Department of Biology Course Outline

SC/BIOL 4305 3.00 Controversies in the Modern Life Sciences
Summer 2019

Course Description
This course is designed to give students the skills to analyze controversies within the bio-medical sciences and at the interface of the life sciences and society. Emphasis is placed on study of the methods, theory, socio-political and ethical issues in contemporary life sciences. Students will become practiced in library searches, critical reading and writing, PowerPoint presentations, and in working in groups.

Prerequisites

Course Instructors and Contact Information
Professor Jan Sapp
Email: jsapp@yorku.ca
Office: Farquharson 306.
Office hours: Tuesdays 16:00-17:00 by appointment

Schedule
Class time: Tuesdays and Thursdays 13:00-16:00
Location: LSB 101

Evaluation

ASSESSMENT:

Student presentations (and class participation) 20%. Students will give PowerPoint presentations of their work, and lead class discussion. Each student will be assessed on his or her own contribution to the oral presentation. Note up to 10% of final mark will be deducted for lack of class attendance and participation. 5% deducted for two classes missed; 10% for three classes missed.
Essay proposals 15%: due May 9

Essays: 40% due June 10, 10 pages, double spaced, 12 pt font, with academic referencing style (e.g. as per *What is Natural?).

**NOTE:** At least 7 journal articles and/or books must be used and properly referenced in the essay.

Final course grades may be adjusted to conform to Program or Faculty grades distribution profiles.

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**Important Dates**

First class: April 29  
Last date to drop course without receiving a grade May 27

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**Resources**

**Course Moodle:** Most of the lecture PowerPoint slides will be made available to the class through the course Moodle site. These slides are not a substitute for attending class or reading the book. You are responsible for information you may have missed in the lectures.

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**Learning Outcomes**

Students are introduced to social and political issues often underlying biological controversies and begin to understand processes by which controversies may open and close. Students become practiced in literature searches, critical reading and writing, PowerPoint presentations, working independently and in groups.
Course Content

April 30 Introduction
May 1 What is Natural? P. xi-49
May 7 What is Natural?49-115
May 9 What is Natural? 115-163
May 13 What is Natural?163-216

May 15 Test

May 21 Workshop
May 23 Class presentations
May 28 Class presentations
May 30 Class presentations
June 4 Class Presentations
June 6 Class Presentations

Suggested Essay Topics

1. The Recombinant DNA Controversy
See, for example, Raymond A. Zilinskas and Burke K. Zimmerman eds., Gene-Splicing Wars: Reflections On the Recombinant DNA Controversy New York: Macmillan Publishing Company, 1986
2. STEM CELL RESEARCH

3. THE HUMAN GENOME PROJECT
History, ethical, legal, and social issues. See also various books on the human genome project

4. GENE PATENTING


5. GENE THERAPY


6. GENETIC SCREENING


Briard, M.L. 2002, "Genetic screening in children.", *Archives De Pediattrie*, vol. 9, pp. 3S-7S.


and ethics of sham surgery - A survey of Parkinson disease clinical researchers", *Archives of Neurology*, vol. 62, no. 9, pp. 1357-1360.
Verlinsky, Y. 2005, "Designing babies: What the future holds", *Reproductive Biomedicine*
7. The EVOLUTION-CREATION DEBATE
Williams, N. 2006, "Darwin's champions fight back", Current Biology, vol. 16, no. 13, pp. R479-
8. ON HUMAN ORIGINS

Multiregional versus out of AFRICA theories
Hybridization theories etc.
M Ingham, “Mitochondrial genome variation and the origin of modern humans”
E. Aguirre, “Early human expansions into Eurasia: The Atapuerca evidence
Quaternary International 75 (2001): 11
MH, Wolpoff J Hawks, R Caspari, “Multiregional, not multiple origins
A Varki, and DL Nelson, “Genomic comparisons of humans and chimpanzees,”
Anton SC, “Climatic influences on the evolution of early Homo?”

9. TRANSGENIC ORGANISMS

Wisniewski, J.P., Frangne, N., Massonneau, A. & Dumas, C. 2002, "Between myth and reality: genetically modified maize, an example of a sizeable scientific controversy", *Biochimie*, vol. 84,
10. THE SOCIOBIOLOGY DEBATE


11. GLOBAL WARMING AND CLIMATE CHANGE

Westbrook, G.T. 1999, "Global warming controversy", Oil & Gas Journal, vol. 97, no. 11, pp. 8-
What are the so-called 5 Mass Extinctions? What caused them and what is evidence for a 6th? Holocene or anthropocene?


What happened to the Pleistocene Megafauna (mammoths, giant kangaroo, sloth etc)?


What led to the extinction of the megafauna 10,000 years ago?


What led to the extinction of the Neanderthals?

Kuhn, Steven L.; Stiner, Mary C. "What's a Mother to Do? The Division of Labor among Neandertals and Modern Humans in Eurasia". *Current Anthropology*. 47: 953–981.  
Kuhn, Steven L.; Stiner, Mary C. "What's a Mother to Do? The Division of Labor among Neandertals and Modern Humans in Eurasia". *Current Anthropology*. 47: 953–981.  

15 Life on other planets: ethical controversies in planetary exploration of space exploration


16. Evidence of Life on Mars?  

17. Emerging Diseases
Course Policies

Missed mid-term Test: You must contact (email) me, or the course TA within two days (48 hours) of missing a midterm test. If you miss a test with a legitimate documented reason, permission may be granted to take a makeup test. All documentation supporting your excuse for missing a test must be received within one week of the missed test.

Only a “York Attending Physician’s Statement Form” (downloaded as part of the Petitions Package) or a similarly detailed doctor’s note (i.e., not a form stating only that the student visited the clinic) will be accepted for medical excuses. Documentation must cover the date of the missed test. Death of an immediate family member requires a death certificate or letter from the funeral director. If appropriate documentation is not provided within one week, a zero will be earned on the missed midterm.

Recording Lectures:
Photographs or video recordings of any portion of the lectures (including slides) are PROHIBITED.
Images and material presented are subject to Canadian copyright law.
Audio recordings are permitted provided they are used ONLY as a personal study aid, and are NOT sold, passed on to others, or posted online. The lectures are the intellectual property of the professor and cannot be distributed without his expressed permission.

University Policies

Academic Honesty and Integrity
York students are required to maintain the highest standards of academic honesty and they are subject to the Senate Policy on Academic Honesty (http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards.
There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve students’ research and writing skills, and cope with University life. Students are expected to review the materials on the Academic Integrity website at - http://www.yorku.ca/academicintegrity/

Access/Disability
York University is committed to principles of respect, inclusion and equality of all persons with disabilities across campus. The University provides services for students with disabilities (including physical, medical, learning and psychiatric disabilities) needing accommodation related to teaching and evaluation methods/materials. These services are made available to students in all Faculties and programs at York University.
Student's in need of these services are asked to register with disability services as early as
possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs. Please note that registering with disabilities services and discussing your needs with your professors is necessary to avoid any impediment to receiving the necessary academic accommodations to meet your needs. Additional information is available at the following websites: Counselling & Disability Services - http://cds.info.yorku.ca/

Ethics Review Process
York students are subject to the York University Policy for the Ethics Review Process for Research Involving Human Participants. In particular, students proposing to undertake research involving human participants (e.g., interviewing the director of a company or government agency, having students complete a questionnaire, etc.) are required to submit an Application for Ethical Approval of Research Involving Human Participants at least one month before you plan to begin the research. If you are in doubt as to whether this requirement applies to you, contact your Course Director immediately.

Religious Observance Accommodation
York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first three weeks of class. Similarly, should an assignment to be completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately. Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at http://www.registrar.yorku.ca/pdf/exam_accommodation.pdf (PDF)

Student Conduct in Academic Situations
Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. The policy and procedures governing disruptive and/or harassing behaviour by students in academic situations is available at - http://secretariat-policies.info.yorku.ca/policies/disruptive-andor-harassing-behaviour-in-academic-situations-senate-policy/