

University of Toronto Scarborough – Department of Biological Sciences  
**BIOB34 – Animal Physiology – Fall 2020**

**Course Instructor:** **Dr. Jason Brown**  
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Office Hours:  
By appointment only:  
<https://outlook.office365.com/owa/calendar/UniversityofTorontoScarborough2@utoronto.onmicrosoft.com/bookings/>  
\*\*NOTE: You must book your appointment at least 6 hours in advance; appointments are 15 minutes

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**Course Description:** An introduction to the principles of animal physiology rooted in energy usage and cellular physiology. A comparative approach is taken, which identifies both the universal and unique mechanisms present across the animal kingdom. Metabolism, respiration, circulation, water regulation, movement, and neural circuits are the areas of principal focus.

**Prerequisites:** BIOA01H3 and BIOA02H3 and CHMA10H3 and CHMA11H3

**Exclusions:** (BIOB30H3), BIO270H, BIO204H

**Lectures:** *This is an online asynchronous course.* Approximately two lecture hours will be recorded each week and made available through Quercus in .mp4 format. Lecture notes (in PowerPoint format) will be made available at the same time.

Tentative Lecture Topics:

- |                                    |                            |
|------------------------------------|----------------------------|
| 1 – What are Animals?              | 5 – Respiratory Physiology |
| 2 – Metabolic Rate                 | 6 – Nervous Physiology     |
| 3 – Thermal Physiology             | 7 – Nitrogen Excretion     |
| 4 – Feeding & Digestive Physiology |                            |

**Textbook:** There is no required textbook for this course; however, in my experience, many students enjoy having a textbook to supplement their lecture notes. If you so desire, I would recommend the following textbook, which is available at the UTSC Bookstore:

*Animal Physiology*, 4<sup>th</sup> edition, 2016, by R.W. Hill et al.

I will post suggested readings, where applicable, from this textbook; however, this textbook may discuss material not covered in class, and I may discuss material in class not covered by the textbook. **You are only responsible for the material covered in class.**

### **Evaluation:**

*If you are taking BIOB90:*

Term Tests	33%	(23% best; 10% worst)
“90-Second Zoologist” Podcasts	20%	
BIOB90 Integrative Research Poster Project	10%	
Weekly Quizzes	2%	
Final Exam	35%	

*If you are not taking BIOB90:*

Term Tests	33%	(23% best; 10% worst)
“90-Second Zoologist” Podcasts	30%	
Weekly Quizzes	2%	
Final Exam	35%	

### **Important Notes Regarding Evaluations:**

#### **Term Tests**

There will be two Term Tests in this course, **which will be held online via Quercus**. 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 Quercus as soon as it is available.

Term Tests may examine any material covered in this course, but the lectures emphasized on each Term Test will be announced on Quercus. Term Tests will be 2 hours and will comprise of multiple-choice questions only. Students will have choice with regards to which questions they answer (e.g., answer 24 of 30 multiple choice questions). **The Term Test questions will require students to think critically and creatively about the lecture content as students will be expected to explain novel observations and solve problems. This reflects my belief that undergraduate students need to develop not only their scientific knowledge but, more importantly, their competency for thinking, reasoning, and scientific inquiry.**

To help students prepare for the Term Tests, and to encourage students to stay up-to-date with the course material, weekly quizzes will be posted on Quercus. Students who complete all the weekly quizzes on time (i.e., by the end of the week following the lecture) will receive 2% towards their final course grade. Students who do not complete all the weekly quizzes on time will see the value of their final exam increase by 2%, allowing them to still earn those marks. Students are strongly

encouraged to discuss these quizzes with the course instructor when they encounter any difficulties, either by email or during office hours.

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 the course instructor as soon as possible so that arrangements can be made 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 Self-Declaration of Student Illness Form, which is available at the following link:

<https://www.utoronto.ca/biosci/sites/utoronto.ca/biosci/files/u26/Self%20Declaration%20of%20Student%20Illness%20Fall%202018.pdf>

This form must be submitted to the course coordinator via email **within three days** after the Term Test has taken place.

If you miss a Term Test for any other valid reason, please consult with the course coordinator as soon as possible. The course coordinator will determine whether the reason given for a missed Term Test is valid in accordance with university policies. Also, the course coordinator 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 their Final Exam will be increased by 10%. (The weight of their remaining Term Test will be 23%).

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 by 33%.

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

### **“90-Second Zoologist” Podcasts**

The objective of this assignment is three-fold: i) to encourage students to become more familiar with the native fauna of Ontario; ii) to provide a relaxed platform in which students can explore the primary scientific literature; and iii) to help students learn to engage with the general public about scientific research.

Each week of the semester, a photograph of an animal will be posted on Quercus. Using this picture as a starting point, students, **working in groups of three**, will:

1. Identify the animal to species. [NOTE: All animals will be native to Ontario.]
2. Find a published article in the primary scientific literature (i.e., in a scientific journal) about the species. Physiology-related articles are preferable, but not required.
3. Make a 90-second podcast explaining what the research described in the article found (i.e., what were the major results of the research) and, most importantly, why these findings are

significant. In explaining the significance of the research findings, consider that the audience for this podcast is the general public, who contributed to this research through taxation and who are entitled to some justification of their financial expenditure. (Make sure you mention the species name in the podcast so that we will know that you identified it correctly.) [NOTE: The podcast must be exactly 90-seconds.]

4. Submit the podcast (as an .mp3 file) via the appropriate link on Quercus. Give the reference for the chosen research article in the submission comments.

#### Groups:

Groups will be assigned randomly. You should be able to see and contact your group members by going to [q.utoronto.ca/groups](http://q.utoronto.ca/groups) and clicking on "Podcast Group x". Use the "Discussions" tab to make initial contact with your group members. If your group members drop the course leaving you alone, please contact the course instructor ASAP in order to be reassigned to a new group.

#### Evaluation:

For each podcast completed (to a maximum of 12 submissions; no more than one submission per week), students will earn marks toward their final course grade as follows:

- 1.5 marks – Animal is correctly identified
- 1.5 marks – Podcast is deemed acceptable (see below)
- 1.5 marks – Podcast highlights research done by individuals from underrepresented communities (see below)
- 1.5 marks – Podcast is judged to be among top 10 of all podcasts submitted that week

Podcasts will be deemed acceptable if i) they meet the requirements outlined above, and ii) they are of a quality expected from a 2<sup>nd</sup>-year student at UTSC. In all cases where a podcast is deemed unacceptable, feedback will be provided so that the students understand how to improve future podcast submissions.

The University of Toronto is committed to supporting scholars who are black, indigenous, people of colour, female, and/or LGBTQ. One way to support such scholars is to highlight their excellent contributions to scientific research. For this reason, podcasts that highlight research conducted by individuals from underrepresented communities will receive additional marks. To receive these additional marks, the podcast must mention the name of the individual(s) and to which underrepresented community(ies) they belong. These individuals must be authors on the paper being discussed in the podcast, and can be undergraduate/graduate students, postdoctoral fellows, or faculty members. You must mention at least one biographical aspect for the individual. In this regard, it may be worthwhile to reach out to the individual via email to let them know that you will be discussing their research in a podcast created for your coursework at UTSC and ask them if there is any information about themselves that they would be interested in sharing with the audience.

Students are encouraged to post their podcasts to their social media accounts in order to share their work with others. The course instructor will post the top 10 podcasts from each week to his personal social media accounts. **If your podcast is selected but you would prefer not to have it posted, please let the course instructor know via email.**

Students may complete podcasts each week until they have accumulated 30 marks (as this assignment is worth 30% of the final grade; or 20 marks for students enrolled in BIOB90). Once a student has accumulated 30 marks, they are no longer required to submit podcasts, at least not for grades. At the end of the semester, any portion of the 30% value of this assignment that has not been earned will be transferred to the weight of the Final Exam. Therefore, if students are unable to complete their podcast for a given week, they do not need to submit a Self-Declaration of Illness Form as they will not be losing any marks but rather having the weight of their missed podcast shifted to their Final Exam.

There are several free online programs available for creating high-quality podcasts. One such program is Audacity. Another one that might be particularly useful if you want to record audio from several people located remotely onto a single file is Cleanfeed.

An example of this assignment is posted on Quercus for reference.

### **BIOB90 Integrative Research Poster Project**

Students enrolled in BIOB90 should visit the BIOB90 Quercus course page for information about this project. Their grade on the poster project counts for 10% of their final grade in this course.

### **Final Exam**

The Final Exam will be scheduled by the Registrar's Office (December 10-22 [including Sundays]) and will be worth 35% of the final grade (unless, for reasons stated above, it has a higher weight). It will be 3 hours and will cover all course material, though it will place emphasis on the material discussed since the last Term Test. It will have the same format as the Term Tests.

## 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](mailto: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.***

## Copyright in Instructional Settings:

If a student wishes to audio-record, photograph, video-record, or otherwise reproduce lecture presentations, course notes, or other similar materials provided by instructors, he or she must obtain the instructor's written consent beforehand. Otherwise, all such reproduction is an

infringement of copyright and is absolutely prohibited. In the case of private use by students with disabilities, the instructor's consent will not be unreasonably withheld.