

STV203 Fall 2009 Syllabus

Dr. Scott M. Campbell

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1 Introduction

1.1 Calendar description

Biotechnology and Society

Biotechnologies are currently migrating from the laboratory to a wide range of consumer products. In everything from foods to pharmaceuticals, genetic engineering is entering daily life. The biotechnology revolution will likely have as much of an impact on our lives as the information technology revolution. However, there is a wide and potentially dangerous gap between research and development on the one hand and societal awareness of its impact on the other. This course is intended to help students gain a deeper appreciation for the issues, including ethics, surrounding biotechnology and society. It will do this through an investigation of such interactions between biotechnologies and society as genetics and the law, foods and the media, and soil remediation and the environment. Consideration will also be given to the role of computing in biotech research and in the human genome project.

Credit weight: 0.5

Pre-requisite: Level at least 2A

No background in biotechnology is assumed.

1.2 Location and Time

RCH 209, Thursday 7-10pm

Lectures are delivered partially with the aid of slides, which will be available for students to download on ACE before the lectures. However, the slides do not replace student participation, and all students must be prepared to discuss, listen and take effective notes.

The general pattern of each week's lecture will be an introduction to the week's topic, followed by class discussion of the readings, with a single break around the mid-point of the evening. Occasionally, the content may be enhanced via guest lectures or screening of videos.

1.3 Instructor

Dr. Scott Campbell, sm2campb@uwaterloo

<http://www.eng.uwaterloo.ca/~sm2campb>

Office: E3X 3174 Ext. 35635

Hours: Tuesday 1-3 (or by appointment, please email)

I check email during regular business hours and will address short questions as quickly as possible, but longer replies may take a day or more. As a general rule, don't expect replies on weekends.

2 Course Details

2.1 Evaluation

The breakdown of grades for the course this term is as follows. See sections 3, 4, and 5 for more information.

Assignments	40%
Test 1	20%
Test 2	20%
Participation	20%

2.2 Website

Please use UW-ACE for access to lecture slides, assignment details and drop boxes, the course readings, a course discussion forum, and other resources.

2.3 Textbook and Readings

The required text for this course is: *Aluizio Borem, Fabricio R. Santos, and David E. Bowen. Understanding Biotechnology. NJ: Prentice Hall, 2003* and is in the bookstore. There may be used copies available as it has been used previously.

Additional required and supplementary readings will be assigned weekly and posted to ACE, along with study questions to consider. Students are expected to have completed each week's readings in advance of the lecture and be prepared to discuss the contents and study questions.

2.4 University Policies

2.4.1 Academic Integrity

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. Check www.uwaterloo.ca/academicintegrity/ for more information.

2.4.2 Discipline

A student is expected to know what constitutes academic integrity (check www.uwaterloo.ca/academicintegrity/) to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline,

www.adm.uwaterloo.ca/infosec/Policies/policy71.htm. For typical penalties check Guidelines for the Assessment of Penalties, www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm.

Note that all cases of academic misconduct – even minor mistakes or apparently trivial cases – must be reported to the appropriate academic dean. There are no exceptions to this rule!

2.4.3 Appeals

A decision made or penalty imposed under Policy 70 (Student Petitions and Grievances) (other than a petition) or Policy 71 (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals) www.adm.uwaterloo.ca/infosec/Policies/policy72.htm.

2.4.4 Grievance

A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4, www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt please be certain to contact the department's administrative assistant who will provide further assistance.

2.4.5 Students with disabilities

The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term. Please contact the instructor as soon as possible if you require academic accommodations.

2.5 Course Policies

2.5.1 Attendance

Attendance will be recorded weekly and will form a portion of your participation grade. For exceptions (i.e. sick, conflicts, etc) see 2.5.7. For more on the participation grade see 5.

2.5.2 Late assignments

All submitted assignments will be penalized 1% from your final overall grade per 24 hour period past the deadline, to a maximum of the assignment value. This includes weekends for those portions which can be submitted online. Consideration may be granted if you contact the instructor for an exception *before* the due date (see 2.5.7).

There is no buffer or grace period for assignments submitted electronically. Give yourself adequate time to finish and submit. Even if you submit a paper copy on the due date, if your electronic submission is late you will still be penalized.

2.5.3 Group work

There will be group work this term, in which students are expected to collaborate freely.

In the case of individually assigned work, I expect students to develop their own ideas in their research and writing, but also encourage them to approach their colleagues, friends or family to discuss their ideas or help proofread essay drafts.

2.5.4 Regrading

Grades for all assignments and tests can be appealed, using the following process:

1. Talk with the instructor for more information about the grade you received.
2. Submit to the instructor a written justification explaining why you feel your grade is inappropriate.
3. The instructor will regrade the entire assignment or test. The new grade may be higher or lower than the original, and will be considered final.

See 2.4 above for more information concerning appeal and grievances.

2.5.5 Test conflicts

Other instructors occasionally (and improperly) schedule tests during our official class time. In case of such a conflict, the other instructor is required to provide alternate test arrangements for students with a conflict. See *University of Waterloo Examination Regulations and Related Matters*, <http://www.registrar.uwaterloo.ca/exams/ExamRegs.pdf>.

Students are expected to notify their instructors of such conflicts as soon as possible.

2.5.6 Gender-fair language

Gender-fair or gender-neutral language should be used for all assignments and tests. That is, don't use "man" to refer to "humans", and don't use "he" to refer to a person unless you know that person is male. You may be penalized for failing to use appropriate terms. To familiarize yourself with gender-fair language, see: <http://www.rpi.edu/web/writingcenter/genderfair.html>.

2.5.7 Exceptions and Extensions

A *University of Waterloo Verification of Illness* form is required within one week of a deadline if a student is sick and requests an exception or extension.

All exceptions to the course policies require documentation and, wherever possible, advance notice. Unplanned family emergencies and illnesses are generally good reasons for an exception; a heavy course load or a failure to plan ahead is not a good reason.

2.5.8 Excessive Disruptions and Laptop computers

This course is run much like a seminar; the instructor will lead discussion and all students are expected to participate. Fairness demands appropriate behaviour and attention when others are speaking.

As such, I will not tolerate disruptive or off-topic activities such as surfing the web, private discussions, or unrelated reading material which may affect other students. Students who persist in such activity risk forfeiting their entire participation grade.

2.5.9 Feedback

I encourage course feedback at all times. Contact me directly, pass a message via the TA, or submit anonymous comments on UW-ACE. Look under the *Lessons* tab for the anonymous feedback drop box. I will attempt to address all concerns as soon as possible.

3 Assignments, 40%

There are two major assignments for this course. The first is a group assignment with a presentation and a handout, the second is an essay, submitted individually.

3.1 Group Assignment, 20%

Presentations to be held in class on October 15; handout and any electronic slides (PowerPoint, PDF, etc) are due the same day at noon.

Students will work in groups of three or four and analyze a particular interaction between biotechnology and society from a list of topics. On October 15 each group will present the results of their analysis to the class.

By noon of that day groups are also expected to electronically submit a handout no more than two pages long with a brief summary of their results and a bibliography. If they plan to use electronic slides, such as PowerPoint or PDFs they must submit them by noon as well. I will provide copies of the handout for the rest of the class and have the slides ready at the beginning of class.

Further instructions, expectations, topic options, and a rubric will be provided in class and on ACE.

3.2 Essay Assignment, 20%

Deadline, 6pm November 19

For the second assignment students will work individually. After choosing a topic from a provided list students will compare and contrast several ethical dimensions with respect to their topic. It is possible to build on chosen topics from the first assignment, but this is not necessary.

Further instructions, expectations, topic options, and a rubric will be provided in class and on ACE.

3.3 Use of Turnitin

Plagiarism detection software (Turnitin) will be used to screen certain assignments in this course. This will be done to verify that use of all materials and sources in assignments is documented. In the first week of the term, details will be provided about arrangements for the use of Turnitin in this course.

Students who prefer not to use Turnitin must meet with the instructor at least two weeks before the relevant assignment deadline to discuss alternatives. Suggested alternatives include submitting in advance one or more of the following: an annotated bibliography, outline, or draft of the assignment.

3.4 Assignment notes and general specifications

- There is no grace period for electronic submissions. See 2.5.2 for the late penalty policy
- The second assignment must be submitted electronically and on paper, but all assignment disputes (i.e.: plagiarism, regrading, etc) will be resolved by reference to the electronic copy.
- Always include your name, student ID, date, page numbers, and a title; title pages, folders, duo-tangs are unnecessary
- All documents should use a 12-point Times Roman font, 1” margins, and double-spaced text. This corresponds roughly with 250-300 words per page.
- All assignments must include citations in the text (footnotes, endnotes, or in-text), especially when directly quoting a source, as well as a bibliography. References must be consistent and must employ a known citation style.
- Improper citation style, failure to include a bibliography, and inappropriate references to Wikipedia are all grounds for penalty.

3.5 Writing Assistance and Guidance

A folder on ACE contains a series of documents with advice on writing, tailored for students taking STV courses. I encourage you to read these documents.

Although I am primarily interested in your ideas, I will also evaluate your ability to express yourself coherently via proper spelling, grammar, and formatting. I also expect you to defend your ideas with suitable references and evidence, without vast generalizations or factual or historical inaccuracies.

The English Language Proficiency Program also offers help for students who need help. Visit the Writing Centre in the PAS building <http://elpp.uwaterloo.ca/writingcentre.html>. They are not a proofreading service, but will help all undergraduates with their writing.

4 Tests, 40%

See the schedule below in section 6.

There will be two in-class tests, worth 20% each. Each will be two hours, closed-book, and (mostly) non-accumulative. They are primarily concerned with the concepts from the course, but will also include short, factual questions designed to test a student's basic knowledge.

Further details will be made available in class and on ACE.

5 Participation, 20%

One of the overall goals for this course is to learn to appreciate the perspectives of others. As such, students are expected to participate in class and online, to share their own responses to the course material with other students, and learn from other students in return. Students can expect to be called upon at random for their thoughts. Those who are shy, or otherwise find it difficult to speak up in class should speak to the instructor early in the term to discuss alternate arrangements.

5.1 Attendance, 5%

Since it is difficult to participate without showing up, part of the participation mark will be based on attendance. Everyone starts with 5%; for every missed class, the grade will be reduced by 0.5%. See 2.5.7 for information about exceptions to this.

5.2 In-class discussion, 10%

Although this is not strictly a seminar course, a considerable amount of the lecture time each week will be devoted to class discussion. Students are expected to prepare by reading the required material, studying the accompanying questions, and preparing discussion material of their own. Remember, however, that discussion requires everyone to do three things: to talk, to think, and *to listen*.

As such, participation in each week's discussion will be monitored, in terms of both quantity and quality of a student's contributions. This will be evaluated twice: at the mid way point in the course, and again at the end. Each evaluation will be worth 5%; a rubric will be posted on ACE, stating expectations.

5.3 Online discussion, 5%

There is a discussion board on ACE under the *Lessons* tab. It is there for students to discuss the course material, post links to interesting events or items in the news, or ask administrative questions. Students should subscribe to the board to avoid missing posts. Again, a rubric will be posted to ACE stating expectations.

6 Schedule

This is the tentative schedule. As we move through the term, external or internal events may lead to changes to the course content, but the assignment deadlines and test dates are fixed.

Date	Week and Lecture Topic	Deadline
Sept. 17	0. Welcome	
Sept. 24	1. Biotechnology and Society	
Oct. 1	2. Agriculture and Nutrition	
Oct. 8	3. Biodiversity and Remediation	
Oct. 15	4. Presentations	Noon: Handouts & Slides
Oct. 22	5. Test 1	
Oct. 29	6. Biotechnology and Ethics	
Nov. 5	7. Cloning, Gene Therapy and Eugenics	
Nov. 12	8. Business, Policy and Security	
Nov. 19	9. Biotechnology and Culture	6pm: Assignment 2
Nov. 26	10. Biotechnology and Progress	
Dec. 3	11. Test 2	

Final grades will be uploaded to Quest when the marking is completed – please don't ask when, it is impossible to predict. Also note that final grades will be rounded by ACE and Quest using a round-to-even method, which is more fair statistically, but perhaps not what all students are used to.

See <http://www.quest.uwaterloo.ca/undergraduate/dates.html> for more information regarding university dates for drop deadlines and related penalties.