Honors 250 / BIOL 260: Ethical Issues in Biotechnology  

Instructor: Dr. Karen Guzman  
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* Times will be announced during the first class and posted on my office door. If modifications are necessary, they will usually be announced in class and posted on my door. Please inquire about availability outside of scheduled hours.

COURSE DESCRIPTION:

At times, as we embark on new areas of scientific research and as we face breakthroughs in technology, we ask two important questions: Can we? Should we? Yet we sometimes fail to consider if we can really ask the latter question if we do not understand what scientists and medical practitioners are doing? An example of this is that many politicians will be against the use of human embryonic stem cells but be for in vitro fertilization, yet at their core, they have the same ethical basis. Are we fooling ourselves and instead of taking a stand for moral issues, are we just being swayed by what is considered politically correct? Unless we understand the underlying principles, we will be incapable of making informed decisions. In this course, we will explore together some of these important issues that are increasingly facing society in this post-genomic era as biotechnology is used to develop a wide variety of technologies and treatments that not only push the frontiers of science and medicine, but beg the question, “Who are we?”

In this course, we will discuss a variety of areas of biotechnology that have ethical implications. You will be encouraged to evaluate the topics from various perspectives and you will assess the implications and ramifications of the biology, ethics, economics, social issues, etc. Many of the topics have implications for the environment and human health.

This course supports the mission of Campbell University “to graduate students with exemplary academic and professional skills who are prepared for purposeful lives and meaningful service” and “embraces the conviction that there is no conflict between the life of faith and the life of inquiry.” The course also specifically supports the following points that are excerpts from Campbell’s mission statement:

- “affirms that truth is revelatory and transcendent as well as empirical and rational, …; (II)
- influences development of moral courage, social sensitivity, and ethical responsibility; (III)
- delivers academic instruction in the liberal arts and sciences and professional preparation at both undergraduate and graduate levels; (V)
- transfers to students the vast body of knowledge and values accumulated over the ages (VI)
- encourages students to think critically and creatively; (VII)
- fosters the development of intellectual vitality, …; (VIII)”

COURSE PREREQUISITE: BIOL 111 or BIOL 101 or permission of instructor is required

Disclaimer: Although I do not anticipate the need to do so, I reserve the right to amend any part of the syllabus during the course if necessary. Any changes will be announced in class.
RESOURCES & SUPPLIES:
Additional resources and required readings may be made available (on my website, Blackboard, Google Drive, or another repository).
USB storage device. For example: 8 GB Hi-Speed USB 2.0 Mini Flash Drive

COURSE LEARNING OBJECTIVES:
The objective of this course is to familiarize you with a variety of technologies in biotechnology and to give you experience evaluated the ethical and social implications of these technologies. By the end of the course, you should understand how to analyze biotechnologies to better understand the inherent issues and to be able to separate analysis of the issues from the extensive sensationalism encountered in the media, which often creates an emotional, rather than a logical and thoughtful, response. Specific learning outcomes are listed in a separate section below.

SPECIFIC LEARNING OUTCOMES*:
1. Develop a basic understanding of how to identify the various issues (biological, ethical, social, etc.) associated with biotechnology. (I.3, III 1.1-2)
2. Improve skills to search for library resources relevant to their topic. (VI 2.1)
3. Develop the ability to approach and consider problems from multiple perspectives. (I.3, III 1.1-2, III 2.1-3)
4. Develop basic skills for reading and interpreting literature resources in science and the humanities. (I.1, III 1.1-2, III 2.1-3)
5. Improve oral and written skills for presenting the issues, analyses and conclusions. (IV 1.1-2, 4-5, IV 3.2)
6. Develop skills to prepare a Powerpoint presentation. (IV 1.6, VI 3.1)
7. Improve skills to ask questions of, or provide constructive comments to, presenters (III 3.1-2)
8. Improve ability to provide constructive editorial comments. (I.3, III 3.1-2, IV 1.4)
* Numerals in italics refer to the corresponding General Education Outcomes

COURSE EVALUATION:
Evaluation will be based on:
Oral and written presentations (45%), including (but not limited to) a chapter of The Strongest Boy…, a mini topic, and a final group project
Participation, Assignments, Quizzes & Topic submissions (35%)
Final Exam Evaluation & Editorial work (20%)
COURSE RELATED RESOURCES:

*Online Resources:*
Various online study resources may be available on my website, Blackboard or Google Drive. The website will act as a primary point of entry, and will indicate where to locate the various resources. Be sure to type in the https:// because without this, it will not properly redirect. Some resources may be password protected, so be sure to listen in class for the password or see Dr. Guzman in person. This information will not be distributed via email.

USE OF ELECTRONICS IN THE CLASSROOM

All use of electronic devices must be approved by the instructor before use unless the device is for a class-assigned use. Such devices will include (but are not limited to) items such as computers, iPads, cell phones, tape recorders, etc. Be aware that all class materials, including the lecture, are proprietary and as such are restricted by copyright laws such that distribution to others in any form, whether freely or for sale, could result in a penalty, such as a deduction in your final grade.

ATTENDANCE & MAKE-UP POLICY:

Attendance will be recorded for each class. Since participation is an important component of this course, any class period missed is significant. According to Campbell University policy, students who miss >15% of scheduled class times will receive no credit for the course (a grade of F unless the student has properly withdrawn). Refer to your student handbook for additional details concerning the CU policy.

If you must miss an exam or other type of evaluation for any reason you must notify the instructor immediately: when possible, before the actual absence, but at least by 5 pm the day of the evaluation. Make-ups will only be given for excused absences that are documented and verified.

If you will miss class for a university approved activity (e.g. sports event, concert, etc.) your coach/director must verify the event in writing (e.g. email or memo which includes your name) before the expected absence and you must speak to me the class before the absence to determine if there is any work that must be submitted before the next class period.

INCLEMENT WEATHER:

In general, Campbell University does not close for inclement weather. In the event that weather conditions warrant university-wide class cancellations, a notice will be posted online (www.campbell.edu) and on a telephone line (campus: 5700; local/off-campus: 910-814-5700; long distance: 800-760-8980).

If the university is open, but our class is cancelled, I will send an email to your Campbell email address via Blackboard. **Whether the university is closed or just our class is cancelled, if we miss class due to weather there is likely to be an assignment that may be due at the beginning of the next class so be sure to check your email.** Since I will send a message to the entire class, I will not answer individual emails asking if class is cancelled.
STUDENT SERVICES
A variety of useful services are available through Student Services. Individual links can be found on their website (http://www.campbell.edu/student-services/), but below is a list of some services and who to contact.

Disability Services
Students with documented disabilities who desire modifications or accommodations must contact the Office of Disability Services located in the University’s Student Services Building (between Carter Gym and the Wallace Student Center). No accommodations will be made without approval through this office. A medical, psychological or other diagnosis may rise to the level of a disability if it substantially limits one or more major life functions, one of which is learning. A disability may be temporary or ongoing. Please contact Disability Services for more information if you believe you may need services.

For disability services, contact:
Laura Rich, Director, Disability Services
Student Services Bldg.
910-814-4364, or richl@campbell.edu

CU Writing Center
The CU Writing Center provides support for students at any stage of the writing process. From brainstorming to final revisions, writing coaches can help strengthen your paper. The Writing Center is not a proofreading service, but instead focuses on sharpening your skills as a writer. To get the most from your session, bring your draft early, at least two days before your paper is due. Bring a printed draft and a copy of your assignment. Typical sessions last no more than 20 minutes. The Writing Center is located on the third floor of Wiggins Library and is open Sunday-Thursday, 7-10 p.m.

Success Coaching:
Success coaching provides students with an opportunity to work one-on-one with a peer to further develop skills in note-taking, test taking, time management, and additional areas of concern that could impact their academic abilities. Students that would like to request a success coach or need additional information about this service should visit the Student Success website.

Academic Support:
To aid in student success, Campbell University also aims to provide exceptional academic student support. Academic Support Services offers tutoring, supplemental instruction, coaching and other academic support programs and services to all students. Students are able to request these services through the Student Success website, Starfish or receive a referral from faculty.

For academic support please contact:
Dr. Bernice Alston, Director, Academic Support Services
Student Services Bldg., Rm. 113
910-814-4358 or balston@campbell.edu

Shirley Parker, Assistant Director, Academic Support Services Student
Services Bldg., Rm. 114
910-814-4363 or sparker@campbell.edu

Counseling Services:
All main campus undergraduate students can receive free confidential counseling through Counseling Services. To make an appointment, visit the office located at 233 Leslie Campbell Avenue (brick house beside Memorial Baptist Church and across from Bob Barker Hall) or call 910-814-5709.
INTEGRITY & THE HONOR CODE:
In this course as in other aspects of your Campbell experience, all students are subject to the academic integrity and behavioral expectations of the university. Moreover, in any institution of higher education, honesty is crucial to the educational process. Whether signing the attendance sheet, completing an assignment, or answering questions on an exam, any work that you submit should be your own unless clearly assigned as a group project. Appropriate referencing of the work or words of others is essential. Ignorance is not an acceptable excuse. When in doubt, ask! Some of these issues are not always clearly defined and I will be glad to work through any gray areas with you. Matters of cheating and plagiarism will result in a grade of zero on that assignment or exam and notification of the Dean of Student Life. Additional consequences may include a failing grade in the course and the possibility of expulsion from school. The following excerpts from Campbell’s Code of Ethics are pertinent to this topic:

“The basic principles which guide the development of Christian character and govern Christian behavior are to be found in the Scriptures… The student, by virtue of his enrollment, agrees to abide by the rules and moral precepts which govern the University community…

10. To be honest in all behavior, never cheating, plagiarizing, or knowingly giving false information.

12. To exemplify high principles of honor, integrity, and morality, and to help others fulfill their obligations under this code.”

CLASSROOM CONDUCT:
As both course instructor and student, it is our mutual responsibility to maintain an environment that is conducive to learning. Therefore, I hope that in this class we can agree to display common courtesy, respect and professionalism in our interactions with each other. Such behavior should include, but is not limited to the following:

We will arrive early or on time to class and be prepared to begin at the time designated for the class to begin.

We will not accept or respond to phone calls, text messages, or other electronic messaging during class, unless there is an emergency, but instead will give each other our full attention.

We will attempt to meet our needs for visiting the rest room, getting something to drink, etc. either before or after class.

We will not leave during the class period except for extenuating circumstances such as a medical emergency (e.g. nosebleed, diarrhea, etc.). In the case that we must arrive late to class or leave early, we will make every attempt to inform the other party (i.e. instructor to students or student to instructor) as far in advance as possible.

In the event that we believe that another party has not dealt with us courteously and respectfully, we will attempt to reconcile the situation in an appropriate and respectful manner.

An additional consideration in this class will at times be the sensitivity of the subject matter. I hope that we can create an open and accepting environment where we each can be considerate and open to the opinions of others. Also of importance is that we each participate but do not monopolize the discussion.
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Assignment</th>
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<tbody>
<tr>
<td>W 8/22</td>
<td>Introduction</td>
<td>Select SB chapter</td>
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<tr>
<td>M 8/27</td>
<td>Ethics</td>
<td></td>
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<tr>
<td>W 8/29</td>
<td>Biotechnology</td>
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<tr>
<td>M 9/3</td>
<td>Labor Day Holiday</td>
<td>No Class</td>
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<tr>
<td>W 9/5</td>
<td>CRISPR</td>
<td>Discuss Topic</td>
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<tr>
<td>M 9/10</td>
<td>Tips for Presentations</td>
<td>Article: Omics - DIY Med</td>
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<tr>
<td>W 9/12</td>
<td>SB presentations: Day 1</td>
<td>Articles: Hu Microbiome, Ethical, Legal, Social</td>
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<tr>
<td>M 9/17</td>
<td>SB presentations: Day 2</td>
<td>Article: Synthetic Biology</td>
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<tr>
<td>W 9/19</td>
<td>SB presentations: Day 3</td>
<td>Articles: Flu, Damned if you don’t</td>
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<tr>
<td>M 9/24</td>
<td>SB presentations: Day 4</td>
<td>Article: Designer Babies, 3-way, legal, ethical</td>
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<tr>
<td>W 9/26</td>
<td>Mini Topic Selection</td>
<td>Topic Preferences Survey due by midnight 9/24</td>
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<tr>
<td>M 10/1</td>
<td>Searching the Literature (Guest: Ms. Brooke Taxakis)</td>
<td>Note: Also, continue Mini Topic Selection</td>
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<tr>
<td>W 10/3</td>
<td>Group Work: Topic selection</td>
<td>Preliminary group topic due midnight Fri 10/5</td>
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<td>M 10/8</td>
<td>Group Work</td>
<td>Mini topics due by beginning of class</td>
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<tr>
<td>W 10/10</td>
<td>Group Work</td>
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<tr>
<td>M 10/15</td>
<td>Mini Topics: Day 1</td>
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<tr>
<td>W 10/17</td>
<td>Mini Topics: Day 2</td>
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<td>M 10/22</td>
<td>Mini Topics: Day 3</td>
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<tr>
<td>W 10/24</td>
<td>Mini Topics: Day 4</td>
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<td>M 10/29</td>
<td>Group Work: Project</td>
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<tr>
<td>W 10/31</td>
<td>Group Work</td>
<td>Final group topic due by beginning of class</td>
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<tr>
<td>M 11/5</td>
<td>Group Work</td>
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<tr>
<td>W 11/7</td>
<td>Group Project 1 Presentation</td>
<td>Files due**</td>
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<td>M 11/12</td>
<td>Group Project 2 Presentation</td>
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<tr>
<td>W 11/14</td>
<td>Group Project 3 Presentation</td>
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<tr>
<td>M 11/19</td>
<td>Group Work: Editorial comments</td>
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<tr>
<td>W 11/21</td>
<td>Thanksgiving</td>
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<tr>
<td>M 11/26</td>
<td>Group Work</td>
<td>Editorial Comments due by midnight 11/26</td>
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<tr>
<td>W 11/28</td>
<td>Group Work: Revisions</td>
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<tr>
<td>M 12/3</td>
<td>Conclusions</td>
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<td>T 12/3</td>
<td>TBD</td>
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<tr>
<td>W 12/5</td>
<td>Reading Day</td>
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<tr>
<td>F 12/6</td>
<td>Final Exam</td>
<td>Final Project Paper due</td>
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* This schedule is only meant as a guideline. Because of the nature of the course, dates and details of the schedule may change. Changes will be announced in class. If significant changes are necessary, an updated schedule will be posted.

** Files containing each group presentation must be submitted at least by the end of the class before the presentation will be given.