:30 PM	REMOTE	

**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): MAT 21A or equivalent (high school level calculus accepted).** This course is intended as a widely appealing blend of mathematical ideas and philosophical inquiries derived therefrom. We will focus on selected and often surprising results from the major pillars of mathematics: algebra, geometry, numbers, infinity, probability and statistics, calculus, modern applications and modeling, and philosophy. We will study art, history, fluid mechanics, chemical kinetics, all kinds of engineering applications, infinity, chaos theory, fractals, music, biophysics, elections, war, finance, data analysis, cartography, graphic design, and other exciting topics with deep mathematical roots and active research fields. There are many excellent and more comprehensive courses on each of these topics and this will in no way be their equal or substitute. Instead, we will take a something for everyone approach that

attempts to shine light on, and catalyze interest for, what mathematics is and what it actually can do. More to the point, the main goal of this course is not to lecture you on why you ought to care about mathematics, but instead to give you insights into a larger world of ideas that will complement your other studies. Expect to get your hands dirty, to write, to discuss, to do some light guided programming, and above all to challenge your present ideas.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Adventures in Data Science: Social Sciences Series Quarter 1	202101	IST	8X*		4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Stahmer, Carl	Lecture	TR	2:30 PM – 4:00 PM	REMOTE	
Reynolds, Pamela	Discussion	1 hour discussion to be arranged based on student availability			

**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.

Registration priority will be given to students with majors in the social sciences. 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 2021, 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 2021. 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 in the Social Sciences knowledge and skills to succeed in today’s interdisciplinary, data-driven workforce.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Calculus for Biology and Medicine	202101	MAT	17B	001	4.000

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

**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	202101	MAT	21C	001	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Chavez, Anastasia	Lecture	MWF	10:00 AM – 10:50 AM	REMOTE	
	Discussion	T	6:10 PM – 7:00 PM		

**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 of a Major Composer: Mozart	202101	MUS	110D	001	4.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Busse Berger, Anna Maria	Lecture	F	1:10 PM – 4:00 PM	REMOTE	

**Description:**

Lecture – 3 hour(s); Discussion – 1 hour(s). Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR). Work of Mozart will be studied in the context of his time and his contemporaries. Lectures, discussion/guided listening sections, and selected readings. For non-majors. GE credit: AH, VL, WC, **WE**.

This course consists of lectures, readings, and directed listening designed to introduce the student to ways of understanding Mozart's masterworks. In general, the lectures deal with the concepts and technical procedures relevant to the week's listening selections. The musical works are presented in chronological order and by genre.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Performance & Culture Among Native Americans	202101	NAS	125	002	4.000



INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Mendoza, Zoila	Lecture	MW	2:40 PM – 4:00 PM	REMOTE	

**Description:**

Lecture – 3 hour(s); Film Viewing – 3 hour(s). **Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR).** Interdisciplinary study of public expressive forms among Native Americans. Comparison and analysis of music, dances, rituals, and dramas from throughout North, Central, and South America in their social and cultural contexts. Extensive film viewing. Not open for credit to students who have completed MUS 125. GE credit: AH, SS, WC, **WE**.

This class introduces students to the interdisciplinary study of public expressive forms among Native Americans. With a comparative perspective, it analyzes music, dances, rituals, and dramas from throughout the Americas in their social and cultural contexts. Students take an active role by participating in class discussions about the readings and films throughout the first part of the course and by working on their own projects and presenting them to the class during the second part of the class.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
A Hummingbird Story: Biology and Symbolism	202101	VME	198	002	3.000

INSTRUCTOR(S)	TYPE	DAYS	TIME	BUILD	ROOM
Tell, Lisa	Lecture	R	2:10 PM – 4:00 PM	REMOTE	
Okamura, Gale	Discussion	T	2:10 PM – 3:00 PM	REMOTE	

**Description:**

Directed group study. May be repeated for credit. (P/NP grading only). 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 the visual representation. The design can be hand drawn, digitally, technically draw or abstract, still maintaining the core message. There will be continued class discussions on meaning of their design. 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 symbolism of these majestic birds and learn basic design principles.