

GEORGIA INSTITUTE OF TECHNOLOGY
FALL 2008 BIOLOGY 4802-B SYLLABUS
SPECIAL TOPICS: BIOETHICS

Goals: This course will examine the process of scientific inquiry and ethical implications of research in the biological sciences. The goals of the course are: (1) To gain an understanding of basic ethics and its connection to biology. (2) To appreciate the ethical challenges and complexity of issues involved in biological research and public policy. (3) To learn skills in reading, discussing, presenting, and writing about bioethics.

Instructors: Dr. Mirjana Brockett (mirjana.brockett@biology.gatech.edu. 404-385-6885. Cherry Emerson Bldg #323) and Dr. Michael Goodisman (michael.goodisman@biology.gatech.edu. 404-385-6311. Cherry Emerson Bldg #A110) of the School of Biology. Office hours: By appointment.

Class organization: This is a two credit course intended for advanced undergraduates. BIOL 1510 or BIOL 1511 is a prerequisite. Class will be held Friday 12:05 pm – 1:55 pm, August 18 - December 13 in Cherry Emerson #204. This course includes reading assignments, written essays, oral presentations, and group discussion. You may miss one class without a formal excuse, provided that it is not a class in which you are presenting. Written confirmation of a legitimate excuse, such as a severe illness, will be required for any other absences. Your conduct in the course should conform to the Student Honor Code (<http://www.honor.gatech.edu/>).

Required textbooks: K. F. Greif and J. F. Merz. 2007. *Current Controversies in the Biological Sciences: Case Studies of Policy Challenges from New Technologies*. MIT Press, Cambridge, MA. ISBN 978-0262572392. and S. F. Gilbert, A. L. Tyler, and E. J. Zackin. 2005. *Bioethics and the New Embryology: Springboards for Debate*. Sinauer Associates, Sunderland, MA. ISBN 978-0716773450.

Assessments: All students are required to do weekly readings of book chapters. Each student will then turn in a summary of the chapter at the beginning of the class in which the topic is to be discussed. Students will also make one 20 minute oral presentation based on outside readings. Finally, a component of the course grade will consist of class participation. The relative values of the assignments are:

Assessment	Number	Value
Paper Summaries	14	50%
Class Presentation	1	40%
Class Participation	14	10%
Total		100%

The most stringent scale used will be 90-100% an A, 80-89% a B, 70-79% a C, 60-69% a D, and 59% or less an F. This scale is subject to adjustment at the discretion of the instructors.

Tentative Schedule: This schedule is subject to change!

Week	Date	Topic	Reading
1	22-Aug	Introduction	NO READING
2	29-Aug	Ethical theory and principles ¹	Beauchamp et al, Ch 1, pp 1-34
3	5-Sep	The beginning of human life ²	Gilbert et al, Unit 1, pp 1-45
4	12-Sep	Assisted reproductive technologies ¹	Gilbert et al, Unit 2, pp 47-79
5	19-Sep	Choosing the sex of children ²	Gilbert et al, Unit 3, pp 81-108
6	26-Sep	Human cloning ¹	Gilbert et al, Unit 4, pp 109-140
7	3-Oct	Stem cells ¹	Gilbert et al, Unit 5, pp 141-175
8	10-Oct	Genetic modifications ²	Gilbert et al, Unit 6, pp 176-212
9	17-Oct	Ownership of genetic information ²	Greif and Merz, Ch 3, pp 49-76
10	24-Oct	Protecting the public ¹	Greif and Merz, Ch 5, pp 117-147
11	31-Oct	Cosmetic science and the courts ²	Greif and Merz, Ch 6, pp 149-181
12	7-Nov	Selling science ²	Greif and Merz, Ch 7, pp 183-203
13	14-Nov	Concealing scientific evidence ¹	Greif and Merz, Ch 8, pp 205-234
14	21-Nov	Science and national interest ¹	Greif and Merz, Ch 9, pp 235-266
15	28-Nov	HOLIDAY	NO CLASS
16	5-Dec	Environmental dangers ²	Greif and Merz, Ch 11, pp 299-327
17	8-Dec	FINAL EXAMS	NO CLASS

¹Dr. Brockett or ²Dr. Goodisman will act as primary contact for these subjects.

ASSIGNMENT DESCRIPTIONS

Paper Summaries

Each week, you will be required to write a summary of the assigned chapter. The purpose of the summaries is to ensure that you have read and thought about the readings for the week. The summaries will be handed in at the very beginning of class. *If you arrive to class late or are absent then your summary will not be accepted and you will receive no credit.*

The summaries should be typed, single-spaced with one inch margins, written using 11 point Arial font, and not exceed one page. Summaries should address the following issues: (a) what are the underlying questions or problems surrounding the topic as presented in the chapter, (b) why is the topic important (c) what biological or scientific information is relevant to the issues, (d) what are the ethical issues pertaining to the topic, (e) what is your opinion on how the relevant problems should be resolved, (f) what arguments support your ideas, (g) what objections run counter to your views and how would you refute such arguments. *Summary grades will be based on demonstrating that the readings were carefully completed, understanding the biological and ethical topics, providing cogent arguments, and producing proficient writing.*

Class Presentations

The purpose of the class presentations is to present a scientific, peer-reviewed article pertaining to the topic of the week to the class. Each student will be responsible for one class presentation. Presentations should be 20 minutes long and use visual aids (e.g., Microsoft PowerPoint). Articles for presentations should be chosen from the primary literature and must be related to your topic in some way, although the relationship can be rather loose. You should contact the faculty member responsible for your topic at least one week ahead of your scheduled presentation with ideas of papers you wish to present. The faculty member will then clear you to present the suggested paper.

Presentations will be on papers that other members of the class have not read. So it will be important that the information presented is clear. However, as a presenter, you should be able to explain your paper in depth, expand on the importance of the area of research, and be able to answer related questions. In addition, *presenters will be responsible for leading discussions on the topic* and should thus come prepared with questions and comments to drive conversation.

An outstanding presentation will include the following elements: (a) background on the paper including important prior research or ideas that led to the focal study, (b) a description of the questions being addressed and why they are important and relevant to the week's topic, (c) the methodology used to address the questions, (d) the interpretation of the results by the authors, (e) the larger significance of the study, (f) the ethical implications of the work, (g) the distinct sides of the issue, and (h) what you view as a resolution to the ethical problems. You should also feel free to raise any questions or objections you have with the study and bring up parts of the paper that you didn't understand.

In preparing for your presentation, you will find the ISI Web of Science, which can be accessed through the Georgia Tech library website, to be of great assistance. It is recommended that to find articles, you target major scientific journals such as *Science*, *Nature*, *Proceedings of the National Academy of Sciences USA*, *Proceedings of the Royal Society of London B*, etc. You are also encouraged to discuss your presentation with the instructors if you need assistance. Conferring with the instructors will be most useful if you meet with them well ahead of your scheduled presentation.

Class participation

Class participation in the form of discussing issues, raising questions, and commenting on topics will make up part of your grade. You will not be graded, nor will you be judged, on your specific convictions. Rather, we are interested in seeing that you have thought about the subject matter.

In general, bioethical discussions often involve questions of values. Such discussions sometimes become personal, subjective, and emotional. However, it is essential to understand and develop skills in making rational decisions and arguments. It is also important to remain respectful of others when they speak. Bioethical discussions are not necessarily meant to lead to decisions regarding particular issues. Rather, they should result in understanding the perspectives, ideas, and arguments of individuals with differing viewpoints.