Department of Biology Course Outline

SC/BIOL 3060 4.00 Animal Physiology I
Fall 2021
This course consists of a mixture of online and mandatory in-person components

Course Description

Fundamental concepts in sensory, neural, and behavioural physiology. The biochemical mechanisms whereby nerve cells detect and transmit information and the processes whereby information is integrated in the nervous system and gives rise to the outputs of behaviour.

Prerequisites (strictly enforced)

SC/BIOL 2020 3.00, SC/BIOL 2021 3.00, SC/BIOL 2030 4.00

Course Format, Hardware and Software Requirements

This course consists of a mixture of online and mandatory in-person components. Students must have a laptop or desktop computer with a microphone. Access to reliable high-speed internet is required. Some aspects of the course will involve Zoom video conferencing software. Microsoft Office, including Word, Excel, and Power Point, are strongly recommended.

The lecture component of this course will be delivered completely online. Virtual lecture sessions will be asynchronous (recorded), with some synchronous sessions detailed below. Timetabled, synchronous sessions will be used for tests, review sessions, and guest lectures. All times in Eastern Time (ET).

The laboratory component of this course will be delivered through a mixture of in-person and virtual (online) laboratories. Virtual laboratory sessions will be synchronous (live) and attendance is mandatory. See "Course Policies" section for details on missed laboratories. **Labs are a mandatory component of BIOL 3060.** You MUST attend only the lab section in which you are registered.

Course Instructor and Contact Information

Instructor: Dr. Ryan Schott

- Email: schott@yorku.ca. Please include 'BIOL 3060' in the subject line.
- Virtual Office Hours: by appointment.

Lab Coordinator: Farwa Sajadi

- Email: farwa@my.yorku.ca. Please include 'BIOL 3060 Labs' in the subject line. Main contract for questions regarding the labs.

Copyright Protection of Course Material

Schedule

Lectures: The lectures will be pre-recorded (asynchronous) and posted on the course website on Monday and Wednesday mornings at approximately 1:30 p.m. It is not necessary to virtually attend lectures during the 1:30–2:30 time slot. The timetabled Friday slot (1:30–2:30pm) will be used synchronous sessions including tests, review sessions, and guest lectures.

Type	Day	Time	Frequency	Attendance
Lectures-Asynchronous	Monday and Wednesday	By 1:30pm	Weekly	Not Applicable
Midterms-Synchronous	Friday	1:30–2:30pm	See below	Mandatory
Review Sessions-Synchronous*	Friday	1:30–2:30pm	See eClass	Optional
Guest Lectures-Synchronous*	Friday	1:30–2:30pm	See below	Mandatory

*Virtual synchronous sessions will be recorded for later viewing.

Laboratories:
The laboratory component of this course will be delivered through both in-person and virtual (online) laboratories. Virtual laboratory sessions will be synchronous (live) and attendance is mandatory. See "Course Policies" section for details on missed laboratories.
Labs are a mandatory component of BIOL 3060.
You MUST attend only the lab section in which you are registered.

Labs run on a three week schedule. **Please refer to the Lab Schedule on the eClass course website for specific dates times of each lab and due dates for the four lab reports.**

Evaluation

Lecture Work (62% Total)
Review Quizzes — 6% total
Three (3) Midterm Tests — 50% total:

- Lecture Test 1 (October 8th)
- Lecture Test 2 (November 12th)
- Lecture Test 3 (December 3rd)

Three (3) Guest Lecturers (Students to complete a short evaluation/questionnaire) — 6% Total

- Guest lecture 1 (September 24rd)
- Guest lecture 2 (October 29th)
- Guest lecture 3 (November, day TBD)

Laboratory Work (38% Total)
Seven (7) Laboratories:

- 7 Pre-lab and/or in-lab assessments – 3% each, lowest dropped
- 4 Written Lab Reports – 5% each

Please refer to the Lab Schedule on the eClass website for specific dates times of each lab and due dates for the four lab reports.

Note: There is NO final examination or laboratory examination for this course.

Important Dates

See Evaluation above and visit the course eClass page for specific due dates for course and laboratory work.

You have within **21 days (3 weeks)** from the start of term (September 8th, 2021) to purchase an access code for the Lt Software (ADInstruments) through the YorkU bookstore in order to have continued access to laboratory content and complete the assignments.

Drop Deadline: November 12th, 2021
Course Withdrawal: November 13th to December 7th, 2021
(withdraw from course and receive a grade of "W" on transcript)

NOTE: for additional important dates such as holidays, refer to the "Important Dates" section of the Registrar's Website at https://registrar.yorku.ca/enrol/dates/fw21

Resources

Textbook (E-book only; Optional but highly recommended):
Animal Physiology: From Genes to Organisms, 2nd Edition
ISBN-10: 0840068654 ISBN-13: 9780840068651

Lt Laboratory Software (Required): Lt Software (ADInstruments) access code must be purchased through the YorkU bookstore within 21 days from the start of the Fall semester (September 8th, 2021). Lt Software includes laboratory manuals, pre-lab assignments, in-lab assignments, and step-by-step guide to data analyses and graphing. **A stable internet connection is required to access the web-based Lt Software.**

Course eClass Website: Recorded lectures and slides will normally be posted to eClass each week on Mondays and Wednesday (approximately 2 hours of lecture per week). Additional resources (e.g. research articles, videos, pictures for laboratories and lectures) may also be posted.

Accessibility: This course has been designed to be accessible (e.g. closed captioning on lecture videos). Contact the course director if you have additional needs.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Describe the basic organization and control processes of the nervous system and explain how this drives muscle movement and sensory perception in a variety of animal phyla.
Assessment: written tests and lab reports.

2. Measure, analyze, and interpret experimental data and demonstrate laboratory skills in animal anatomy drawn from both invertebrate and vertebrate examples.
Assessment: Evaluating guest lectures from animal physiology researchers, laboratories and corresponding written lab reports.

3. Write concise, clear descriptions of physiological processes to communicate experimental data and a theoretical understanding of animal physiology.
Assessment: written tests, laboratory reports.

Course Content

The following topics will be discussed: cell permeability and exchange; nerve cells, impulses and neural transmission; coding of environmental stimuli by sense organs and physiology of the senses; integration in the nervous system; mechanisms and nervous pathways by which a particular stimulus leads to a particular behavioural response; plasticity in the nervous system, including learning; muscles and movement; hormones and other chemical messengers.

Lecture Organization

Topic 1: Introduction to Animal Physiology; Membranes, Channels, and Transport
Topic 2: Physical Basis for Neuronal Function
Topic 3: Communication Along and Between Neurons
Test 1

Topic 4: Muscles and Animal Locomotion
Topic 5: Structure and Functional Organization of the Nervous System
Topic 6: Sensing the Environment
Test 2

Topic 7: Animal Behaviour: Initiation, Patterns, and Control
Topic 8: Hormones, Glands, and Other Chemical Messengers
Test 3

Each topic will be the focus of a weekly set of lectures, which will be uploaded to eClass each week.

Course Policies

Online Tests – General:

- Tests will be "open book"; you may consult the course textbook, power point slides, your own lecture notes and the eClass website for the course during a test.
- Tests are strictly individual exercises. Communication of any kind with any person other than the course director (to ask questions via email) during a test is prohibited and will be treated as academic misconduct.
- Consulting websites other than the course website during a test is prohibited and will be treated as academic misconduct.

Policy for Tests:

- There are three (3) tests (Oct. 8th, Nov. 12th, Dec. 3rd). The tests are worth 50% total.
- **For those that write all the 3 tests**, at the discretion of the course director the following policy may be applied: the test with the lowest grade is worth 10%, the test with the highest grade is

worth 25% and the remaining test is worth 15%.

- **If you do not write 1 test:** of the remaining 2 tests, the test with the lowest grade is worth 30% and the test with the highest grade is worth 20%.
- **If you do not write 2 tests**, the single test you write will be worth 30% and you will earn a grade of zero worth 20%.
- **If you do not write ALL 3 tests**, you will earn a zero worth 50%.
- **There are NO EXCEPTIONS to this Policy.** No explanation or documentation is requested or required for missing tests. The Policy will be applied as outlined above.

Policy on Laboratories:

- There are seven (7) synchronous laboratory meetings in total and for all seven (7) attendance is mandatory (see the schedule for dates and plan ahead). However, the lowest pre/in-lab assessment mark will not count towards your grade allowing you to miss one synchronous session without penalty, if you complete the associated lab report (if any).
- If you miss a laboratory meeting you will be provided access to the recorded laboratory session (for remote labs), you will be provided data from the lab, and you will be permitted to write the associated laboratory report.
- Missing multiple labs will result in a grade of zero worth 3% for that lab and a deduction to the grade of the associated lab report as determined by the course instructor.
- There are NO EXCEPTIONS to this Policy. No explanation or documentation is requested or
- required for missing laboratories. The Policy will be applied as outlined above.

Policy on Late Lab Reports:

- There are four (4) written laboratory reports (specific laboratory write-ups and due dates are on the Lab Schedule on eClass).
- You are provided with 2 weeks from the time you complete the laboratory to the time the report is due for each of the four (4) laboratory reports.
- **You MUST submit an electronic version of your report via eClass to the TurnItIn link provided by the due DATE and TIME.**
- If you submit a report AFTER the Due DATE and TIME, 10% of the final earned grade will be deducted for each 24-hour period that it is late.
- **There are NO EXCEPTIONS to this Policy.** No explanation or documentation is requested or required for late laboratory reports. The Policy will be applied as outlined above.

Email etiquette:

Subject line: please begin with "BIOL 3060" followed by a brief, but reasonably detailed, indication of the subject of your email (e.g., "question about lecture 3", etc.)

Body of the email: remember to include your name and student number at the end of every email.

Response time: please allow 2 working days.

Religious observance days:

Should the dates for a test pose a conflict with a religious observance day for your particular religion, you must notify the instructor **at least 3 weeks before the date of the test.**

Some Advice on How to Succeed in This Course:

1) Acquire a copy (or e-copy) of the textbook and use it. You are responsible for all chapters in the textbook indicated and all material in those chapters unless certain pages/sections are explicitly excluded by the instructor.

2) Keep up with lectures and readings. While the online format allows some flexibility in terms of when lectures are viewed, do not allow unviewed lectures to accumulate, as you will fall behind very quickly. Note that housekeeping announcements (most of which will not be emailed as Course Announcements) are made at the beginning of lectures. You should check the announcement slides

every Monday and Wednesday when lectures are posted (even if you cannot view the whole lecture at that time).
3) Attend review sessions.
4) Use the group forums available on eClass to ask, or answer, any questions pertaining to laboratory or lecture material. The course instructor may also use group forums to answer frequently asked questions.

Students who feel that there are extenuating circumstances that may interfere with their ability to successfully complete the course requirements are encouraged to discuss the matter with the Course Director as soon as possible.

University Policies

Academic Honesty

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Academic Standards, Curriculum & Pedagogy webpage (see Reports, Initiatives, Documents)
https://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/

- Senate Policy on Academic Honesty and the Academic Integrity Website
- Ethics Review Process for research involving human participants
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
- Student Conduct Standards
- Religious Observance Accommodation

Academic Standards: Third Party Repository Sites

Numerous students in Faculty of Science courses have been charged with academic misconduct when materials they uploaded to third party repository sites (e.g. Course Hero, One Class, etc.) were taken and used by unknown students in later offerings of the course. The Faculty's Committee on Examinations and Academic Standards (CEAS) found in these cases that the burden of proof in a charge of aiding and abetting had been met, since the uploading students had been found in all cases to be willfully blind to the reasonable likelihood of supporting plagiarism in this manner. Accordingly, to avoid this risk, students are urged not to upload their work to these sites. Whenever a student submits work obtained through Course Hero or One Class, the submitting student will be charged with plagiarism and the uploading student will be charged with aiding and abetting.

Note also that exams, tests, and other assignments are the copyrighted works of the professor assigning them, whether copyright is overtly claimed or not (i.e. whether the © is used or not). Scanning these documents constitutes copying, which is a breach of Canadian copyright law, and the breach is aggravated when scans are shared or uploaded to third party repository sites.

There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve students' research and writing skills, and cope with University life. Students are expected to review the materials on the Academic Integrity website at - http://www.yorku.ca/spark/academic_integrity/index.html

Access/Disability

York University is committed to principles of respect, inclusion and equality of all persons with disabilities across campus. The University provides services for students with disabilities (including physical, medical, learning and psychiatric disabilities) needing accommodation related to teaching and evaluation methods/materials. These services are made available to students in all Faculties and programs at York University.

Students in need of these services are asked to register with disability services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs. Please note that registering with disabilities services and discussing your needs with your professors is necessary to avoid any impediment to receiving the necessary academic accommodations to meet your needs.

Additional information is available at the following websites:

Counselling & Development Services - https://counselling.students.yorku.ca
Counselling & Disability Services at Glendon – https://www.glendon.yorku.ca/counselling/
York Accessibility Hub - https://accessibilityhub.info.yorku.ca

Religious Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first three weeks of class. Similarly, should an assignment to be completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately. Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at https://secure.students.yorku.ca/pdf/religious-accommodation-agreement-final-examinations.pdf

Student Conduct in Academic Situations

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. The policy and procedures governing disruptive and/or harassing behaviour by students in academic situations is available at - http://secretariat-policies.info.yorku.ca/policies/disruptive-andor-harassing-behaviour-in-academic-situations-senate-policy/