

**Bioethics in the 21st Century**  
**Philosophy 80G / Biomolecular Engineering 80G Summer 2015**

**Instructors:**

**Dr. Sandra Dreisbach, dreisbach@soe.ucsc.edu**

Office Hours: By appointment and after class

**Logan Mulroney: lmulrone@soe.ucsc.edu**

Office Hours: By appointment and after class

**Class schedule:** Tuesday Thursday, 9:00-12:30 am,

**Course Goals & Structure:**

*Bioethics in the 21st Century* aims to give students a rigorous foundation for understanding the scientific and ethical issues raised by biotechnology. This course is designed to meet general education requirements, and will serve both science majors and non-science majors at all levels of experience. Interaction among students and faculty from both the humanities and the sciences is one of the strengths of this course.

A typical week will be as follows. Once a week a guest speaker will present a one-hour seminar in a specific area of science, business, or ethics. The speaker will teach from his or her background, particularly focusing on experiences related to the ethical questions addressed by the course. This one-hour talk will be followed by a discussion with the guest speaker. Attendance during the discussion is mandatory, and active student participation will be expected. For regular class lectures, the instructor from the Philosophy Department will lecture on the ethical issues raised by that speaker's topic, and the instructor from the Biomolecular Engineering Department will lecture on the basic science needed to understand the next expert presentation.

**Required Readings:**

**Rachels, James; The Elements of Moral Philosophy, 6th or 7th Ed.**

**Skloot, Rebecca; The Immortal Life of Henrietta Lacks**

**Weston, Anthony; A Rulebook for Arguments, 4th Ed.**

**eCommons: Online Readings and Multimedia Assigned Regularly**

The books are available at the UCSC bookstore and are all available as ebooks.

Additional required readings and multimedia materials will be distributed via eCommons.

**eCommons:** The day-to-day functioning of this course will rely heavily on eCommons (ecommons.ucsc.edu), including the schedule of speakers, downloading required and suggested readings or online videos, distribution of the weekly assignments, and lecture slides. eCommons can be accessed at the above address or via your my.ucsc.edu page.

You must check eCommons regularly for new assignments and course information, meaning at least several times a week. You may also need to print some readings in order to discuss them closely in class.

If you have any trouble with eCommons, you are expected to ask for help from Dr. Dreisbach, Logan Mulroney, and/or campus technical support. Please note that in order for eCommons to function, your web browser must be supported and configured

correctly, instructions for which are available at the above site. If you are already enrolled, eCommons will recognize you as such. If you are wait-listed or adding to the class, send an email to Dr. Dreisbach to be added as an auditor until you become officially enrolled.

Readings and assignments are due on the day listed in the calendar function of eCommons.

**Disability Resource Center:** If you qualify for classroom accommodations because of a disability, please submit your Accommodation Authorization from the Disability Resource Center (DRC) to one of the instructors in a timely manner, preferably within the first week. Contact the DRC at 459-2089 (voice), 459-4806 (TTY).

**Counseling and Psychological Services:** All currently enrolled undergraduate and graduate students at the University of California at Santa Cruz are eligible to utilize on campus counseling services. Situational and developmental problems frequently interfere with academic performance. Please make use of the campus resources available to support you. Services are confidential.

Counseling and Psychological Services (831) 459-2628

<http://caps.ucsc.edu/counseling/index.html>

**Academic Misconduct:** By enrolling in the University, students are automatically agreeing to abide by University policies, including those on academic misconduct. Academic integrity and scholarship are core values that should guide our conduct and decisions as members of the UCSC community. Plagiarism and cheating contradict these values, and as such are very serious academic offenses. Penalties can include a failing grade in an assignment or in the course, and/or suspension or expulsion from the university. Students are expected to familiarize themselves with and follow citation practices. The instructors in this course will pursue disciplinary action in all instances of academic misconduct.

### **Student Evaluation:**

**10% QUIZZES (Five Quizzes, 2% Each)**

**30% FINAL EXAM**

**30% SHORT PAPERS (Three Papers out of Eight Topic Assignments, 10% Each)**

**10% RESEARCH PAPER**

**10% DISCUSSION (Attendance and Participation)**

**10% GROUP PRESENTATIONS and RESEARCH**

**Research Paper:** This summer you will be working with the UCSC iGEM team to explore different ethical implications of the research being done by undergraduates on campus. Over the duration of the course you will meet and discuss one particular topic with a student researcher and document your discoveries in the form of a 3-5 page research paper. You will be working in a group, but EACH STUDENT MUST SUBMIT THEIR OWN PAPER.

**Group Presentations and Research:** At the end of the course each group will submit and present their findings from their iGEM research team. Group presentations will be 8-10 minutes long with 2 minutes for questions afterwards. The presentations should summarize the scientific topic, discuss the ethical implications, and conclude with an ethical justification of the permissibility of the topic.

**Final Exam:** The Final Exam will be part multiple-choice and part short-essays and/or long-essays. You will need to bring a Scantron and Blue Book for the Final Exam. If you have a known scheduling conflict with the Final Examination date, you must inform Dr. Dreisbach or Logan Mulroney by Thursday, July 29<sup>th</sup> to make alternative arrangements.

Otherwise, absence from the Final Exam will be granted for medical or family emergencies only. An incomplete grade or an opportunity to make-up the points will be assigned to the student at the instructors' discretion. Excused absences will not be granted for non-emergency reasons.

**Short Papers:** Each student is responsible for THREE out of NINE paper topic assignments mostly short 2-3 page essays, due Tuesday at the very beginning of class by 9:05 AM. The new assignments will be posted on eCommons on the Tuesday prior to the due date. Do not come to class late and expect to turn in your assignment. Assignments will NOT be accepted late NO EXCEPTIONS! If you run into serious last minute problems or are ill, you can email your assignment to Logan Mulroney BEFORE the 9:05 AM deadline but you must still submit a hard copy as well before the next class meeting. Any late assignment will be entered as a '0' assignment grade. Students can ONLY hand in three paper assignments.

**Quizzes:** Five quizzes will be given in eCommons throughout the Term and can be on assigned class readings due that day, on the last guest lecturer, or previous class lectures. Quizzes will be very short and can be multiple choice, short answer, or fill-in-the-blank.

**Discussion Section:** In the discussion section of class after guest lecture and/or class lectures, students will more fully explore the issues covered in lecture and in the readings.

This course relies heavily on discussion, and attendance at discussion section is MANDATORY. Discussion grades will be assigned based on attendance record and quality of participation. *Students who miss two or more discussion sections of class will fail the course.*

## **Overview of Course Schedule**

**\*\*Final Readings, Speakers, Topics and Order are all subject to change due to the nature of having several guest speakers for the course\*\***

As such, this is an overview of main topics and deadlines and **NOT** the final list of classes, assignments and deadlines. Check eCommons calendar for current schedule.

**Tuesday, July 28rd:** Class Lecture – *Introduction to Ethics & Cell Biology*, Reading: *Elements of Moral Philosophy*

**Thursday, July 30th:** Class Lecture – *DNA Sequencing & Ethical Theory*, Guest Lecture – *iGEM* (David Bernick); QUIZ 1, *Paper #1: Topics Assigned*

**Tuesday, August 4th:** Class Lecture – *Ethical Responsibility & Cancer Biology*, Guest Lecture – *DNA Forensics* (Mark Akeson), *Paper #1: DUE*, QUIZ 2

**Thursday, August 6th:** Class Lecture – *Scientific Misconduct & Philosophy of Science*, Reading: *Immortal Life of Henrietta Lacks*, *Paper #2: Topics Assigned*, QUIZ 3

**Tuesday, August 11th:** Class Lecture – *Informed Consent & Genetic Engineering*, Guest Lecture – *Neanderthal Genomics* (Ed Green), *Paper #2: DUE*,

**Thursday, August 13th:** Class Lecture – *Stem Cells & Moral Personhood*, *Paper #3: Topics Assigned*, QUIZ 4

**Tuesday, August 18th:** Class Lecture – TBD, Guest Lecture – *Dual Use Research* (Rebecca DuBois), *Paper #3: DUE*

**Thursday, August 20th:** Class Lecture – *Course Wrap-up*, Research Abstracts *DUE*, QUIZ 5

**Tuesday, August 25th:** Guest Lecture – *HeLa Stem Cells* (David Bernick), Presentations, *Research Paper DUE*

**Thursday, August 27th: FINAL EXAM**