

ECH 289E-001 Bioethics and Professionalism in Biotechnology
(CRN# 62816; 2 units) SPRING QUARTER 2023

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Lecture Time: Wednesdays 2:10pm-4:00pm
Lecture Location: 1022 Green Hall

Course Description:

Graduate students will explore current bioethics discussions in biotechnology, best practices for conducting research and other translational activities to support inclusive team science and consider potential societal impacts of emerging technologies. Students will work together on interdisciplinary team projects to develop and present bioethics case studies across biotech key sectors, such as biopharma, food science and agriculture, and novel biomaterials.

Learning Objectives:

- Become familiar with the primary bioethics concerns related to life sciences and engineering research.
- Learn basic approaches for data management and experimental design to maintain data integrity and confidentiality, and abide by regulatory requirements (e.g., BUAs, IRB, cGMP).
- Understand professional norms of conduct in biotech-related research and team settings to promote a culture of inclusion and accelerate research progress.
- Work with an interdisciplinary team to develop a bioethics case study presentation

Required Reading:

Required course readings will be drawn from primary literature, government reports and other professional science/engineering publications. PDFs of required reading assignments will be uploaded to the corresponding lecture resource folder on Canvas ~one week prior to the lecture.

Course Format:

ECH298E is a 2-unit course that will meet once per week for two hours and include a combination of lecture, discussion and interactive group work. Course instructors and guest lecturers will present a variety of bioethics and professionalism topics and student teams will present case studies at the end of the quarter.

Prereqs: N/A

As with all campus courses, we expect students to abide by the UC Davis Code of Academic Conduct, which can be found at: <http://sja.ucdavis.edu/files/cac.pdf>.

Major Assignments & Grading:

Letter grades will be based on **Weekly Class Activities (80 pts)** and a **Bioethics Case Study / Team Project (100 pts)**, for a cumulative total of **180 pts**. The highest scoring student's accumulated points will set the grade scale

at 100% (A+). Traditional percent brackets for letters grades will then be applied. All graded assignments will be due on the dates indicated on the course schedule. All work, including late submissions, must be received no later than the day of the scheduled final, **June 15, by 11:59pm.**

Weekly Class Activities (80 pts):

A short, in-class participation assignment (10 pts each) will be given during each class meeting for Weeks 1 – 4 and Weeks 6 – 9. The Class Activity entry will be due via Canvas upload (.doc or .pdf) by midnight on the same day of assignment for full credit.

Bioethics Case Study / Team Project (100 pts):

- The class will collectively brainstorm several biotech-related case study topics of interest at the close of Lecture #3 and we will organize into project teams around these current topics.
- Starting with Lecture #4, case study teams will spend a portion (~20-30min) of class time working to develop an educational presentation to be shared during the last two lectures.
- All class participants will be expected to help develop and present a case study, as well as serving as an audience member and taking part in group discussion responses for other case studies. A peer review/self-evaluation form will be submitted by each member of the class for each case study, including their own project.
- Final Grade (100pts) = 80pts possible for an educational Bioethics Case Study Presentation that is factual, compelling and engages the class + 20pts possible for submission of complete and thoughtful Peer Review/Self-Evaluation Forms for every presented case study.

Late Work Policy

Late Class Activity assignments will be accepted until the date of the final exam with a 10% reduction in credit for each day late (M-F). After 5 days late, a floor of 50% credit for a late assignment with acceptable content will be assigned up until the date of the final exam.

Week	Date	<i>Tentative</i> Course Schedule	Lecturer	Assignments Due on Canvas by 11:59pm
1	Apr 5	Intro to Bioethics and Professionalism	Jamison-McClung and McDonald	Class Activity 1
2	Apr 12	Bioethics in Agricultural Biotechnology and Food Tech	Jamison-McClung	Class Activity 2
3	Apr 19	Bioethics in Biopharma, Personal Genomics and Healthcare	McDonald and Jamison-McClung	Class Activity 3
		Team Formation		
4	Apr 26	Bioethics and Professionalism in Science Communication	Jamison-McClung	Class Activity 4
		Team Breakout Meeting		
5	May 3 ZOOM	Bioethics and Biosecurity	McDonald	(No Class Activity)
		Team Breakout Meeting		
6	May 10	Experimental Design, Research Rigor and Reproducibility	McDonald and Jamison-McClung	Class Activity 5
		Team Breakout Meeting		
7	May 17	Data Management and Integrity – Academia, Govt and Industry Policies/Norms	McDonald and Jamison-McClung	Class Activity 6
		Team Breakout Meeting		
8	May 24	Artificial Intelligence in Academic Publishing and Scholarly Works	McDonald and Jamison-McClung	Class Activity 7
		Team Breakout Meeting		
9	May 31	Diversity, Equity, Inclusion and Accessibility (DEIA) – Inclusive Team Building for Innovation	Jamison-McClung and McDonald	Class Activity 8
		Team Breakout Meeting		
10	Jun 7	Team Project Presentations	All Participants	Presentation Evaluations
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Finals Week	Jun 15	All Late Assignments due by 11:59pm on the date of the Scheduled Final (June 15)	All Participants	Class Activities, Project Slides and Evaluations

Note – Changes to the schedule, course policies, office hour meeting location, and other information contained in the syllabus, may be made during the quarter. Any changes will be announced and explained during class time, and an updated syllabus will be posted to the course Canvas site.