



ZOO*3630 Lab Studies in Animal Physiology II

Winter 2020

Section(s): C01

Department of Integrative Biology

Credit Weight: 0.25

Version 1.00 - November 01, 2019

1 Course Details

1.1 Calendar Description

In this hands-on laboratory course, students will apply skills and techniques to conduct experiments on living animals with the goal of characterizing physiological processes. Students will advance their writing skills through preparation of several full lab reports. The last experiment in the course is a self-directed study where students will develop hypotheses, generate and test predictions and design the experiment using tools they have learned in the course.

Pre-Requisites:	ZOO*3610
Co-Requisites:	ZOO*3620
Restrictions:	ZOO*3210

1.2 Course Description

In this hands-on laboratory-based course, students will learn and apply skills and techniques to conduct exercises using animals (goldfish, frogs) and animal tissues (trout) with the goal of characterizing physiological processes. Students will advance their writing skills through preparation of several full lab reports.

1.3 Timetable

- Labs will be held in SSC 3314 and are scheduled approximately weekly for a total of 9 lab days.
 - Section 101: Monday (2:30-5:20PM)
 - Section 102: Tuesday (2:30-5:20PM)
 - Section 103: Wednesday (2:30-5:20PM)

1.4 Final Exam

Course does not employ a final exam.

2 Instructional Support

2.1 Instructional Support Team

Instructor: Peter Smith
Email: pssmith@uoguelph.ca
Office: SSC 3313

2.2 Teaching Assistants

Teaching Assistant: TBA TBA
Teaching Assistant: TBA TA

3 Learning Resources

3.1 Required Resources

Comparative Animal Physiology II Lab Manual (Lab Manual)

Dissecting Kit (Equipment)

Sharpie Marking Pen (Equipment)

Courselink (Website)

<https://courselink.uoguelph.ca>

This course will make use of the University of Guelph's course website on D2L (via Courselink). Consequently, you are responsible for all information posted on the Courselink page for ZOO*3630. Please check it regularly. Course notes, announcements, and ancillary material will also be posted here.

3.2 Recommended Resources

Lab Coat (Equipment)

4 Learning Outcomes

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Formulate testable hypotheses and then carry out simple experiments to test hypotheses
2. Measure oxygen consumption by live animals, enzyme activities, plasma osmolarity and

- nitrogen excretion rates in animals
3. Collect and organize high quality data
 4. Generate properly formatted graphs and tables
 5. Interpret experimental results
 6. Write a coherent and concise laboratory report
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5 Teaching and Learning Activities

5.1 Course Content

Dates:	Lab Topic	Assignment	% mark
Jan.13-22	Metabolic rate in goldfish	Lab Report	20
Jan.27-29	Intro to measure of kinetic activity	In-lab calculation and data sheet	5
Feb.03-12	Enzyme kinetics	Lab Report	25
Feb. 17-21	Reading Week Break	No Labs	
Feb 24- Mar.04	Osmotic regulation	Lab Report	25
Mar. 09-18	Nitrogen excretion	Lab Report	25

6 Assessments

6.1 Assessment Details

Lab Report 1 (20%)

Date: See Dropbox

Learning Outcome: 1, 2, 3, 4, 5, 6

Lab Assignment 1 (5%)

Date: See Dropbox

Learning Outcome: 1, 2, 3, 4, 5

Lab Report 2 (25%)

Date: See Dropbox

Learning Outcome: 1, 2, 3, 4, 5, 6

Lab Report 3 (25%)

Date: See Dropbox

Learning Outcome: 1, 2, 3, 4, 5, 6

Lab Report 4 (25%)

Date: See Dropbox

Learning Outcome: 1, 2, 3, 4, 5, 6

6.2 Note

- Check the Courselink D2L Dropbox for your class section for specific due dates of assignments.
- There are no lab exams, mid-term, or final exams.

7 Course Statements

7.1 Use of Animals

This course uses tissues from selected vertebrates for work in lab. The University is committed to principles of conducting research and teaching in accord with the highest ethical standards. Given that the use of animals, in research and teaching, is a critical aspect of the work of the University of Guelph, the Department of Integrative Biology is committed to minimizing the use, pain, and suffering of animals used for teaching and to ensuring that animals which are used will receive care and treatment that meets or exceeds the standards outlined by provincial guidelines and statutes, and by the Guidelines of the Canadian Council on Animal Care. For more information:

http://www.uoguelph.ca/research/assets/acs/docs/university_animal_care_policy_and_procedures

7.2 Attendance

This lab-based experiential learning course requires in-lab attendance and participation of each student for the experiential component of the course (lab work and data generation) to subsequently also participate in the report writing component of the course. Participation in the data gathering aspects of the labs are a part of the subsequent assignment. Medical excuses are required for missed labs.

7.3 Grading

- Late Policy: Lab assignments and reports are due on the specified date. There are no extensions. The late penalty is 10% of assignment value per day or part thereof.
- Lab Reports: Grades will be assigned according to the standards outlined in the U of G Undergraduate Calendar (p40 - 41).

8 Department of Integrative Biology Statements

8.1 Academic Advisors

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

8.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. <http://www.learningcommons.uoguelph.ca/>
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: <http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics-help> and <http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help>

8.3 Wellness

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. <https://www.uoguelph.ca/counselling/>
- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>

- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations.
<http://www.selfregulationskills.ca/>

9 University Statements

9.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

9.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

9.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

9.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

9.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website
<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website
<https://www.ridgetownc.com/services/accessibilityservices.cfm>

9.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community—faculty, staff, and students—to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

9.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

9.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>
