

San José State University
Philosophy 133
“Ethics in Science”
Spring 2020

Course and Contact Information

Instructor:	Janet D. Stemwedel
Office Location:	Faculty Office Building 203
Telephone:	(408) 924-4470
Email:	janet.stemwedel@sjsu.edu
Office Hours:	Mondays 3:30-4:30 pm, Tuesdays 9:00-10:00 am, or by appointment
Class Days/Time:	Mondays and Wednesdays 1:30-2:45 pm
Classroom:	BBC 222
Prerequisites:	Completion of core GE requirements, upper division standing, successful completion of WST. 100W is a prerequisite or co-requisite for the course.
GE/SJSU Studies Category:	V (Culture, Civilization & Global Understanding)

Course Format

Technology Intensive, Hybrid, and Online Courses:

Some quizzes and assignments in this course will be delivered online via on [Canvas Learning Management System course login website](#) at <http://sjsu.instructure.com>. For these, you will want access to a computer that can connect to the Internet. Online assignments and activities are indicated in the course schedule.

Faculty Web Page and MySJSU Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on my web page at <http://www.stemwedel.org/ethicsinscience/>. You are responsible for regularly checking with the messaging system through MySJSU to learn any updates.

Course Description

The purpose of this course is to explore the ways in which values play a role in the practice of science. This course will consider the values and practices of scientific countries (including the U.S., Japan, and India), and the historical development of particular scientific values and practices (e.g., objectivity, proper methods for communicating results, proper treatment of human or animal experimental subjects), and the interactions between cultures that influence the development of scientific values and practices (e.g., the particular departures from the western model of science seen in Japan and India).

Another purpose of this course is to recognize that within a country like the U.S. science is a culture, with its own values and practices distinct from those of the lay culture in which it is embedded. Such mundane matters

as choice of research question, experimental design, and relationships within research labs are reflections of the values of a scientific community. This course will examine the interactions between the embedded culture of science and the larger embedding culture, exploring how the interplay between these cultures affects the values and practices of each.

Readings will draw heavily on case studies, both to illuminate conflicts over values and over the practices that best embody a value, and to illuminate the advantages of taking a pro-active approach to incorporating ethical considerations in real-life research and learning environments. Since scientific practices embody values, a central goal of this course is to emphasize that ethical considerations are a crucial element of the conduct of science and of good research design.

GE Learning Outcomes (GELO)

“Ethics in Science” is designed to meet the G.E. learning objectives for Area V (culture, civilization, and global understanding).

Upon successful completion of this GE course, students will be able to:

1. *“Compare systematically the ideas, values, images, cultural artifacts, economic structures, technological developments, or attitudes of people from different societies.”* In particular, you should be able to compare the values of the culture of science, and the way those values are reflected in scientific practices and methodologies, with the values of the larger societies in which scientists are embedded (including the U.S., but also considering Japan and the developing world).

2. *“Identify the historical context of ideas and cultural practices and their dynamic relation to other historical contexts.”* For example, you should be able to identify the influence the Nazi Doctors’ Trial at Nuremberg and the exposure of the Tuskegee syphilis experiment in the U.S. had on local and international standards for experiments on human subjects; to assess the ways in which the Nuremberg and Helsinki codes embody the interests of the research subject against the interests of scientific research; and to discuss the pressure placed on these codes by current AIDS research.

3. *“Explain how a culture outside the U.S. changes in response to internal and external pressures.”* For example, you should be able to explain how prominent allegations of scientific fraud recently have influenced definitions of scientific misconduct proposed by governmental and funding agencies; how financial and professional pressures can act as a counterforce to the scientific value of free exchange of information; and how attitudes toward gender and race in the larger society can influence the objectivity of scientific work.

Required Texts/Readings

Textbooks (available at Spartan Book Store and from online book sellers)

Carl Djerassi, *Cantor's Dilemma*
ISBN 9780140143591

Deni Elliott and Judy E. Stern (eds.), *Research Ethics: A Reader (E&S)*
ISBN 0874517974

Philosophy 133 Course Reader

Available online (via Canvas) or for purchase (print-on-demand)
at Maple Press (330 S. Tenth Street, 408-297-1001)

Course Requirements and Assignments

“Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.”

Course ground rules agreement: Read and sign, indicating that you understand and agree to the rules. *If you do not understand them, you must schedule a conference with me to go over them. **This is required before other assignments will be accepted.*** Due no later than Wednesday, February 12, and worth 2% of your course grade.

Quiz: Understanding (and avoiding) plagiarism: Delivered online (via Canvas), this quiz is due no later than Friday, February 14, and is worth 2% of your course grade.

Quiz: Basic concepts and background information for case studies: Delivered online (via Canvas), this quiz is due no later than Friday, February 14, and is worth 2% of your course grade.

Case study responses: Over the course of the term, you will explore 3 case studies. After reading the case, you will write an initial response (of approximately 300 words) defending a course of action for the protagonist, participate in a discussion about the case, and then answer some focused questions about the case (the case quiz). Two of the case study responses will be done in class. One of the case studies will be done as an assignment outside of class, making use of online discussion of the case with your classmates. No late case study responses will be accepted, but I will drop your lowest case study initial response grade and your lowest case study quiz grade before calculating your final grade. Taken together, the case study initial responses will count for 12% of your course grade and the case study quizzes will count for 12% of your course grade.

Reading quizzes: For 9 of the reading assignments (indicated with ♦ in the course schedule), there will be short quizzes (approximately 5 questions per quiz, multiple choice and true/false). The goal of these quizzes is to help you read in an active, engaged way, and to encourage you to come to class with a firm grasp of the facts and arguments presented in the readings. Each reading quiz will be delivered via Canvas and will come due before the start of the class meeting when we will be discussing the reading assignment. You will have two attempts for each quiz before the deadline, of which I will count your higher score. Your 5 highest reading quiz assignments will be counted (which means you can miss up to 4 reading quizzes without penalty – though I encourage you to take more reading quizzes to get feedback on how well you have understood the readings). Taken together, the reading quizzes will count for 10% of your course grade.

Research reports: Over the course of the term, each student will locate two articles on a topic relevant to the class and report to the class (via our online discussion board) on each of these articles. One article must be from the popular press and the other must be from the scholarly scientific press. The research report (of approximately 600 words) should highlight the assumptions the article makes about science and the norms these assumptions reflect. The two research reports will count for 10% of your course grade.

Review of an ethics training module: Each student will complete an ethics training activity or module (such as ORI’s interactive movie “The Lab” or a CITI training module accessed through SJSU’s institutional subscription) and write a reflective essay (of approximately 600 words) about this experience. The review of an ethics training module will count for 10% of your course grade. *Submitting this review **before the last class meeting will earn extra credit points towards your final grade, as indicated in the course schedule.***

Manifesto: To explore the issues we will be discussing in this course, you will write a “manifesto” where you articulate and defend your own view about what is involved in being an ethical scientist in the world and about why it matters. In addition to setting out your own view, your manifesto will engage with readings assigned in this course. The manifesto should be 750-1000 words. A draft-for-review is due on March 25. The final version of the manifesto, revised to respond to feedback, is due on May 4. Manifestoes will be assessed for correctness, clarity, and conciseness. You are encouraged to make use of the tutors in the Logic and Philosophy Lab (FOB 231) for additional help with writing for this course. The manifesto draft-for-review will count for 5% of your course grade. The final version of your manifesto will count for 10% of your course grade.

Final exam: The final exam is intended to evaluate your grasp of the material from assigned readings, lectures, and class discussions. It will include shorter objective items (e.g., definitions of key terms) and longer essays that will require that you reflect critically on the course material. More details on the format and content of the exam will be distributed later in the term. The final exam will count for 15% of the course grade.

Class participation: Dialogue and discussion are central to learning philosophy. Class participation presupposes attendance. Generally, students who miss more than three weeks of class are unlikely to be able to earn sufficient class participation credit to receive a passing participation grade. I expect that you will come to class having done the readings and thought about the issues they raise before our class meetings, and ready to participate in general discussion, in-class writing exercises, and periodic small group exercises. Your class participation will count for 10% of your course grade.

Grading Information

Course ground rules agreement:	2%
Quiz: Understanding (and avoiding) plagiarism:	2%
Quiz: Basic concepts and background information for case studies:	2%
Case study initial responses:	12%
Case study quizzes:	12%
Reading quizzes:	10%
Research reports:	10%
Review of an ethics training module:	10%
Manifesto (draft-for-review):	5%
Manifesto (revised):	10%
Final exam:	15%
<u>Class participation:</u>	<u>10%</u>
Total:	100%

Your marks on assignments will be converted to percentages (e.g., 15/20 = 75%) and used to compute letter grades as follows:

<i>Grade</i>	<i>Points</i>	<i>Percentage</i>
<i>A plus</i>	<i>960 to 1000</i>	<i>96 to 100%</i>
<i>A</i>	<i>930 to 959</i>	<i>93 to 95%</i>
<i>A minus</i>	<i>900 to 929</i>	<i>90 to 92%</i>
<i>B plus</i>	<i>860 to 899</i>	<i>86 to 89 %</i>
<i>B</i>	<i>830 to 859</i>	<i>83 to 85%</i>
<i>B minus</i>	<i>800 to 829</i>	<i>80 to 82%</i>

<i>Grade</i>	<i>Points</i>	<i>Percentage</i>
<i>C plus</i>	<i>760 to 799</i>	<i>76 to 79%</i>
<i>C</i>	<i>730 to 759</i>	<i>73 to 75%</i>
<i>C minus</i>	<i>700 to 729</i>	<i>70 to 72%</i>
<i>D plus</i>	<i>660 to 699</i>	<i>66 to 69%</i>
<i>D</i>	<i>630 to 659</i>	<i>63 to 65%</i>
<i>D minus</i>	<i>600 to 629</i>	<i>60 to 62%</i>

Passage of the Writing Skills Test (WST) or ENGL/LLD 100A with a C or better (C- not accepted), and completion of Core General Education are prerequisite to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended. A minimum aggregate GPA of 2.0 in GE Areas R, S, & V shall be required of all students.

Classroom Protocol

1. Treat class meetings as a serious commitment. When you are not in class, you miss material, and we miss your questions and comments.
2. Being in class means more than just being a warm body in a chair. Prepare for class by doing assigned readings, thinking hard about this reading, and making a list of questions you have about them or issues you hope to clarify in class. Bring your books with you to class. Participate in class by listening to the lecture, listening to your classmates, taking notes, asking questions, answering questions, participating fully in any class activities, and thinking.
3. Arrive and be ready to go by the official start time, and stay until the conclusion of the class meeting. Wandering in (or out) partway through disrupts the flow of the class. Budget extra time for parking if you need to!
4. If at all possible, don't schedule appointments (medical check-ups, job interviews, club meetings, etc.) during class time.
5. Turn OFF your cell phone during class time. Don't use your laptop for non-class-related purposes during our class meeting.
6. If you must miss class, it is YOUR responsibility to make up the material you missed. Ask a classmate if you may copy their notes.
7. If you miss class on a day when an assignment is due, it is still YOUR responsibility to make sure the assignment is turned in to me by class time.

University Policies

Per [University Policy S16-9](http://www.sjsu.edu/senate/docs/S16-9.pdf) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant information to all courses, such as academic integrity, accommodations, dropping and adding, consent for recording of class, etc. is available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>. **Make sure to visit this page, review and be familiar with these university policies and resources.**

PHIL 133, Ethics in Science, Spring 2020 Course Schedule

This schedule is subject to change with fair notice (i.e., by announcement in class and via MySJSU email messaging).

Course Schedule

Class	Date	Topics, Readings, Assignments, Deadlines
1	27 January.	INTRODUCTORY REMARKS <i>Distributed in class/online:</i> Kenneth D. Pimple, "The ten most important things to know about research ethics" Muriel J. Bebeau, "Developing a Well-Reasoned Response to a Moral Problem in Scientific Research" Case Study: "The Jessica Banks Case"
2	29 January.	HOW DOES SCIENCE WORK? WHAT DOES SCIENCE DO? On Being a Scientist (WWW only; not in printed Course Reader) Peter Godfrey-Smith, Merton's norms of science (CR) The Story Collider podcast, "Cather Simpson: The Bright Light of Fame" (CR) <i>Recommended:</i> Fred Grinnell, "Doing Science" (CR)
3	3 February.	ETHICAL FRAMEWORKS Aristotle, "Happiness, Function, and Virtue" (CR) Immanuel Kant, "Good Will, Duty, and the Categorical Imperative" (CR) John Stuart Mill, "Utilitarianism" (CR) Entry on "relativism" (CR)
4	5 February.	CASE: DIEDERIK STAPEL Yudhijit Bhattacharjee, "The Mind of a Con Man" (CR) Mieke Verfaellie and Jenna McGwin, "The Case of Diederik Stapel" (CR)

5	10 February.	<p>WHAT SCIENCE OWES TO SOCIETY (AND WHY)</p> <p>Kristin Shrader-Frechette, <i>Ethics of Scientific Research</i>: Chapter 2, "Professional Codes and the Duty to Do Scientific Research" (CR) ♦ Chapter 4, "Basic Principles: Promoting the Public Good" (CR)</p>
6	12 February.	<p>IS KNOWLEDGE-BUILDING ALWAYS A GOOD THING?</p> <p>Philip Kitcher, "Subversive Truth and Ideals of Progress" (CR) Khor Kok Peng, "Science and Development: Underdeveloping the Third World" (CR) Michael Dummett, excerpt from "Ought Research to be Unrestricted?" (CR) Trisha Kehaulani Watson-Sproat, "Why Native Hawaiians are fighting to protect Maunakea from a telescope." (CR) Janet D. Stemwedel, "The Thirty Meter Telescope Reveals Ethical Challenges for the Astronomy Community" (CR)</p> <p>Course ground rules agreement due.</p> <p>Quizzes ("Understanding & avoiding plagiarism" and "Basic concepts & background for case studies") due on Canvas by 11:59 PM Friday, 14 February.</p>
7	17 February.	<p>DATA MANAGEMENT</p> <p>Donald L. Pavia, Gary M. Lampman, and George S. Kriz, Jr., "Advance Preparation and Laboratory Records" (CR) Barbara Mishkin, "Urgently Needed: Policies on Access to Data by Erstwhile Collaborators" (CR) Daniel J. Kevles, "The Assault on David Baltimore" (CR) John Dingell, "The Elusive Truths of the Baltimore Case" (CR) Open Notebook Science Network, "What is Open Notebook Science?" and "Why Should You Keep an Open Notebook?"</p> <p>Review of Ethics Training Module due-date #1 (worth 24 extra credit points)</p>
8	19 February.	<p>THE PROBLEM OF OBJECTIVITY (PART I)</p> <p>Bruce Bower, "Objective Visions: Historians track the rise and times of scientific objectivity" (CR) Helen Longino, "Values and Objectivity" (CR) ♦ Alison Coil, "Why Men Don't Believe the Data on Gender Bias in Science" (CR) <i>Recommended:</i> Helen Longino, "Gender and Racial Biases in Scientific Research" (CR)</p>

9	24 February.	<p>THE PROBLEM OF OBJECTIVITY (PART II)</p> <p>National Academy of Sciences, "Methods and Values in Science" (CR) Pamela J. Asquith, "Japanese Science and Western Hegemonies: Primatology and the Limits Set to Questions" (CR) ♦</p> <p><i>Recommended:</i> Donna Haraway, "The Bio-politics of a Multicultural Field" (CR) <i>Recommended:</i> Vandana Shiva, "Modern science as patriarchy's project" (CR) <i>Recommended:</i> Chanda Prescod-Weinstein, "Making black women scientists under white empiricism: The racialization of epistemology in physics" (CR)</p> <p>Upload initial response to Case Study 1 by 11:59 pm Tuesday, 25 February.</p>
10	26 February.	<p>CASE STUDY 1 (part 2)</p> <p><i>Class will meet online.</i></p> <p>Participate in required discussion of Case Study 1 on Canvas. Case 1 Quiz due on Canvas by 11:59 pm Friday, 28 February.</p>
11	2 March.	<p>CASE: AMY CUDDY</p> <p>Susan Dominus, "When the Revolution Came for Amy Cuddy" (CR)</p> <p><i>Recommended:</i> Daniel Engber, "The Trials of Amy Cuddy" (CR)</p> <p>Review of Ethics Training Module due-date #2 (worth 18 extra credit points)</p>
12	4 March.	<p>ANIMAL RESEARCH</p> <p>Flash Forward podcast, "Bodies: This is not a test" (CR) Speaking of Research, "The Animal Model" (CR) ♦ Speaking of Research, "Animal Welfare and the 3 Rs" (CR) ♦ David Grimm, "Opening the Lab Door" (CR) David Grimm, "The Insurgent" (CR)</p> <p><i>Recommended:</i> Janet D. Stemwedel, "Impediments to Dialogue about Animal Research" (CR)</p>

13	9 March.	<p>HUMAN SUBJECT RESEARCH: HISTORY</p> <p>The Holocaust Encyclopedia, “Nazi Medical Experiments” (CR) Eva Mozes-Kor, “The Mengele Twins and Human Experimentation: A Personal Account” (CR) John C. Fletcher, "A Case Study in Historical Relativism: The Tuskegee (Public Health Service) Syphilis Study" (CR) Evelynn M. Hammonds, “Your Silence Will Not Protect You: Nurse Rivers and the Tuskegee Syphilis Study” (CR) Charles C. Mann, "Radiation: Balancing the Record" (E&S)</p> <p><i>Recommended:</i> Telford Taylor, "Opening Statement of the Prosecution, December 9, 1946," "Judgment and Aftermath" (CR)</p>
14	11 March.	<p>HUMAN SUBJECT RESEARCH: REGULATIONS AND THE SHIFTING INTERPRETATION OF "JUSTICE"</p> <p>The Nuremberg Code (E&S) World Medical Association Declaration of Helsinki, 1989 Version (E&S) The Belmont Report (WWW only; not in printed Course Reader) Carl Elliott, “Guinea-Pigging” (CR) ♦</p> <p><i>Recommended:</i> Wendy K. Mariner, "AIDS Research and the Nuremberg Code" (CR)</p>
15	16 March.	<p>Case Study 2</p>
16	18 March.	<p>HUMAN SUBJECT RESEARCH: GLOBAL ISSUES</p> <p>Marcia Angell, "The Ethics of Clinical Research in the Third World" (CR) Harold Varmus and David Satcher, "Ethical Complexities of Conducting Research in Developing Countries" (CR) Janet D. Stemwedel, “Research with Vulnerable Populations: Considering the Bucharest Early Intervention Project” (CR) Kelly Hills and Nicholas Evans, “Paternalism, Procedure, Precedent: The Ethics of Using Unproven Therapies in an Ebola Outbreak” (CR) ♦</p> <p><i>Recommended:</i> E. Emanuel, "Fair Benefits for Research in Developing Countries" (CR)</p> <p><i>Friday 20 March: Last day to post research report #1 on Canvas</i></p>

17	23 March.	<p>CASE: THERANOS</p> <p>John Carreyrou, "A New Look Inside Theranos' Dysfunctional Corporate Culture" (CR) The Dropout podcast: "The Whistleblower" (CR) John P. A. Ioannidis, "Stealth Research and Theranos: Reflections and Update 1 Year Later"</p> <p>Review of Ethics Training Module due-date #3 (worth 12 extra credit points)</p>
18	25 March.	<p>SCIENTIFIC PAPERS, AUTHORSHIP ISSUES, AND PEER REVIEW</p> <p>Stephanie J. Bird and David E. Housman, "Reporting and Funding Research" (E&S) Patricia K. Woolf, "Pressure to Publish and Fraud in Research" (E&S) International Committee of Medical Journal Editors, "Guidelines on Authorship" (E&S) Ivan Amato, "Rustum Roy: PR Is a Better System Than Peer Review" (E&S) Charles W. McCutchen, "Peer Review: Treacherous Servant, Disastrous Master" (E&S)</p> <p><i>Recommended:</i> Christine Wennerås and Agnes Wold, "Nepotism and sexism in peer-review" (CR) <i>Recommended:</i> Carlos Galindo-Leal, "Explicit Authorship" (CR)</p> <p>Manifesto (draft-for-review) due.</p>
19	6 April.	<p>PATENTS, INTELLECTUAL PROPERTY, AND OPEN SCIENCE</p> <p>Vandana Shiva, "The Role of Patents in History" (CR) Vandana Shiva, "The Myth of Patents" (CR) Vandana Shiva, "Biopiracy" (CR) Open Notebook Science Network, "Intellectual Property and Open Notebook Science"</p> <p><i>Class will meet online.</i></p>
20	8 April.	<p>SCIENTIFIC COMMUNICATION ACROSS HIERARCHIES & CULTURES</p> <p>Sharon Traweek, "Kokusaika, Gaiatsu, and Bachigai: Japanese Physicists' Strategies for Moving into the International Political Economy of Science" (CR) Sharon Traweek, "Border Crossings: Narrative Strategies in Science Studies and among Physicists in Tsukuba Science City, Japan" (CR) ♦</p> <p><i>Class will meet online.</i></p>

21	13 April.	Case Study 3
22	15 April.	CASE: SASAI & OBOKATA Dana Goodyear, "The Stress Test" (CR) David Cyranoski, "Stem-cell pioneer blamed media 'bashing' in suicide note" (CR)
23	20 April.	SCIENTIFIC COMMUNICATION TO PUBLICS Edward S. Herman, "Corporate Junk Science in the Media" (CR) Mark Dowie, "What's Wrong with the New York Times's Science Reporting?" (CR) Matt Shipman, "Why Reporters Don't Let Scientists Review Their Stories" (CR) <i>Recommended:</i> Janet D. Stemwedel, "#overlyhonestmethods: Ethical implications when scientists joke with each other on public social media" (CR) Review of Ethics Training Module due-date #4 (worth 6 extra credit points)
24	22 April.	RELATIONSHIPS AND RESEARCH ENVIRONMENTS Vivian Weil and Robert Arzebaecher, "Relationships in Laboratories and Research Communities" (E&S) <i>Recommended:</i> Steven Fuller, "How Japan Taught the West the Secret of Its Own Success" (CR)
25	27 April.	MENTORING ISSUES Vivian Weil, "Mentoring: Some Ethical Considerations" (CR) Carl Djerassi, <i>Cantor's Dilemma</i> ♦
26	29 April.	COLLABORATIONS AND CONFLICTS OF INTEREST Francis L. Macrina, "Collaborative Research" (CR) David Blumenthal, "Academic-Industrial Relationships in the Life Sciences" (CR) Annetine C. Gelijns and Samuel O. Thier, "Medical Innovation and Institutional Interdependence: Rethinking University-Industry Connections" (CR) <i>Friday 1 May: Last day to post research report #2 on Canvas</i>

27	4 May.	<p>CASE: THE UW-MADISON WHISTLEBLOWERS</p> <p>Jennifer Couzin, "Truth and Consequences" (CR)</p> <p>Revised Manifesto due.</p>
28	6 May.	<p>MISTAKES AND MISCONDUCT</p> <p>D. E. Buzzelli, "The Definition of Misconduct in Science: A View from NSF" (E&S) ♦</p> <p>W. Leibel, "When Scientists are Wrong: Admitting Inadvertent Error in Research" (CR)</p> <p>Charles J. List, "Scientific Fraud: Social Deviance or Failure of Virtue?" (CR)</p> <p>Michael J. Zigmund and Beth A. Fischer, "Beyond fabrication and plagiarism: The little murders of everyday science" (CR)</p> <p><i>Recommended:</i> C.K. Gunsalus, "How to Blow the Whistle and Still Have a Career Afterwards" (CR)</p> <p><i>Recommended:</i> Howard K. Schachman, "What is Misconduct in Science?" (E&S)</p> <p><i>Recommended:</i> David Goodstein, "Scientific Fraud" (CR)</p> <p><i>Recommended:</i> Janet D. Stemwedel, "Life after Misconduct: Promoting Rehabilitation while Minimizing Damage" (CR)</p>
29	11 May.	<p>TAKING STOCK</p> <p>Last chance to submit Review of Ethics Training Module</p>
Final	18 May.	12:15 pm – 2:30 pm in BBC 222