

**University of Guelph, College of Biological Science  
Department of Integrative Biology**

**DRAFT COURSE OUTLINE**

**Experimental Comparative Animal Physiology (ZOO\*4170), Winter 2015 (3-3) [0.5]**

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**COURSE DESCRIPTION**

In this course an experimental approach to the study of physiological mechanisms and adaptive responses to changes in the environment will be the primary topics. The focus of the course will be on laboratory exercises. The Lecture portion will support the laboratory sections and also focus on the development of oral presentation skills.

*Prerequisite(s):* 1 of BIOM\*3110, BIOM\*3200, HK\*3940, ZOO\*3200, ZOO\*3210.

**TEACHING TEAM**

**Professor:**

Dr. Amy Newman, Office SCIE 1467, ext. 56595, [newman01@uoguelph.ca](mailto:newman01@uoguelph.ca) Office hours: by appointment

**Lab Instructors:**

Colin DeMill, Office SCIE 3511, ext 56557 [cdemill@uoguelph.ca](mailto:cdemill@uoguelph.ca)

Peter Smith, Office SCIE 3313, ext. 53676 [pssmith@uoguelph.ca](mailto:pssmith@uoguelph.ca)

**Teaching Assistant:** TBD

**COURSE SCHEDULE**

**LECTURES**

Lectures will be held in the MacKinnon Bldg (MACK) room 228 on Tues and Thurs 10-11:20am. This course differs from most others in that the lecture material largely supplements the laboratory experience. The course is "learner-centred". The focus of the lectures will be in developing oral presentation skills and constructive critical peer review skills using the information covered in labs as inspiration. Initially, classic studies in the primary literature will be analyzed to provide context for the labs; afterwards, students will choose a contemporary topic in comparative animal physiology about which to research and present to the class.

**LABORATORY**

Laboratories will be held in SCIE 3305 (see *Schedule*)

Section 101 – Mon. 2:30-5:20 PM; Section 102 – Tue. 2:30-5:20 PM

Participation in laboratory sessions is mandatory. The initial six laboratory exercises are done simultaneously by all student groups, but each group does a different exercise on the same day (i.e. each group rotates through the first six exercises). For exercises #7 and #8, half of the class will do one exercise on the same day while the other half will carry out the other experiment. Group-specific laboratory schedules will be determined during the first intro lab; maximize group size is approx 3 students. Every student must attend and participate in all labs in order to get credit for the lab report. No alternate assignments will be accepted for any of the lab exercises. Students are asked not to use cameras and / or cell phones in the lab. This course involves participation in laboratory exercises that use live animals and animal preparations.

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## OBJECTIVES & LEARNING OUTCOMES

The major theme of this course concerns how physiologists collect data and what happens to the data after it is collected; and developing oral presentations skills. A primary objective is to understand and appreciate basic measurement techniques used in comparative animal physiology and to communicate these findings. To achieve this goal, students will:

1. *Cooperate and collaborate* in small groups to perform a diverse array of laboratory experiments using techniques taken from the fields of molecular biology, biochemistry, neurophysiology, endocrinology, muscle- and cardio-physiology.
2. *Analyze* physiological laboratory data and write lab reports detailing the results.
3. *Develop* math skills for data analysis and bioinformatics using a problem-based approach and exercises.
4. *Appreciate* the applicability of the lab exercises to the body of scientific literature by *applying* insights gained in the lab to the reading and *synthesis* of primary research articles.
5. *Practice and demonstrate* advanced presentation skills in scientific communication by developing a group presentation.
6. *Critique* and provide constructive feedback for peers; incorporate feedback from peers.
7. *Synthesize* information from current literature then *design* and deliver an individual oral presentation.

## RESOURCES:

### Textbook:

There is no textbook. Students are required to read articles from the primary literature. Hill et al., is on reserve in the library for background reading.

### Lab Manual:

ZOO\*4170 Laboratory Manual. Please purchase from the Integrative Biology Department prior to the first lab period. The cost is \$10.00.

### Courselink:

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\*4170. Please check it regularly.

### Undergraduate Calendar

The Undergraduate Calendar is the source of information about the University of Guelph's procedures, policies and regulations, which apply to undergraduate programs. It can be found at: [Undergraduate Calendar](#)

TENTATIVE CLASS SCHEDULE		WHAT IS DUE	LAB SCHEDULE		
<b>Jan</b>	6	Introduction			
	8	Lecture-Oral Presentations			
	13	Class time: group presentation		<b>Jan</b>	13-14 Lab Intro
	15	Group Presentations	Group Presentations – in class		
	20	Feedback: Peer Review; Independent Assignment Intro	Presentation schedule – in class	<b>Jan</b>	19-20 Lab 1
	22	Independent Assignment Intro and Condensations			
	27	Lecture: Special Topic	Lab Report 1; Jan 26-27	<b>Jan</b>	26-27 Lab 2
	29	Lecture: Special Topic			
<b>Feb</b>	3	Initial Presentations	Article Condensation 1: Feb 1 Lab Report 2; Feb 2-3	<b>Feb</b>	2-3 Lab 3
	5	Initial Presentations			
	10	Initial Presentations	Lab Report 3; Feb 9-10	<b>Feb</b>	9-10 Lab 4
	12	Initial Presentations	Peer Reviews: Feb 13		
	17	Reading Week		<b>Feb</b>	16-20 BREAK
	19	Reading Week			
	24	Secondary Presentations	Article Condensation 2: Feb 22 Lab Report 4; Feb 23-24	<b>Feb</b>	23-24 Lab 5
	26	Secondary Presentations			
<b>Mar</b>	3	Secondary Presentations	Lab Report 5; Mar 2-3	<b>Mar</b>	2-3 Lab 6
	5	Secondary Presentations	Peer Reviews March 6		
	10	Lecture: Special Topic	Lab Report 6; Mar 9-10	<b>Mar</b>	9-10 Lab7/Lab8A
	12	Class Prep			
	17	Final presentations	Article Condensation 3: March 16 Lab Report 7; Mar 16-17	<b>Mar</b>	16-17 Lab8A/Lab8B
	19	Final presentations			
	24	Final presentations	Lab Report 8; Mar 23-24	<b>Mar</b>	23-24 Lab8B/Lab7
	26	Final presentations			
	31	Final presentations	Lab Report 7/8; Mar 30-31		
<b>Apr</b>	2	Final presentations	Peer Reviews April 2		

### TENTATIVE EVALUATION (subject to change)

FORM OF ASSESSMENT	WEIGHT	LEARNING OUTCOME ADDRESSED
A. LAB REPORTS (8 X 6.5%)	52	1,2,3
B. GROUP PRESENTATION	2	4,5
C. PARTICIPATION	10	5, 6
D. ARTICLE CONDENSATIONS (3 x 2%)	6	4
E. INDIVIDUAL PRESENTATIONS	20	4,6,7
F. PEER REVIEWS	10	6

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## **COURSE AND UNIVERSITY POLICIES:**

### **Late Policy**

No extensions on assignments. Any assignment received after 2:30 pm on the due date is late. Late assignments will receive a penalty of 25% of the assignment value per day, including the date due, to a maximum of 4 days.

### **Absence and Illness**

If you are absent from classes during the semester, you will be expected to make up missed lecture material on your own. Medical or compassionate documentation is required to miss any lab. This documentation must be submitted to Peter Smith as soon as possible after your absence. If no documentation is provided, the assigned mark will be 0%.

When an assignment is missed, you must notify the instructor in writing, with your name, id#, and e-mail contact as soon as possible. If requesting academic consideration on medical or compassionate grounds, be prepared to provide supporting documentation. Dates of incapacitation stated on the note must, of course, cover the date of the missed assignment. The original paper copy of the note must be delivered to the course instructor (for missed autorhythm report, bioinformatics report or missed presentation) or lab instructor (missed lab) within 5 days of the missed assignment (weekends included), or a mark of 0% will be assigned. Notes will not be returned.

See the undergraduate calendar for information on regulations and procedures for Academic Consideration: [Undergraduate Calendar - Academic Consideration](#)

### **E-mail Communication**

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

### **Drop Date**

The last date to drop Winter 2015 courses, without academic penalty, is the 40<sup>th</sup> class day. For regulations and procedures for Dropping Courses, see the Undergraduate Calendar: [Undergraduate Calendar - Dropping Courses](#)

### **Oral Presentations**

Presentations will be delivered using powerpoint: your own computer may be used or my computer will be available during lecture. You may bring your computer to lecture, but only use the computer for lecture and course related activities.

### **Lab Assignments**

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

### **Accessibility**

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's

shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible. For more information, contact CSD at 519-824-4120 ext. 56208 or email [csd@uoguelph.ca](mailto:csd@uoguelph.ca) or see the website: [Centre of Students with Disabilities](#)

### **Academic Misconduct**

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 discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Unless explicitly stated, all assignments are to be completed and submitted as independent work.

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.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar: [Undergraduate Calendar - Academic Misconduct](#)

### **Recording of Materials**

Presentations which are made in relation to course work—including lectures—cannot be recorded in any electronic media without the permission of the presenter, whether the instructor, a classmate or guest lecturer.

### **Course Evaluation information**

CCS now provides the U of G Online Course Evaluation System in a secure, online environment. End of semester course and instructor evaluations provide students the opportunity to have their comments and opinions form part of the information used by Promotion and Tenure Committees in evaluating the faculty member's contributions in the area of teaching. Course evaluations are now conducted through this web site. Login with your central email account login ID and password: [Course Evaluation](#)

Please Note: Instructors do **NOT** receive evaluations until the end of exam period. Furthermore, evaluations are anonymous, unless you specifically indicate you want to acknowledge your comments.