

# ECOLOGY

## Syllabus: BIOB50H3Y Summer 2019

Course Instructor: Dr. Joanna Zigouris, [joanna.zigouris@utoronto.ca](mailto:joanna.zigouris@utoronto.ca), SW 542  
Office hours: Wed 10:00 – 12:00 or by appointment

Course Coordinator: Jennifer Campbell, [jacampbell@utsc.utoronto.ca](mailto:jacampbell@utsc.utoronto.ca), SW 421D  
Office hours: Mon and Wed 10:00 to 11:00  
Tues 14:00 to 16:00  
Thursday and Friday by appointment only

Teaching Assistants: Andrew Masson, [andrew.masson@mail.utoronto.ca](mailto:andrew.masson@mail.utoronto.ca)

Textbook: Bowman, W.D., Hacker, S.D., and M.L. Cain. *Ecology* 4<sup>th</sup> ed.  
Sinauer Associates Inc.

Class meeting time: Lectures Wednesday 14:10 – 16:00 SW 309  
Tutorials Wednesday 16:10 – 17:00 SW 309\*  
\* Tutorials will not meet every week

### 1) Course Description

This class is a lecture and tutorial course that gives students an introduction to the main principles of ecology, the science of the interactions of organisms with each other and with their environment. The course covers community and population ecology, and provides an emphasis on how ecology relates to other areas of biology, and to contemporary human and environmental issues.

### 2) Learning Outcomes

At the end of this course, students should be able to...

1. Correctly use common biological terms and principles from the study of ecology and use them to interpret the material covered in this course.
2. Apply studied ecological terms and principles to new situations.
3. Analyze ecological principles based on the ability to distinguish between facts and inference.
4. Describe the flow and conversion of energy as it flows through trophic levels and relate this to the physical laws of thermodynamics.
5. Explain how natural selection and genetic changes within populations leads to evolution and speciation.

6. Describe how the physical, biological, and social environments interact with the internal requirements of organisms, and also identify the underlying physiological and behavioural processes that this involves.
7. Describe the processes involved in population growth, species abundance and patterns of organism distribution. Use major mathematical models to describe these processes in a given example.

### 3) Academic Honesty

All work in this course is covered by the University of Toronto's policies on Academic Misconduct (see below hyperlink), which outlines the behaviours that constitute academic dishonest, as well as the processes for addressing academic offences. The University treats cases of cheating and plagiarism very seriously, so please **REVIEW THIS MATERIAL** as you are expected to be familiar with it.

<http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf>

Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

- Using or possessing unauthorized aids.
- Looking at someone else's answers during an exam or test.
- Misrepresenting your identity.

In academic work:

- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from Dr. Zigouris or from other institutional resources (see <http://academicintegrity.utoronto.ca/>).

All students should have confidence in their ability to master this course material and earn an acceptable grade. If you are struggling with the material, please come see me or speak with your Teaching Assistant. You should also consider forming study groups as research has shown that students who participate in study groups earn, on average, higher grades in courses than those who do not.

#### 4) Course Policies

- Come to class on time and be ready to start as soon as class begins.
- Read all material related to that day's lecture / tutorial BEFORE class, and complete any pre-class assignments in advance.
- Ask questions and discuss the material with other students. Group discussion promotes learning.
- Be an active learner and participate fully in all aspects of the course. Hold yourself and your teammates accountable for all tasks assigned to you / them in any group activity. Be honest with yourself if you are not contributing as fully as you should be, and make positive changes, if necessary.
- If using technology, which includes (but is not limited to) cellphones, tablets and computers, please use them responsibly. The human mind is NOT capable of multitasking (as many scientific studies have shown), and distracted learners are not high-achieving learners. I reserve the right to dock points from any students caught using electronic devices for non-class activities, and also to ban them from future use of these devices while in class.

#### 5) Assessment

##### a) Methods of instruction

The basic information of this course will be presented through lectures on major topics, and group-based active learning exercises. Class attendance (lecture and tutorial) is **mandatory** and prompt arrival is crucial.

##### b) Reading Quizzes

Students are expected to complete each week's reading assignment before lecture and to be prepared to discuss these readings in class. Reading quizzes are due one hour **before** lecture each week. Your lowest two quiz grades will be dropped at the end of the semester. Late quizzes will be worth 50% of the original quiz grade, and must be completed before the last day of class. Quizzes are worth 10% of your final grade.

Students who do not wish to participate in reading quizzes may choose to opt out of this portion of the grade. Instead, the final exam will be worth 50% for any who choose this option. **The LAST DAY to opt out is Friday, May 24<sup>th</sup> at 11:59pm.**

**To opt out**, please email the course coordinator from your UofT email account, with the subject header 'Opt out of BIOB50 quizzes'. No late opt outs will be accepted.

### **c) Tutorials**

There will be four tutorial assignments during this course, and students will be broken into two groups based on their last names (group A and group B). Each group attends tutorial on a different week. In tutorial, students will participate in active learning and group-based exercises aimed at promoting deeper thinking about the concepts introduced in this course. These exercises may include, but are not limited to, completing worksheets, other writing assignments, or giving small presentations to your tutorial group. Some of these activities may require that you read additional material or conduct research outside of the classroom. More details regarding these assignments will be given out as the semester progresses. Quizzes are worth 15% of your final grade.

**No makeup tutorials will be permitted.** All students are expected to attend their assigned days of tutorial and must obtain permission from the TA to switch sections. Without a valid reason, students will not be permitted to attend a tutorial section other than the one they have been assigned to. The lowest tutorial score will be dropped at the end of the semester. Note this dropped score also includes all university-accepted excused absences (such as illness). If you will miss more than one tutorial for a university-accepted reason, you must contact your TA or myself as soon as possible so we can discuss alternate accommodations.

Students **MUST** attend at least two of the four tutorials in order to pass the course. If you attend 1 or less tutorials, you will automatically be removed from the course.

### **d) Exams**

There will be a midterm worth 30% and a cumulative final exam worth 45% of your final grade. All exams will be based on lecture and tutorial material as well as on the assigned readings. Readings supplement the lecture material and are immeasurably helpful in preparing for exams. All exams will consist of multiple choice, short answer and problem-solving questions. The final exam will take place during the final exam period. It will be cumulative and will have a similar format to the midterm exam.

**Makeup midterm exams** If you miss the midterm due to a university-accepted reason, please contact the course coordinator within three days of the missed exam and provide documentation to support your absence. See <https://www.utsc.utoronto.ca/biosci/missed-term-work-policy> for details on acceptable documentation and how to submit it. Students with a valid excuse will be given a makeup exam. Students who fail to contact the course coordinator within three days will earn a score of zero and no makeup exam will be permitted. NOTE that ONLY students who are unable to contact us within this time frame due to circumstances beyond their control are exempt from this timeframe, provided that they can properly document the reason why. The makeup midterm exam will consist solely of ten short answer questions.

If you miss the final exam you must go through the registrar's office to request a deferred exam.

### e) Accessibility

We welcome students with diverse learning styles and needs at this University and in this course. If you require some sort of accommodation, please see me or contact the AccessAbility Services Office (see below links) as soon as possible. We will work with you to ensure that you are able to meet the course learning objectives successfully. The UTSC AccessAbility Service staff are available by appointment to assess your specific needs, provide referrals, and to arrange appropriate accommodations. All enquiries are confidential.

UTSC AccessAbility: [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca), (416) 287-7560, SW 302

### f) Grading policies

Students are responsible for all material that is presented in lecture and tutorial. If you miss a class, you are strongly advised to obtain the notes and assignments from another student. Participation in lecture and tutorial will be an important factor in determining borderline grades, so attendance and participation are strongly advised. In addition, students who fail to attend at least two tutorials will automatically be removed from the course. Please note again that **NO MAKEUP TUTORIALS ARE PERMITTED.** For more details, please refer to the relevant sections of this syllabus.

Category	Percent
Midterm Exam	30%
Reading Quizzes	10%
Tutorial Assignments	15%
Final Exam (cumulative, during the final exam period)	45%

## **Late penalties**

No late assignments will be accepted for work that is completed in lecture or tutorial. Reading quizzes that are completed late will be worth 50% of the original quiz value. For all other assignments, work that is turned in late will be penalized by 10% per day, starting with 5 minutes after the due date / time, unless the student provides documented proof of the reason for their tardiness.

## **One week 'Statue of Limitations'**

All grading questions about exams, homework, quizzes, group exercises, literature reviews, etc. must be addressed within one week of the scores being posted online or handed out in class. After this time, no changes will be made to existing grades unless there is a calculation error. Thus, it is essential that you check your grades regularly and contact your TA or instructor within one week if you feel an error has been made or if you are unsure why you lost points.

## Schedule of Classes

Instructor: Dr. Joanna Zigouris (joanna.zigouris@utoronto.ca)

Lecture: Wednesday 14:10-16:00 SW 309

Readings from "Ecology" 4<sup>th</sup> edition, Bowman et al.

Week	Date	Topic	Reading
1	8-May	Intro & The Physical Environment	1, 2
2	15-May	The Biosphere & Environmental variation <b>Tutorial 1 – group A</b>	3, 4, 5
3	22-May	Evolutionary Ecology part 1 <b>Tutorial 1 – group B</b>	6, 7
4	29-May	Evolutionary Ecology part 2 <b>Tutorial 2 – group A</b>	7, 8
5	5-Jun	Populations <b>Tutorial 2 – group B</b>	9, 10, 11
6	12-Jun	<b>MIDTERM EXAM</b>	
7	19-June	<b>READING WEEK</b>	
8	26-June	Predation, Herbivory and Parasitism <b>Tutorial 3 – group A</b>	12, 13
9	3-July	Competition, Mutualisms and Commensalisms <b>Tutorial 3 – group B</b>	14, 15
10	10-July	Communities	16, 17
11	17-July	Biogeography & Species Diversity <b>Tutorial 4 – group A</b>	18, 19
12	24-July	Ecosystems <b>Tutorial 4 – group B</b>	20, 21, 22
13	31-July	Applied Ecology	23, 24, 25

**Final Exam - TBA**