AGSC 415/615 ETHICS AND ECONOMICS OF BIOTECHNOLOGY

Instructor: Dr. Talline R. Martins
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  Office hours TBA

Location/time: Room TBA; Mondays 1 pm - 3:35 pm

A. Course Description, Objectives, and Requirements

This course is for graduate students and upper-level undergraduates. It is an in-depth study of a selection of ethical issues relating to biotechnology. We will examine issues from a scientific, ethical, political, and economical perspective. We will explore these issues through discussions that are rigorous, nuanced, and unbiased. Class time will consist of short lectures, long discussions, and frequent group work on case studies.

Prerequisites: ENG 102 and junior or senior standing; Recommended: BIOL 190/191, ECON 102

This course satisfies both the Capstone and Ethics Silver Core Objectives:

Core Objective 12 (Ethics): Students will demonstrate understanding of the ethical principles in general or in application of specialized knowledge, results of research, creative expression, or design processes. Students will demonstrate an ability to recognize, articulate, and apply ethical principles in various academic, professional, social, and personal contexts.

Core Objective 13 (Integration and Synthesis): Students will be able to integrate and synthesize Core knowledge, enabling them to analyze open-ended problems or complex issues.

The learning outcomes for the course are for students to be able to:

1. Improve ability to think critically about, reflect on, and discuss the ethical issues surrounding biotechnology. Students will be evaluated on their ability to address ethical issues in biotechnology through participation in discussion and completion of case studies (CO12).
2. Appreciate opposing viewpoints and nuances surrounding controversial ethical questions. Students will learn about different perspectives of complex issues during in class discussions (CO12).
3. Analyze the main arguments, pro and con, for the different technologies presented. This objective integrates CO1 and CO3: Students will learn how to analyze complex issues from different angles and provide a recommendation while working on case studies (CO 13).
4. Integrate the discussion of science, ethics, and political philosophy to formulate arguments for or against specific applications of biotechnology. This objective integrates CO1 and CO3: Students will be evaluated in the synthesis and integration of complex information through position papers (CO 13).

Expectations

This is an upper-level, capstone course. As such, students are expected to have an active role in the learning process. This includes doing all the reading assignments, actively participating in
discussions, and asking questions when something is unclear. It also includes respecting fellow students by arriving on time, being courteous, and not engaging in disruptive behaviors. No cell phones are to be used during class time, no exceptions! Tablets and laptops are permitted solely for taking notes (not for internet surfing, videos, games, etc).

Requirements

1. Read all assignments. Read them carefully and critically. You will be required to submit a 200 (undergraduate) or 400 (graduate) word reflection on each reading assignment before the class when the reading will be discussed. Reflections are due by 11:59 pm (PST) the day before class. Reflections are worth 20% of your grade.

2. Attend all classes. In addition to being expected to show familiarity with the class discussion, class participation will count for 20% of your grade. Each graduate student will have to lead one paper discussion during the semester.

3. Case studies. Some lectures will include case studies that will be done individually and in small groups. These will account for 20% of your grade.

4. Position paper: this will be a 1500 (undergraduate) or 2500 (graduate) word paper, on the topic of your choosing. In a position paper, the author discusses both sides of an issue and defends one side. Although the graduate student papers are not substantially longer than the undergraduate papers, I will hold them to higher standards of clarity, rigor, and conciseness. This assignment is worth 40% of your grade.

B. Accommodation, Diversity, and Academic Dishonesty

Accommodation: Your success in this class is important. If you have a disability or particular circumstance that may have an impact upon your work in this class, please contact me as soon as possible so that we can work together to adapt assignments to meet your needs and the requirements of the course. Any student with a disability needing academic adjustments or accommodations is also requested to speak the Disability Resource Center (Thompson Building Suite 100) as soon as possible to arrange for appropriate accommodations.

Diversity: In order to learn, we must be open to the views of people different than ourselves. Each and every voice in the classroom is important and brings with it a wealth of experiences, values and beliefs. In this time we share together over the semester, please honor the uniqueness of your fellow classmates, and appreciate the opportunity we have to learn from each other. Please respect your fellow students’ opinions and refrain from personal attacks or demeaning comments of any kind. Finally, remember to keep confidential all issues of a personal or professional nature that are discussed in class.

Academic Dishonesty: Academic dishonesty (e.g., cheating on exams, plagiarism) is a serious offense. All work that you submit in this class must be your own. Each student is responsible for being familiar with UNR's policies on academic dishonesty. Any student engaging in academic dishonesty in this course will receive a 0 on the exam/assignment in question. In more severe cases, e.g., extensive plagiarism of other people's work, the case may be turned over for prosecution by the proper university authorities.

C. Course Materials
The readings for each class will be posted on Webcampus. The following books are recommended:

*The Elements of Style*, by William Strunk and E. B. White  
*A Rulebook for Arguments*, by Anthony Weston

**D. Course Schedule**

August 24  Course Overview, Terminology, History of Biotechnology  
August 31  Science as a Social System. Laboratory Practice, Credit, Tacit Knowledge and Replication  
September 7  *Labor Day, no class*  
September 14  Recombinant DNA: Techniques and “Naturalness”  
September 21  The Asilomar Legacy, Biosafety and Biosecurity  
September 28  Plant Biotechnology: Environmental Ethics and GM Crops  
October 5  Plant Biotechnology: Labeling and the Role of Public Opinion  
October 12  Plant biotechnology: Humanitarian Concerns  
October 19  Animal Biotechnology  
October 26  Eco-sabotage  
November 2  Gene Patents  
November 9  Genetic Testing and Personal Genomics  
November 16  Human Biotechnology: Stem Cell Research  
November 23  Industry-Academic Relationships and Corporate Influence  
November 30  Controversies in the Life Sciences: Metaphors, Myths, and Social Constructs  
December 7  Class wrap-up and reflections