Plants & Society

BIOB38

Course Syllabus

Course description and objectives

BIOB38H provides an introduction to the scientific foundation and practice of food production. How do plants directly and indirectly feed the human population? Students will learn about the origin of agriculture and what traits people have been altering in domesticated plants over the course of the last 10,000 years. Emphasis will be put on an understanding of the changes in how crops are grown since the 20ieth century, i.e. the Green Revolution and its legacy. A good portion of the lectures will be dedicated to a discussion of the most important plants that feed the world ('the top 20'). Since ancient times, people have used herbs and spices to add interest to their meals and the course will discuss the (historical) importance of these plants. Often, it is a fine line between healing plants and plants of addiction and we will learn about plant secondary compounds involved in both these purposes. Plants are also used to produce alcoholic beverages and the course will showcase how beer is brewed and from what plants. Lastly, plants are also very important for the fibers that keep us warm and also for the production of paper, which triggered the development of our culture and complex societies.

Instructor

Ivana Stehlik
Phone: 416-287-7422
Email: ivana.stehlik@utoronto.ca
Office hours during January: Mon 12 – 1.30 PM, or by appointment (just send me an email suggesting a few possibilities fitting your schedule and we will make it work!), SW563C
Office hours week 5 to end of course: Tue 12 – 2 PM, SW563C

Website

Class information will be provided on the course website on the U of T Portal: portal.utoronto.ca. You will need your UTORid and your password to access the site. Please refer to instructions on how to access the course website on blackboard using the information in http://www.portalinfo.utoronto.ca.

Basic breakdown of marks*

Quizzes about the four movies (2% each)	8%
Writing of one long-answer question about the lecture material	13%
Midterm exam (lectures 1-12)	34%
Final exam (cumulative 1-24)	45%

**If you are taking BIOB11 and BIOB51 concurrently in this semester, make sure to check out the following marking scheme and its associated additional assignment on page 11. This is a unique opportunity!*

Breakdown of marks for willing students <u>concurrently</u> enrolled in BIOB11 and BIOB51

Quizzes about the four movies (2% each)	8%
Writing of one long-answer question about the lecture material	13%
Midterm exam (lectures 1-12)	31%
Final exam (cumulative 1-24)	33%
Poster	15%

Course times and location

Course lecture time and place: Tue, 3–5 PM, ARC AC223; Tutorial time & place: Thu, 5–7 PM, ARC AC223

Course schedule/Important dates

Week	Date	Lectures	Lecture topic/presentations
1	1/3	1/2	Origin of agriculture
2	1/10	3/4	Plant domestication
3	1/17	5/6	Methods of domestication
3	1/19	**Tutorial**	**Movie time: 'Dirt!'**
3	1/19	**At the end of the tutorial**	**Group sign-up for long-answer question**
3	**1/19**	**Quiz about the movie**	
4	1/24	7/8	Green Revolution I
4	**1/29, 11.59 pm**	**Group registration for poster assignment, by email to ivana.stehlik@utoronto.ca; just for willing students concurrently taking BIOB38, BIOB11 and BIOB51**	
5	1/31	9/10	Green Revolution II
5	**1/31; 1-3 pm**	**TBA room: optional session on how to successfully produce, print and present a poster; just for participating students in the poster production**	
5	**2/5**	**Submit your long-answer question and answer about lecture 5/6 to turnitin**	
6	2/7	11/12	Plants that feed the world I
6	**2/9**	**Tutorial**	**Movie time: 'King Corn'**
6	**2/9**	**Quiz about the movie**	
7	2/14	13/14	Plants that feed the world II
Reading week			
8	2/28	15/16	Plants that please the palate
9	3/7	17/18	Plants that heal the sick
10	3/14	19/20	Plants that hook the mind and body
10	**3/16**	**Tutorial**	**Movie time: 'Peyote to LSD: a psychedelic odyssey'**
10	**3/16**	**Quiz about the movie**	
11	3/21	21/22	Plants the world thirsts after
12	3/28	23/24	Plants of warmth and strength
12	**3/30**	**Tutorial**	**Movie time: 'Behind the Label. The Double Face of Indian Cotton'**
12	**4/2**	**Quiz about the movie**	
	April TBA (exam period) Final exam (cumulative; lectures 1-24)		

Lectures and other course material

Lectures will be posted on Blackboard as PDF files, typically 24 h before class. You will need your UTOR ID to download the files.

Communication policy

Students are required to regularly and often check their UTOR email to receive announcements or updates relating to the course. To inquire about course-related issues, students are strongly encouraged to solely use their UTOR email, as hotmail or other email providers are spam-filtered on a regular basis. It is the responsibility of you as the student to make sure your email reaches the instructor.

The instructor will not answer any questions related to material discussed in class or during the tutorials by email (unless it is a clear yes-no answer), but the student is encouraged to ask these questions before or after class or the tutorial, during official office hours or to schedule a meeting outside office hours by email.

Accessibility

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach the course instructor and/or the AccessAbility Services Office as soon as possible. Enquiries are confidential. The UTSC AccessAbility Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or ability@utsc.utoronto.ca.

Readings

There is no required reading, but most topics introduced in the lectures are covered in the book [Levetin and McMahon. 2007. Plants and Society. McGraw-Hill], which is the recommended course book. The book is available at UTSC's book store (hopefully both new and used books). The course's approach in regard to exam questions is as follows: questions will only cover material introduced in class. If you do not understand certain concepts, the recommended sections of Levetin and McMahon's book should be consulted, but anything present in the book yet not covered in the lectures will not be on the exam.

In case a certain topic is not covered in Levetin and McMahon's book, the lecture material originated most probably from primary scientific literature. In each such case, there is a reference provided on the slide along with e.g. a table or figure. This reference will help you to find the article using either ISI web of science (with your UTOR ID and password, on the website of the Gerstein library; http://www.library.utoronto.ca/gerstein/) or through Google scholar (does not work in all cases).

Penalty for late assignments

You can only get a copy of the quiz, in person and one per person, and hand it in on the day of the movie. This is non-negotiable unless you bring a valid doctor's note. There will be a penalty of 5% per day for the long-answer assignment received late. Weekend days count as individual days. Unless there are extenuating circumstances (e.g. medical reasons with a medical certificate), a mark of zero will be applied to assignments submitted one week late or more. Heavy workloads or malfunctioning computer equipment are not legitimate reasons for late submission. If you know ahead of time that you have a legitimate reason why you cannot hand in the assignment, let the course instructor know before the due date.

Missed exams or assignments

Students who miss an exam for reasons entirely beyond their control may, within one week of the missed event, submit a written request for special consideration to the instructor explaining the reason for missing the test, and attaching appropriate documentation, such as the official University of Toronto medical certificate (www.utoronto.ca/health/form/medcert.pdf).

Academic integrity policy

According to Section B of the University of Toronto's *Code of Behaviour on Academic Matters*, it is an offence for students to:

• use someone else's ideas or words in their own work without acknowledging that those ideas/words are not their own with a citation and quotation marks, i.e. to commit plagiarism.

• include false, misleading or concocted citations in their work.

• obtain unauthorized assistance on any assignment.

• provide unauthorized assistance to another student. This includes showing another student completed work.

• submit their own work for credit in more than one course without the permission of the instructor

• falsify or alter any documentation required by the University. This includes, but is not limited to, doctor's notes.

• use or possess an unauthorized aid in any test or exam.

Violation of the Code of Behaviour on Academic Matters will force the instructor to provide a written report of the matter to the Chair/DeanProvost's and a penalty according to the U of T's guidelines on sanctions will be put into place.

Submission of long-answer question/answer to Turnitin

Students will be asked to submit their long-answer questions and answers to **Turnitin.com** for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their work to be included as source documents in the Turitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site:
(http://www.utoronto.ca/ota/turnitin/ConditionsofUse.html)

Turnitin.com is most effective when it is used by all students; however, if and when students object to its use on principle, the course offers a reasonable offline alternative. The student will then be asked to meet with the course instructor to outline and discuss the report before its final submission to demonstrate the process of creating the report according to the academic integrity policy.

Assignment to the whole class: Long-answer questions and answers about lecture

Purpose

The purpose of this assignment is to encourage you to think about course material in a critical way. You will be expected to determine the key points underlying a given block of course material, and then use logic and creativity to design a good question to assess understanding of these points. Finally, you will have to outline a complete answer key for marking your question.

Overview

This assignment will be completed in a group of 2-3 students and your group will hand in a single assignment. For this assignment, you must create a written-answer question suitable for an exam along with an answer key for your question, based on assigned material covered in lectures. You may select your own group, or be assigned to a group. Your group needs to be registered by Fri, Jan 23. Please write the names of your group members on a piece of paper and drop it into the box located outside the main door to SW563.

Due date

The deadline for submission is Sun, end of week 5 by midnight (11:59 PM). You will need to submit the assignment to Turnitin.com. Internet traffic on turnitin probably is enhanced just before midnight, thus don't wait to the last minute… No extensions will be granted unless with legitimate documentation. Late assignments receive a penalty of 5% per day.

Evaluation

Your mark will depend on our assessment of the quality and clarity of your question and answer, and the extent to which it tests understanding of concepts, rather than just straight recall of details (marking rubric see below).

Equal work-load assessment

To get a mark for this assignment, **each member of your group must hand in a confidential assessment of work-load sharing** in which they briefly outline whether work was shared equally by all group members (this can be hand-written and dropped into the box in front of SW563). You must put your full name and student# on this assessment, which ***only*** Ivana Stehlik will review. Ivana Stehlik will keep these reports confidential, they will not be read by anyone else, and will be destroyed after final marks are submitted. If everything was fine, then you need only write: 'equal work by all group members'. If you feel that someone in your group did not do their fair share, you should outline the problem, along with the name of this group member. If there is consensus within a group that one member did not do a fair share of the work, then a penalty may be applied to that individual's mark. **Your work-load assessment must be handed in at the same time as the question & answer assignment.**

Format guidelines

1. Your question should result in an answer worth approximately 15-20 marks. Your answer key must clearly indicate which points would receive marks, and the total mark-value of the question.

2. You may construct multi-part questions as long as the parts are related to each other. You may include figures or tables for interpretation questions if you wish.

3. You may refer to real organisms, places, data, or situations, or you may invent hypothetical ones for your question. For example, you may choose to write a question about *Planta edulis*, a plant that has been recently discovered in Fairyland.

3. This assignment should be between 1 and 2 written pages plus one additional page for any figures or tables you may use. Font size is 11pts in Times Roman, and the line spacing is 1.5 lines.
4. Your answer key must be clear and understandable, but can be written in point form.
5. The best questions/answers will test understanding of material, rather than straight recall of memorized facts.

Tips for writing a good question & answer
Tip 1: One approach to designing an exam question is to first decide on the main points you wish to have emerge in a good answer to your question, then work backwards to design a question that should elicit these answers. Your group should work out together which aspects of the topic you want to highlight in your question.

Tip 2: One way to split the work of this assignment fairly across your group and to ensure your question and answer are reasonable is:

Four group members: have 2 group members write the first draft of a question (without discussing it with the rest of the group!), then have the other 2 group members read the question and compose what they think is a good answer to the question, with assigned marks (without discussing it with the two people who wrote the question!). Then meet as a group of 4 and fine tune the question and answer and discuss what was intended versus how it was interpreted.

Three group members: have one person draft a question (without discussing it with the rest of the group), have each of the other 2 members independently sketch out an answer to the question. Meet as a group—did both members interpret the question the same way? Work together as a group to fine-tune the question and answer.

I strongly advise you to follow Tip 2 when writing your assignment. The most common error on this assignment arises when a group is unable to objectively recognize what answers would reasonably arise from their question, or does not anticipate how a naïve audience will interpret their question.

Handing in your assignment
• Each group must submit ONE digital copy of their assignment via Turnitin.com by the due date (see overview table page 3). Your assignment must have the full names of all group members and your assigned group number printed on the first page.
• Each individual must submit their own confidential work-load assessment into the box outside SW563.
• Marking of this assignment is by your course TA.

Marking scheme (max total 25 pts)
Tests understanding (5 pts max)
• Requires application of concepts to novel data or examples and/or explanation of concepts
• Minimizes straight recall

Question & answer are correct (5 pts max)
• Accurate representation of course material and other published data in the subject area

Question would reasonably lead to answer given (5 pts max)
• Interpretation of question is clear
• Informed person in this course would be likely to give answers on key after first exposure to the question

Clarity and quality (5 pts max)
• Grammar, vocabulary and structure contribute to ease of reading and interpretation
• Citations given where needed
• Question is at the right level for this course

Answer has clear and appropriate mark distribution (2.5 pts max)
• Item of more importance or requiring more explanation have higher marks assigned to them than less important or straight recall answers
• Items of similar difficulty have similar mark value.

Creativity (2.5 pts max)

Correct length: -10% of the total mark if too long or too short

Poster assignment for willing students concurrently enrolled in BIOB11 and BIOB51

Purpose

The purpose of this assignment is twofold: (1) to help you develop critical thinking and subject matter skills and (2) to hone some vital, but hard-to-teach transferable skills, at least as it is currently the case at the second-year undergrad level. This year, 2017, is a pilot for this novel project. As a representative for the teaching team of our three major winter 2nd year BIO courses (BIOB11, BIOB38 and BIOB51), I strongly encourage those of you enrolled in all of these three courses concurrently to take up this opportunity and enrich your undergrad experience! This is a novel learning approach across any of biology courses at UTSC and, perhaps, within all of U of T.

(1) The creation of the poster will help you to *think about course material in BIOB38, BIOB11 and BIOB51 in a critical and interconnected way*. Even though most major fields within Biology are interconnected and depend on each other, there is little opportunity to think beyond the limits of a single course in an undergrad career in any of our programs in biology.

(2) Due to large class sizes in the 1st and 2nd years, there is limited opportunity to develop some of the most critical skills for the general job market, ie the ability to work effectively in group settings, along with writing and presentation skills. In this assignment, you have the opportunity to team up in groups of 3-4 students. In a group-learning effort, you will come up with an idea for the poster, do online research to find scientific papers supporting your claim/idea, develop the text for the poster, and put the poster together in a graphically pleasing and scientifically effective way. In a last step, you will represent the poster in a poster presentation session open to anybody at UTSC in the Meeting Place, where you will work to diminish you stage fright. I will provide you with detailed instructions on how you can do all these steps most effectively, to make this a good and unique learning experience.

Evaluation

In this pilot year, you will be awarded 15% of your final BIOB38 course grade for making and representing your poster. To make up for this, less value will be allocated to the midterm and final exams (midterm: 31%, down from 34% for the general class audience; final: 33%, down from 45%). If this pilot proves to be successful, future generation of triple-concurrent BIOB students will be awarded 5% in each of the three courses (again for a cumulative 15% across the three courses), most likely by lowering the weight of the final exams.

Overview

You need to find a topic at the intersection between BIOB38, BIOB11, and BIOB51! BIOB38 deals largely with which plants we have changed in what ways to suit our various needs, and how we grow them under what challenging conditions. BIOB11 gives you the tools to understand molecular aspects of cellular and genetic processes, while BIOB51 focusses on the importance of genetic variation, mechanisms of evolutionary change, and adaptation in a world with changing environmental conditions.

The beauty of this poster assignment is that the overlap between the three courses is large, interesting and highly relevant! One possibility to get your creative juices flowing is the following hint: think of a crop species X (any more or less important crop species you might or might not come across in BIOB38) which has been changed genetically from its wild ancestor over the past time period (10,00 years? 50 years? 10 years?). What genes were changed in what way to be meeting a certain human need or environmental challenge? Is there an effect on wild and or interbreedable plant populations or is there a future evolutionary threat as a result of this plant modification? Or, along similar lines: what characteristics would be beneficial if they were introduced by what genetic means into which plant to meet what challenge, but under what evolutionary costs?

Due dates

Your group needs to be registered by Fri, Jan 23. Please submit the names of your group members by email to Ivana Stehlik at ivana.stehlik@utoronto.ca.

I am currently trying to rent the Market Place for the poster presentation session. I am aiming for it happen on a Tuesday from 1-3 PM, because all three courses run on this day and there is a gap in the early afternoon (thus you are all in and hopefully not otherwise occupied ☺). Possible presentation dates would be Feb 28, Mar 7, 14 or 21 (or later), but I will keep you posted.

The actual due date for the submission of the poster would be the Sun before the poster session to give you enough time to print the poster. If you don't have a poster ready for the poster presentation day, your assignments will receive a grade of 0%.

Poster cost and poster printing

The cost to print the poster in the correct format (TBA) and in color will cost you between $30 and $50. This cost should be split evenly between all group members. You can print the poster either at Academic Printing at UTSC or go to any Staples or other such stores (do your own inquiry). It takes approximately 45 min to print a poster of our size, so plan wisely!

Equal work-load assessment

To get a mark for this assignment, **each member of your group must hand in a confidential assessment of work-load sharing** in which they briefly outline whether work was shared equally by all group members (this can be hand-written and dropped into the box in front of SW563). You must put your full name and student# on this assessment, which ***only*** Ivana Stehlik will review. Ivana Stehlik will keep these reports confidential, they will not be read by anyone else, and will be destroyed after final marks are submitted. If everything was fine, then you need only write: 'equal work by all group members'. If you feel that someone in your group did not do their fair share, you should outline the problem, along with the name of this group member. If there is consensus within a group that one member did not do a fair share of the work, then a penalty may be applied to that individual's mark. **Your work-load assessment must be handed in at the same time as the submission of the poster assignment.**

Formatting instructions

On our course Blackboard page, you can download to a sample poster containing many formatting tips. In addition/ overlapping to the info on the sample file, I will hold (Jan 31 from 1-2 PM (3?)), an optional session on how to successfully produce, print and present a scientific poster. This session will be helpful because the info is applicable to any course in which you have to produce a poster. Don't miss it ☺!

Steps in the poster creating process

(1) If you are a triple 2nd year BIO-student, decide whether this assignment is something for you.
(2) If yes, find 2-3 buddies of the same cohort or ask Ivana Stehlik (by mail) to help you find group member.
(3) You need to register your group with all the members by Sun, Jan 29, 11.59 PM, by an email to Ivana Stehlik. Send in all full student names and student numbers.
(4) Think of ways to distribute equal work load. You will need to for look for ideas, do background research for relevant papers, write the texts for individual subunits of the poster, put the poster together, print it and represent it in the Market Place.
(5) Print the poster at the due date TBA
(6) Represent the poster in the Market Place on day TBA.

Grading scheme

	Criteria			Points
	3	**2**	**1**	
Quality of information	Poster descriptions are clear, correct and concise	Poster descriptions are mostly clear, could be a little more concise	Poster descriptions are unclear, incorrect and not concise	
Poster contents straddles all of BIOB11, BIOB38 and BIOB51	Yes	Somewhat	Not really	
Color and patterns	Enhance readability	Support readability	Detract from readability	
Layout	Creatively enhances information	Balanced, uncluttered, adequate white space	Not balanced, cluttered, inadequate white space	
Graphics, photos	All graphics are engaging, enhancing text	Graphics enhance text	Graphics do not enhance text	
Titles and subtitles	All (sub) titles are clear, enhance readability	Most (sub) titles are clear, enhance readability	Few or no (sub) titles clarify text	
Text size and color	All text is clear and readable, a few changes in size and color enhance understanding	Text is clear and readable, a few changes in size and color enhance understanding	Some text is clear and readable, frequent changes in size and color detract from understanding	
Writing	Well written and organized, clear, easy to follow	Adequately written and organized, mostly clear and easy to follow	Poorly written and organized, unclear, hard to follow	
Grammar and spelling	No grammar and spelling mistakes	Some grammar and spelling mistakes	Many grammar and spelling mistakes	
			Total	