

University of Toronto Scarborough – Department of Biological Sciences
BIOD33 – Comparative Animal Physiology – Fall 2016

Course Instructor: **Dr. Jason Brown**
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Office: Portable 104, Room 110
Office Hours: Thursdays noon-2:30pm, 5:30-8pm
**Additional office hours will be made available prior to exams

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Course Description: This course will focus on the comparative aspects of animal physiology and address how various physiological systems are specialised to meet many of the environmental challenges encountered by terrestrial and aquatic environments. Topics include breathing, cardiovascular physiology, nutrition/feeding, energetics, thermal regulation, hibernation and ionic/osmotic regulation.

Prerequisites: BIOC33H3 or BIOC34H3

Exclusions: BGYD33H3



Sustainability: This course is recognized as a UTSC Green Course, meaning it has steps in place to reduce the amount of course-generated paper. Those particular steps are double-sided printing of exams, electronic submission and grading of all assignments, and no textbook.

Lectures: Thursdays 3:10-5pm in BV363
**We will take one brief (~ 5min) break during class

Lecture notes will be posted (in PowerPoint format only) on Blackboard ~24 hours before each lecture. **NOTE: I reserve the right to make changes to the lecture notes after they are posted.** Students are encouraged to use digital copies of these notes for note-taking in class; however, if students prefer to print these notes, they are encouraged to use double-sided printing and/or scrap paper.

Within one week of each lecture, an *optional* quiz (here *optional* means not worth any marks) will be posted on Blackboard. These quizzes will allow students to i) assess their understanding of the lecture content, ii) think critically and creatively about lecture content by applying it to novel situations and problems, and iii) prepare for the Term Tests and Final Exam. ***Students are strongly encouraged to discuss these quizzes with the course instructor when they encounter any difficulties, either by email or during office hours (preferred).***

Textbook: There is no textbook for this course. It may be worthwhile, however, to have access to an introductory animal physiology textbook in case you need to review any basic physiological concepts that underlie the advanced physiological concepts discussed in this course. *A basic animal physiology textbook is available via course reserve at the library.* This course will be taught primarily using studies from the primary scientific literature. References for the studies used will appear on the lecture slides so that, if desired, students can read these studies further on their own time. This is not required, however.

Evaluation:

Term Tests	35%	(23% best; 12% worst)
Podcast Assignment	30%	
Final Exam	35%	

Important Notes Regarding Evaluations:

Term Tests

There are two Term Tests in this course. The dates and times of the Term Tests will be determined by the Registrar's office during the first few weeks of the semester, and I will post this information on Blackboard as soon as it is available.

The Term Tests are not cumulative. The lectures covered on each Term Test will be announced in class and on Blackboard. Term Tests will be 2 hours and will comprise of short answer questions only. **Students will be evaluated primarily based on the reasonableness and clarity of their written answers.** Students will have some choice with regards to which questions they answer (e.g., answer 1 of 2 short answer questions). **The Term Test questions will require students to think critically and creatively about the lecture content by applying it to novel situations and problems; this reflects how important I believe it is that students learn to develop competency for thinking, reasoning, and scientific inquiry. Some questions may also require that students utilize knowledge gained from other biology courses, which reflects that, as senior biology students, you should be capable of synthesizing concepts from various biological disciplines.** The optional online quizzes will help students to prepare themselves to tackle such questions successfully.

If you know **in advance** that you cannot write a Term Test at the scheduled time because it conflicts with some other **valid activity**, please notify me as soon as possible so that we can make arrangements for you to write the Term Test at an alternative time. **Any such alternative time must be before the scheduled date of the Term Test.**

If you miss a Term Test due to medical illness, then you must submit a detailed UTSC Medical Certificate filled out by the physician who saw you on the day of the Term Test. This note must be submitted to the course instructor as soon as possible following the Term Test, whether in person or via email. Other medical notes will not be accepted, and if the UTSC Medical Certificate

is not completed to the satisfaction of the course instructor, it may be refused. The UTSC Medical Certificate can be found via the following link:

http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf.

If you miss a Term Test for any other valid reason, please consult with the course instructor as soon as possible. The course instructor will determine whether the reason given for a missed Term Test is valid in accordance with university policies. Also, the course instructor may ask for any documentation required to verify the reason given.

Students who miss one Term Test for a valid reason (medical or otherwise) will not be permitted to write a make-up Term Test; rather, the weight of the remaining Term Test will be increased to 35% of their final grade. Students who miss both Term Tests for valid reasons will not be permitted to write make-up Term Tests; rather, the weight of their Final Exam will be increased to 65%, and they will be asked to submit an additional written assignment worth 5%, which will be due no later than the last day of classes. **Under no circumstances will the weight of a missed Term Test be transferred to the Final Exam, so please do not ask.**

Students who miss a Term Test for any invalid reason will receive a grade of zero for that Term Test.

Podcast Assignment

The details of the Podcast Assignment will be outlined in a PowerPoint presentation given during the first class. This presentation will be posted on Blackboard along with this syllabus and will constitute part of this syllabus.

Final Exam

The Final Exam (3 hours) will be scheduled by the Registrar's office (December 5-20). The Final Exam will cover all material covered in the lectures throughout the course, though it will place considerable emphasis on the material covered since the last Term Test. It will have the same format and emphases as the Term Tests.

Schedule:

Lecture Topics to be Covered:

- 1 – Life at High Altitude
- 2 – Life in Hypoxic and Anoxic Waters
- 3 – Life in Arid Environments
- 4 – Life in the Estuary
- 5 – Dogma and Controversies in the Handling of Nitrogenous Wastes
- 6 – Life in the Cold: Mammalian Torpor
- 7 – Life in the Cold: Insect Cold Tolerance
- 8 – Environmental Effects on the Cost of Locomotion
- 9 – Life in the Deep Ocean
- 10 – Life in the Urban Environment

**Some topics may not be covered unless time permits

Podcast Deadlines:

October 7th at noon

October 21st at noon

November 4th at noon

November 18th at noon

December 2nd at noon

Accessibility Needs:

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. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. 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.

Academic Integrity:

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, 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 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. There are other offences covered under the Code, but these are the most common. ***Please respect these rules and the values that they protect.***