

# BIOL 401

## Experimental Approaches to Animal Physiology

Winter Term (2016-2017)

### CALENDAR DESCRIPTION

Laboratory -based course emphasizing experimental approaches to understanding the principles of animal physiology covered in BIOL 339/3.0.

COREQUISITE BIOL 339/3.0.

### SCHEDULE

Lab (Biosci 3306):

Wed 2:30-5:30 (section 001), or

Thurs 2:30-5:30 (section 003)

Tutorial (Biosci 3110):

Fri 2:30-3:30

<b>Course Instructors</b>	Dr. Y. Wang (course coordinator) <a href="mailto:yuxiangw@queensu.ca">yuxiangw@queensu.ca</a> , 613-533-6134, Biosci 3508 Dr. B. Vanderbeld (program associate) <a href="mailto:vanderb@queensu.ca">vanderb@queensu.ca</a> , 613-533-6000 x77438, Biosci 2321
<b>Office Hours</b>	Please schedule by email

### Textbooks, Readings

There is no required textbook for this course, but students should make use of undergraduate textbooks in physiology and biochemistry to clarify uncertainties about the material. Lab manual PDFs will be posted on onQ.

### Learning Objectives

The goal of this course is to give students hands-on experience with many of the tools and techniques used in animal physiological research. Whether you have taken BIOL330 previously, or are taking it concurrently, the lab experience will help you understand the basic design and function of physiological systems.

Students will:

- Gain expertise using diverse tools and equipment used in laboratory-based physiological studies.
- Gain an improved understanding of the function of animal physiological systems through experimental approaches and hands-on learning.
- Develop an understanding of how experiments are designed, and the importance of controls and analyses.
- Learn how to prepare reports with specific requirements, integrating what is known from previous studies with novel data collected in lab.

**Learning Hours:**

<i>Teaching method</i>		<i>Average hours per week</i>	<i>Number of weeks</i>	<i>Total hours</i>
In-class hours	Lectures	0	0	0
	Laboratories	3	12	36
	Tutorials/Group Learning	1	12	12
Other	Online activities	0	0	0
	Private study	5	12	60
Estimated total learning hours				108

**Course Outline**

The following is a tentative schedule. Circumstances may arise over the duration of the course that will result in scheduling changes. Plan to be in the lab each week of the course, and attend each tutorial.

**Week 1:** Introduction

**Weeks 2-3:** Behavioural physiology

**Weeks 4-6:** Respiration and metabolic rate

**Weeks 7-8:** Nitrogen excretion

**Weeks 9-12:** Metabolites

**Tentative Grading Scheme**

<b>Component</b>	<b>Weight (%)</b>	<b>Date</b>
Pre-lab prep quizzes and experiment outlines (5 @ 4% each)	20%	TBA
Independent lab proposals (3 labs, grading weight varies)	20%	TBA
Independent lab write-ups (4 labs, grading weight varies)	60%	TBA

**Grading Method**

In this course, some components will be graded using numerical percentage marks. Other components will receive letter grades, which for purposes of calculating your course average will be translated into numerical equivalents using the Faculty of Arts and Science Letter Grade Input Scheme.

When letter grades are employed, the following scale will be employed for purposes of calculating your course average:

***Arts & Science Letter Grade Input Scheme***

<b>Assignment mark</b>	<b>Numerical value for calculation of final mark</b>
A+	93
A	87
A-	82
B+	78
B	75
B-	72
C+	68
C	65
C-	62
D+	58
D	55
D-	52
F48 (F+)	48
F24 (F)	24
F0 (0)	0

Your course average will then be converted to a final letter grade according to Queen's Official Grade Conversion Scale:

***Queen's Official Grade Conversion Scale***

<b>Grade</b>	<b>Numerical Course Average (Range)</b>
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	49 and below

### **Academic Integrity and Queen's Code of Conduct**

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments and conduct conform to the principles of academic integrity. Information is available from the instructor of this course and on the Biology Department's website:

(<http://biology.queensu.ca/academics/undergraduate/prepare-yourself/>). Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulations on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

### **Accommodation Policy, Exam Conflicts, and Other Conflicts**

Students who feel they need accommodations for disabilities or extenuating circumstances, or have a conflict between exams or other commitments should consult the Biology Department's website for details about how to proceed (<http://biology.queensu.ca/academics/undergraduate/prepare-yourself/>). In general, the earlier your instructor is apprised of an extenuating circumstance, the more likely an accommodation can be made. Students are encouraged to be proactive in anticipating difficulties, when it is possible to do so.

### **Late Policy**

Late assignments will be penalized at 5% per day.

### **Copyright**

Course material for Biol401 is copyrighted and is for the sole use of students registered in Biol401.

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### **Disability Accommodations Statement**

Queen's University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact Student Wellness Services (SWS) and register as early as possible. For more information, including important deadlines, please visit the SWS website at: <http://www.queensu.ca/studentwellness/>