

BIOB51 – EVOLUTIONARY BIOLOGY **SUMMER 2020**

COURSE SYLLABUS

Lectures: Monday 14:00-16:00

This course will be delivered entirely online.

<u>Professor:</u>	Dr. Mark Fitzpatrick biob51@utsc.utoronto.ca	Online Office Hours:	Mon 09:30-11:00 (or by appointment)
<u>Course</u>	Jennifer Campbell	Online Office Hours:	contact by email
<u>Coordinator:</u>	jac.campbell@utoronto.ca		
<u>TA</u>			
<u>Support:</u>	J.P. Fontenelle biob51@utsc.utoronto.ca	Online Office Hour:	Thurs 14:00-15:00

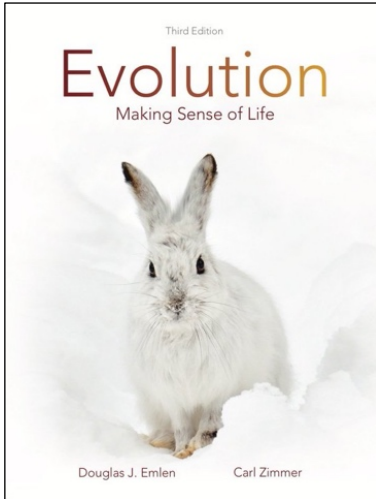
COURSE DESCRIPTION: Evolutionary Biology is the study of the diversity, relationships, and change over time in organisms at all scales of organization (from individuals to populations to higher taxonomic groups). The theory and principals of evolutionary biology give critical insight into a wide range of fields, including conservation, medicine, pathogenesis, community ecology, and development. This lecture-based course will give you a firm grounding in modern Evolutionary Biology. The course material: i) reinforces the logic and methods that underlie this field, ii) illustrates these with key historical and modern research studies, and iii) makes clear the importance of links to other areas of Life Sciences. This course assumes an introductory-level knowledge of Evolution.

LEARNING OBJECTIVES:

1. Understand the basic principles of Evolutionary Biology, and be able to outline links between mechanisms of evolutionary change and patterns of diversity within as well as across species.
2. Be able to suggest appropriate methodologies and approaches for testing predictions arising from hypotheses in different areas of Evolutionary Biology.
3. Be able to explain how Evolutionary Biology links to other fields of Biology.
4. Be able to make logical inferences from a variety of different types of data, and evaluate how well or poorly a given dataset supports an argument or assertion.
5. Be able to identify, read, and evaluate scientific research papers from the primary literature.
6. Understand how to motivate, support, and engage in productive collaborative work in a professional context.

REQUIRED TEXTBOOK:

Emlen DJ & C Zimmer (2020) Evolution: Making Sense of Life. 3rd Edition. Macmillan. New York.



Please ensure you purchase both the e-book (or hardcopy) and SaplingPlus (the online system). Both are required.

READINGS: Readings in support of lecture material are on the lecture schedule. You should ensure that you UNDERSTAND everything you read, KNOW the theory and examples outlined in lecture and videos and ensure you can follow the additional examples given in the textbook.

LECTURE SLIDES: will be posted to Quercus as pdf files by the night prior to the lecture to allow you to fill in details or refer to figures/tables/references. *Please see the information about Intellectual Property further down in this document.*

**ATTENDING LIVE LECTURE CASTS AND TAKING EFFECTIVE NOTES
ARE CRITICAL FOR SUCCESS!**

Studying from the slides alone is insufficient.

Attending class allows you to ask questions as they arise, or request further explanation. You will keep up with the course material, know where you need help, and improve my ability to assist your learning. With the online delivery of courses this semester it becomes vitally important that you establish and maintain a weekly schedule. Getting behind on lectures and course material creeps up very fast and it often difficult to recover.

ANNOUNCEMENTS: It is your responsibility to be aware of announcements made in class. Major announcements will be posted to Quercus. Reminders are usually on the first couple of lecture slides.

GRADING & EVALUATION:

Quizzes 'Lock it in' evo-shorts (2 x 1% each) 'Evolution' documentaries (2 x 2% each)	6%
Problem Sets 1 & 3 (2 x 2.5% each) (#2 is not marked)	5%
SaplingPlus Learning Curves (17 x 0.53% each)	9%
Evolution Rap Assignment	8%
Midterm Exam	30%
Final Exam	42%

AIDS TO UNDERSTANDING: In addition to the lecture material there are several opportunities to expand, apply, and discuss the course material. These include Evo-Short Video Clips (2), Evolution Documentaries (2), Problem Sets (3), Chapter Learning Curves (17), and the Evolution Rap Assignment (1). Collectively these assignments are worth 28% of your grade.

(A) Examinable Videos & Quizzes. Videos that complement and expand on the lecture material will be made available on the Quercus homepage (see links under the appropriate weekly 'Modules'). These contain examinable material.

Examinable Videos.

1. **Evolution! Documentaries. (x2).** These are full-length films – 'oldies but goodies' – which are excellent reviews of some particular area of Evolutionary Biology. The examples used are classics.
2. **Lock it in! Evo-shorts. (x2).** These brief films expand on research in one particular system that is relevant to lecture material. These are intended to 'Lock in' your understanding of lecture material.

Quizzes for Documentaries and Evo-shorts. There will be a Quercus quiz associated with each of these videos that will contribute to your final grade (see 'Grading & Evaluation' above) and highlight the examinable material from each video. Each quiz must be completed as outlined on the schedule, usually about a week after it is assigned (see schedule for specific dates). Answer keys will be posted after the due dates and can be used as study guides for quiz material.

(B) Problem Sets. Three problem sets will be posted on Quercus during the term. Two of these must be submitted through Quercus and will contribute to your final grade (see 'Grading & Evaluation' above). These problem sets are study tools that test your understanding prior to the term tests & the final exam. They are due by the date/time listed on the schedule, after which answers will be posted.

Quizzes and Problem Sets will be graded as pass/fail only. A pass (and full marks) requires that you submit a reasonable attempt at answering every question (whether it is correct or not) by the posted due date and time. You may complete quizzes and practice problem sets in multiple sessions. Quercus will save your answers as you proceed through the quiz. Be sure to click 'Submit Quiz' only after you have finished all the questions. Assignments are due by 11:59pm on the posted due date.

(C) Sapling Plus Learning Curve Assignments. We will be discussing 17 of the 18 chapters in the textbook. Each chapter has an associated Learning Curve assignment on Sapling Plus. Completed Learning Curves (minimum of 300 points) are **due prior to the start of Lecture each week**. Each is worth 0.53% for a total of 9% of your grade. *SaplingPlus is bundled with your textbook purchase and is available from the Bookstore or Macmillan Publishing.*

(D) Evolution Rap Assignment. In collaboration with Canadian Hip Hop artist Baba Brinkman (bababrinkman.com), we have developed an assignment for this class. Baba's music is rather unconventional. He raps about things like evolution, climate change, medicine, psychology, space travel, and English literature! His lyrics are literally "peer-reviewed!"

We will be working with the song entitled "This View of Life" (<https://youtu.be/vqE2cY1wNuQ>). Your assignment will be to annotate a selection of his lyrics. You will describe the science that supports his lyrics with evidence (e.g. scientific references, images, figures). Further details of this assignment will be communicated within the first few weeks of the term.

Working with Collaborators: Working with others in a study group can be an effective way of exploring your understanding of material. If your preferred learning style involves discussing questions and ideas with classmates, that is totally fine. However, please note the following mandatory rules for assignment collaboration: (1) you must declare the full names of your collaborators (the last option on each assignment provides this opportunity); (2) while you may discuss questions/problems, you **MAY NOT** write the answers collaboratively. Written answers to questions and the actual calculations must be done independently. Collaboratively written answers are a form of plagiarism, and a violation of the academic code (see below).

ASK THE PROF:

Online Office Hours: I will hold weekly office hours using the 'Bb Collaborate' link on the Quercus navigation bar. This is a great chance to get help, discuss the material, or just think about questions other students are asking. Course content questions may also be submitted to the discussion board. I am also very available to arrange office hours by appointment.

Discussion Board: There are two discussion boards, one for student communication with each other (I will not comment on discussions on this board), and one which directs comments/questions to me (although students are also welcomed to comment on threads on this board as well). Your TA, JP, may also participate. The Discussion Board becomes like a running FAQ for the course. I ask that all content related questions are directed to the discussion board so all questions and answers can be shared with the entire class. Responses to Discussion Board questions tend to be far more detailed than an email response. Whether or not you have asked any questions, I recommend that you regularly check the discussion board for new content. Many students find this to be very helpful when studying. Questions are generally answered in 1-2 days.

As always, inclusive and civil discussion conforming to the Student code of conduct is expected. Disagreements and challenging opinions are welcome, but harassment or disparagement of others is not acceptable and will be dealt with promptly.

Email: You may email questions to biob51@utsc.utoronto.ca. Note that this email is checked sporadically through the week, and response time varies accordingly. The email will be monitored by the Instructor and the TAs. Faster responses are possible via Office hours or the Discussion Board. For course administration questions (e.g., I missed the midterm, I just joined the course) email Jennifer Campbell (jac.campbell@utoronto.ca).

Ask the TA: Similar to my office hours, your TAs will also be available to discuss course content. See the beginning of this document for dates and times.

MIDTERM & FINAL EXAM:

Format.

The Midterm will include 2-3 written answer questions and 40-60 multiple choice, matching, true/false, and/or fill-in-the-blank questions. Topics covered are specified on the lecture schedule, and materials for which you are responsible include lecture material and online video content. The Term Test will be 2hrs and will take place during class time (date tba).

The format of the Final Exam will be similar to the Midterm questions, will be 3 hrs in duration, and is scheduled by the Registrar during the Final Exam Period. Roughly 2/3 of the exam will focus on material since the Midterm and 1/3 will be an inclusive with questions spanning the entire course.

Content.

The Midterm and Final Exam will focus on material covered in lecture, assigned videos, Learning Curves, and material from the text to which I have specifically directed you during the lecture. Questions will focus on your understanding of theory, hypothesis testing and mechanisms, evidence in support of these, as well as testing your ability to make inferences from novel examples or data. Straight recall of examples or vocabulary will also be required.

The best way to study for these tests is to:

- 1) Do the quizzes and practice problems and be sure you understand the answers,
- 2) Read and think about examples in the text and in lectures – what do they demonstrate and why? To what theory do they apply?
- 3) Discuss, debate, and converse about the course materials with your peers.

ACADEMIC INTEGRITY: The University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences.

Potential offences in papers and assignments include 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.

For tests and exams, cheating includes using or possessing unauthorized aids, looking at someone else's answers during an exam or test, misrepresenting your identity, or falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

THE UNIVERSITY OF TORONTO'S CODE OF BEHAVIOUR ON ACADEMIC MATTERS APPLIES TO ALL UNIVERSITY OF TORONTO SCARBOROUGH STUDENTS. THE CODE PROHIBITS ALL FORMS OF ACADEMIC DISHONESTY INCLUDING, BUT NOT LIMITED TO, CHEATING, PLAGIARISM, AND THE USE OF UNAUTHORIZED AIDS. STUDENTS VIOLATING THIS CODE MAY BE SUBJECT TO PENALTIES UP TO AND INCLUDING SUSPENSION OR EXPULSION FROM THE UNIVERSITY.

CODE OF BEHAVIOUR ON ACADEMIC MATTERS - SECTION B1

1. It shall be an offence for a student knowingly:

- (a) to forge or in any other way alter or falsify any document or evidence required by the University, or to utter, circulate or make use of any such forged, altered or falsified document, whether the record be in print or electronic form;
- (b) to use or possess an unauthorized aid or aids or obtain unauthorized assistance in any academic examination or term test or in connection with any other form of academic work;
- (c) to personate another person, or to have another person personate, at any academic examination or term test or in connection with any other form of academic work;
- (d) to represent as one's own any idea or expression of an idea or work of another in any academic examination or term test or in connection with any other form of academic work, i.e. to commit plagiarism (for a more detailed account of plagiarism, see Appendix "A") ;
- (e) to submit, without the knowledge and approval of the instructor to whom it is submitted, any academic work for which credit has previously been obtained or is being sought in another course or program of study in the University or elsewhere;
- (f) to submit any academic work containing a purported statement of fact or reference to a source which has been concocted.

ACCESS FOR STUDENTS WITH DISABILITIES: 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 me and/or the AccessAbility Services Office as soon as possible. AccessAbility Services staff (located in Rm AA142) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations 416-287-7560 or email ability@utsc.utoronto.ca. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

ENGLISH LANGUAGE SUPPORT: The academic English used in science texts (and by Professors) tends to be concise with complex grammar that can make it challenging to interpret. Academic English is new to most students in University. If you want help mastering scientific texts, consider taking the free, 20-minute, confidential, Academic English Health Check (AEHC) (link below) and use the free support available at the English Language Development Centre to support your learning (link below).

Academic English Health Check: <https://www.utsc.utoronto.ca/eld/academic-english-health-check-aehc>
English Language Development Centre: <https://www.utsc.utoronto.ca/eld/english-language-development-support-consultations>

MISSED DEADLINES FOR ASSIGNMENTS: Since answer keys are posted after the due date, extensions and make-ups are not possible. Failure to submit as specified, on time, and complete will result in a “0” grade for that component. The ONLY exceptions are for students who add the course after an assignment was due or they are registered with AccessAbility. If this is the case, you must contact Jennifer Campbell immediately after adding the course or recognize the need for accommodation.

MISSED MIDTERM TEST: Students that are unable to attend the Midterm for religious reasons, short-term illness, or several personal circumstance must notify the Course Coordinator (Jennifer Campbell) by email within 3 working days and submit documentation. Students that are unable to attend due to an AccessAbility issue should inform that office and Jennifer Campbell to arrange an accommodation. Students who miss the midterm for a medical reason must present a completed UTSC medical certificate (available via the registrar’s website) that confirms their illness, and medical attention, at the time of the exam. Medical certificates will be verified.

There will be a single make-up for the Midterm for students with a documented excuse or accommodation, as validated by Jennifer Campbell. Alternative arrangements are NOT possible, except as arranged by AccessAbility. The date of the make-up test will be announced on Quercus and it is the SOLE RESPONSIBILITY of the affected student to ensure they are aware of this date. Students that miss a term test with no acceptable, documented excuse will receive a “0” grade for that test. Students that miss a term test and the make-up and have documented, confirmed excuses for both will have their final grades adjusted accordingly.

Students that miss the Final Exam must petition the Registrar to write a deferred exam.

INTELLECTUAL PROPERTY: The University has guidelines around students entering relationships with external organizations offering access to course materials. In these organizations, the intellectual property (IP) rights of the content creators/owners (e.g. of lecture notes, tests, examinations, projects, solution sets, etc.) may be infringed, and may be inconsistent with the University of Toronto’s integrity policies. Students should be aware that their courses contain the IP of their instructor, TA, and/or the University of Toronto.

IP includes items such as:

- Lecture content, spoken and written (and any audio/video recording thereof);
- Lecture handouts, presentations, and other materials prepared for the course (e.g., PowerPoint slides);
- Questions or solution sets from various types of assessments (e.g., assignments, quizzes, tests, final exams); and
- Work protected by copyright (e.g., any work authored by the instructor or TA or used by the instructor or TA with permission of the copyright owner

Sharing this IP without the IP owner’s permission is a violation of IP rights. For this reason, it is necessary to ask the instructor, TA and/or the University of Toronto for permission before uploading and sharing the IP of others online (e.g., to an online repository).

Permission from an instructor, TA or the University is also necessary before sharing the intellectual property of others from completed courses with students taking the same/similar courses in subsequent terms/years. In many cases, instructors might be happy to allow distribution of certain materials. However, doing so without expressed permission is considered a violation of IP rights.

Please alert the instructor if you become aware of IP belonging to others (past or present) circulating, either through the student body or online.

DISCLAIMER: The instructor reserves the right to modify this syllabus and lecture schedule as necessary throughout the term to better achieve course objectives and/or enhance the quality of instruction. As such, the lecture and tutorial outlines provided below are tentative. Notification of changes will be made in class and the most up-to-date version will always be the one available on Quercus. You are responsible for being aware of the contents of this syllabus.