Department of Biology Course Outline

SC/BIOL 3060 4.00 Animal Physiology I
FALL 2023
This course is conducted in-person (on Keele campus)

Technology Requirements:
You **must have access to a reliable high-speed internet connection (wi-fi) and a computer** for various course activities including, but not limited to, the following

- eClass
  - Submission of assignments, quizzes, video streaming, etc…
- Access to software associated with the laboratories
- Recommended textbook (e-book)
- Zoom (if needed)

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 4.00/3.00

Course Instructors and Contact Information

Please do not use the eClass Messenger for contact. This system is not used for this course and messages will not be answered.

Course Director/Instructor: Julie Clark
Email: biol3060@yorku.ca
Office Hours: By appointment and/or as announced during lectures

TA Coordinator: Marishia
Email: b3060lab@yorku.ca
Primary contact for lab related questions

TA contact
Email: to be provided during lab

We will try to respond to email within 24 hours, but this is not always possible especially during times of high demand, so your patience is greatly appreciated. Please avoid repeatedly emailing the same message in a short span of time as this increases triage time and thus response time.

Please remember to exercise email etiquette and professional correspondence.

- **Always use your @my.yorku.ca email address** - email from other sources may be filtered out and not reach the intended recipient.

- **Subject Line** - Include brief indication of topic. *E.g*. "Question about action potentials"
- Include your **name** and **student number** at the end of each email. We need it to identify you to retrieve the right information and maintain confidentiality.
  - Please use full sentences, proper grammar, no text or message or social media lingo. Please begin your message appropriately: "Dear Professor XXXX"; not "Hey Miss" or "Hey Prof"

Course Format

This course consists of mandatory in-person lecture and laboratory components. Students must be able to attend class, tests, and labs in-person (on campus). Students also must have a computer or tablet and access to reliable high-speed internet. Access to eClass is mandatory, and iClickers (via mobile app) will be used in the classroom. Some aspects of the course may involve Zoom video software. Microsoft Office, including Word, Excel, and Power Point, are strongly recommended (and are freely available to YorkU students https://www.yorku.ca/uit/faculty-staff-services/free-microsoft-office-365-education-software/).

The lecture component of this course, including tests, will be delivered in-person (on campus). Efforts will be made to record and post lectures through eClass, but note that this may not always be possible. If needed, some lectures may be delivered remotely synchronously and/or asynchronously. Activities worth grades will occur during in-person lectures.

The laboratory component of this course is delivered in-person (on campus) and attendance is mandatory. You must attend only the lab section in which you are registered. In-person attendance and completion of labs is mandatory, even if repeating the course. See Course Policies section below for details on missed laboratories.

It is essential that you keep up with the work and do not fall behind. It is recommended that you develop a personal schedule that permits you to study regularly and complete all aspects of the course within the recommended time-lines and/or deadlines.

Copyright Protection of Course Material

All material associated with this course is the intellectual property of the instructor and/or protected under Canadian Copyright Law.

All material associated with this course, including lecture recordings, activities, quizzes and laboratories, are to be used for personal study purposes only. **Unauthorized distribution in any form can lead to a violation under Canadian Copyright Law and/or Academic Misconduct charges under York University Senate Policy**. Unauthorized distribution includes sharing and/or uploading of material anywhere and with anyone.

Penalties under Academic Misconduct can include failure in the course, a transcript notation and/or suspension. Please see the "University Policies" section below for further information.

Resources – Texts and other Materials

- **Textbook (E-book only; Optional but Highly Recommended)**:
  - Sherwood L "Animal Physiology: From Genes to Organisms", 2nd Edition
  - ISBN-10: 0840068654 ISBN-13: 9780840068651
  - Available as Day-1-Digital (D1D) option. Information through the Bookstore. Link and information provided on eClass
  - Suggested readings provided for this textbook
- **Alternative Textbook Options**
  - Other Animal Physiology textbooks may be used as a reference.
    - *E.g*. Randall D.J *et al* " Eckert Animal Physiology: Mechanisms and Adaptations" 5th Edition (on reserve in the Steace Library)
  - *For any alternative textbook option, please use the table of contents and index to locate appropriate readings. Suggested readings will not be provided.*
- Additional readings may be assigned during the course and, when possible, be made available via the eClass site or through Library Reserves

- **Lt Laboratory Software (Required)**: Lt Software (ADInstruments) is available immediately for a trial time, but an access code must be purchased through the YorkU bookstore for continued use. 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.**

- **Laboratory Materials (Required)** – all available from the Bookstore
  - Laboratory Coat
  - Protective Glasses/Goggles
  - Dissection Kit (must include scissors and forceps)
  - Lab notebook (for hand written lab notes during labs)
  - USB key (for saving data)

- **On Library Reserve** at the Steacie Science and Engineering Library
  - Sherwood L *et al* "Animal Physiology: From Genes to Organisms" 2nd Edition
  - Randall D.J *et al* " Eckert Animal Physiology: Mechanisms and Adaptations" 5th Edition
  - McMillian V. "Writing Papers in the Biological Sciences"
    - Resource providing tips and guidance for writing different biology reports

- **Course eClass site**:
  - http://eClass.yorku.ca
  - Contains important information pertaining to the lecture and laboratory components of the course. Visit it regularly

- **iClicker access**
  - iClicker is a mobile app used during in-person lectures for in-class polling, quizzes etc
  - These activities contribute to your activity grade.
  - You must be in the classroom to use this app.
  - See eClass for access details.
  - If you do not have a mobile device or computer that you can use in the classroom please contact me at biol3060@yorku.ca

- **Bring paper (or a designated notebook with removable pages) to each lecture** for making notes and for potential written activities. These activities may be submitted after completion.

Evaluation

Please see the "Course Policies" section below for other important information.

Lecture Component (60% Total)

- Two (2) Tests: 15% each (30% total):
  - Lecture Test 1 (Wednesday, October 18, 2023)
  - Lecture Test 2 (Friday, November 17, 2023)

The lowest Test grade (including a zero for a missed test) will be automatically replaced by the Final Exam grade, if this results in a higher grade.

- Final Exam: 25%
  - Scheduled by the Registrar Office during the Exam Period (December 7 – 20, 2023)
  - Final Exam is Cumulative (all lecture material is applicable)

- Activity Grade: 5% total
  - Activities will be completed throughout the term. They are varied and designed to support your learning. Activities may include, but are not limited to, different quizzes (via eClass), in-class questions/activities etc. Activities include both formative and summative graded activities.
  - Each activity will contribute points towards the activity grade. The sum of the activity points will be used to calculate the activity grade. The lowest 10% of your activity points (including zeroes) will be dropped from your Activity Grade to help address unforeseen events and the odd technological issue.

Laboratory Component (40% Total)

- Seven (7) Laboratories
  - 7 Pre-lab and/or in-lab assessments: 3% each, lowest dropped (18% total)
  - 1 Lab assignment: 3% (Lab 5)
  - 3 Written Lab Reports: 4% (Lab 1), 6% (Lab 4), 9% (Lab 6) (19% total)
- Note: ChatGPT and similar programs may not be used for the composition of any material in this course, including laboratory reports. You must personally organize, write and edit all your work (this is how you learn and develop your writing abilities). See important information pertaining to Academic Honesty and Integrity in the Course Policies section below.

Final course grades may be adjusted to conform to Program or Faculty grades distribution profiles.

Important Dates

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

Last Day to drop the course without receiving a grade: November 8, 2023
Last Day to withdraw from the course and receive "W" on transcript: December 5, 2023
NOTE: for additional information on withdrawing from a course refer to http://secretariat-policies.info.yorku.ca/policies/withdrawn-from-course-w-policy-and-guidelines/ For additional important dates such as holidays, refer to the "Important Dates" section of the Registrar's Website at http://registrar.yorku.ca/enrol/dates/

If you are Registered with YorkU Student Accessibility Services: please email your letter to biol3060@yorku.ca by Wednesday September 27, 2023.

If you have a Religious Conflict: please email biol3060@yorku.ca at least three (3) weeks prior to the conflict. Please indicate the specific date(s) involved and the course component/assessment.

Note: For additional important dates such as financial deadlines, holidays etc, please refer to the "Important Dates" section of the Registrar website https://registrar.yorku.ca/enrol/dates/2023-2024/fall-winter

Netiquette and Electronic Communication

We want you to get the most out of this course, and that will involve regular electronic communication. We also want everyone to have a positive and supportive experience, so we ask for your help in making this course a positive and safe space for everyone:

- Please use respectful and professional correspondence for all aspects of this course, including email, discussion forums, chat sessions, video sessions and any other online means of communication.
- Remember that tone can be misinterpreted through written means as we do not have physical cues to help guide us. Avoid using all capitals (which can represent yelling) and multiple exclamation marks (which can also represent yelling).
- Use proper sentences and grammar so your ideas are clearly conveyed.
- Consider this an opportunity to practise professional correspondence which you will use throughout your career.

Posts to discussion forums that are not on topic, not relevant to BIOL 3060, or that contain personal insults/ attacks/ intimidation/ profanity will be deleted. Please remember that as per the York University Code of Student Rights and Responsibilities, students have "The responsibility to consider and respect the perspectives and ideas of others, even when the student does not agree with their perspectives or ideas."

If you notice any inappropriate threads in the Discussion forums please email biol3060@yorku.ca

Course Learning Outcomes

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

- Describe the basic organization, communication and control processes of the nervous system and explain how this drives physiological process including muscle movement and sensory perception in a variety of animal phyla.
  - *Assessment: written tests, activities, and lab reports/assignment.*
- Measure, analyze, and interpret experimental data and demonstrate in-person laboratory skills in animal anatomy and physiology drawn from both invertebrate and vertebrate examples.
  - *Assessment: laboratories and corresponding written lab reports/assignment.*
- Write concise, clear descriptions of physiological processes to communicate experimental data and theoretical understanding of animal physiology.
  - *Assessment: written tests, laboratories and corresponding written lab reports/assignment.*

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.

Tentative 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
Topic 4: Muscles and Animal Locomotion
Topic 5: Structure and Functional Organization of the Nervous System
Topic 6: Sensing the Environment
Topic 7: Animal Behaviour: Initiation, Patterns, and Control
Topic 8: Hormones, Glands, and Other Chemical Messengers

Course Policies

Missed Activities

- Quizzes cannot be re-opened after they close, so there is already a grace period built into completion times. Please plan to complete quizzes well before the posted deadline to provide yourself buffer time in case of unexpected problems.
- Makeups are not possible for missed in-lecture activities.
- Zero points are earned for missed activities/quizzes.
- Note: The lowest 10% of your activity points (including zeroes) will be dropped from your Activity Grade to help address any unexpected absences/events and/or technological issues.

Tests – General

- Tests occur during class time, in-person (on campus) on Wednesday October 18 and Friday November 17 (see Evaluation section above).
- Room assignments will be provided closer to the test dates.
- Test format will be discussed closer to each test date.
- Printed hardcopy or hand written personal notes are permitted during the test. Print outs of lecture slides (attained by any capacity) are not allowed as these are not your personal notes. No electronics in any capacity are permitted. All electronics including cell phones, watches and related devices must be stored in a bag and not on ones self.
    - Note: Additional time is not provided for referring to notes during a test. It is recommended that you study as you would for a closed-book test.
- Tests and the exam are strictly individual exercises. Communication of any kind with any person other than the Course Director or invigilator during a test is prohibited and will be treated as academic misconduct. York University Academic Honesty Policies apply (http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/)

Test Weighting and Missed Test(s)

- There are two (2) tests (Wednesday October 18 and Friday November 17), each weighted 15% of the course total.
- There are no make up opportunities for a missed test, however, the lowest Test grade (including a zero for a missed test) will be automatically replaced by the Final Exam grade only if this results in a higher grade. No explanation or documentation required for missed tests. Policy will be applied as follows:
    - **If Lecture Test 1 and Lecture Test 2 are written:**
        - The lowest Test grade will be automatically replaced by the Final Exam grade only if this results in a higher grade.
    - **If one Lecture Test is missed and one Lecture Test is written:**
        - The missed test will earn a grade of zero, however, as this will be the lowest Lecture Test grade, it will be replaced by the Final Exam grade.
    - **If Lecture Test 1 and Lecture Test 2 are both missed**
        - The Final Exam grade will be applied to only one test (15%). A zero will be earned for the other test (15%).

- The final Exam is cumulative.

Missed Final Exam

- If you miss the final examination you must petition for deferred standing. The decision to grant deferred standing will be made by the appropriate petitions committee and not the instructor. See https://myacademicrecord.students.yorku.ca/academic-petitions for information on petitioning for deferred standing.
- If you are approved to write a deferred exam, the final exam will be in-person at a date to be determined. The format of the deferred final exam may be essay, short answer, multiple choice, or a mix of these options.

Test Feedback

While we will do our best to provide grades to students in a timely manner, there are a number of different factors that may delay the process. Your patience is appreciated.

Please note that when personal/individual test feedback is not possible, general feedback will instead be provided to the class.

Laboratories

There are seven (7) in-person laboratory meetings and for all seven (7) attendance is mandatory (please see the lab schedule on eClass and plan ahead). However, the lowest pre/in-lab assessment mark will not count towards your grade allowing you to miss one session without penalty, if you complete the associated lab report or assignment (if one is associated with the lab).

- **If you miss a laboratory meeting contact the TA Coordinator immediately (b3060lab@yorku.ca). This is within 24 hours of missing the lab, no later.**
- You will be provided the opportunity to write the associated laboratory report or assignment (if one is associated with the lab). All arrangements are made by the TA Coordinator.
- Missing multiple labs will result in a grade of zero on the pre/in-lab assessment for the missed labs and a deduction to the grade of the associated laboratory report or assignment (if one is associated with the lab) as determined by the Course Director.
- There are no exceptions to the above policy. No explanation or documentation is required. The policy will be applied as outlined above.
- **Note: students arriving to lab after the pre-lab talk will not be permitted to stay as this is a safety issue. Contact the TA Coordinator at b3060lab@yorku.ca immediately.**

Laboratories – Student Code Conduct and Safety Agreement

- Students must agree to the "Laboratory Student Code of Conduct and Safety Agreement" and the Academic Honesty Policies before entering the laboratory for their first lab.
- Both to be completed via eClass. See eClass for details.

Late Lab Reports

- There are three (3) written laboratory reports (Labs 1, 4, and 6) and one (1) shorter lab assignment (Lab 5).
- You are provided two (2) weeks from the start of your lab session to complete the laboratory report. Note that additional time is already incorporated into this timeline, but if needed, an additional 24-hour no-penalty extended submission time (from your original due date and time) is in place.
- You must submit an electronic version (in the appropriate format) of your report, via eClass to the TurnItIn link, 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 extensions. This also applies to reupload to replace corrupt files or those of incorrect format (doc and pdf are acceptable formats).
    - There are no exceptions to this policy. No explanation or documentation is requested or required for late laboratory reports.

Academic Honesty and Integrity: Laboratories

- Students are expected to follow York University's policies regarding academic integrity. Please consult the following website below for more details: http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/
- You are expected to complete laboratory assignments and reports on your own (unless otherwise stated) and in your own words. Unauthorized collaboration is an academic offense, so ensure that individual lab submissions are your own.
- If you are taking the course again you cannot submit the identical report(s) submitted previously for grade. It is an Academic Offence to submit work yourself, or another individual, has previously submitted for grade.
- Any student who resubmits the same report for grading, a report written by anyone/thing other than themselves, or commits plagiarism will earn a zero on their lab report and could potentially face charges relating to academic dishonesty.

Note: ChatGPT and similar AI programs may not be used for the composition of any material in this course, including laboratory reports. You must personally organize, write and edit all your work (this is how you learn and develop your writing abilities).

- You must agree to adhere to Academic Honesty Policies. Please see eClass to do so.

Reappraisal Requests

If you believe that a course evaluation component (*e.g.* laboratory report) was graded incorrectly, you may request a grade reappraisal for the work.

For reappraisal of lecture material you must submit a written rationale for a reappraisal request that is based on academic grounds* to biol3060@yorku.ca within 7 days (one week) of the material being made available to you. If it is determined that you have provided sufficient academic grounds, the material will be regraded by the Course Director.
Note: Regrading can result in the grade being raised, confirmed or lowered.

For reappraisal of laboratory material

- If you have concerns with the grading of a lab submission, you should first consult with your TA. You should have specific questions regarding TA comments or portions of the report, not just "why didn't I earn a higher grade". Provide academic reasons why you feel you should earn a higher grade. Note that "I worked hard and for many many hours" is not an academic reason.
- If you feel the matter has not been resolved after meeting with your TA, please contact the TA Coordinator (b3060lab@yorku.ca) for a potential independent reappraisal (if academic grounds are met) .
- All reappraisal requests must be submitted within 7 days (one week) of the work being made available to you. Please note that the entire report/assignment is reappraised.

Note: Regrading can result in the grade being raised, confirmed or lowered.

**Academic grounds means you make an academic rationale for why your answer is correct – statements such as "this grade does not reflect my knowledge" or "I really studied hard and I deserve a better grade" are not academic grounds.*

We appreciate that grades are important to you and all of your classmates. In order to be fair and consistent with regard to the entire class, individual grades are not negotiable. We cannot provide "extra credit" assignments. Marks for assignments and tests are not "rounded" or "bell-curved". Contact the Course Director about grades **only** if there is a clear error in your grade (calculation, clerical, etc.) within 7 days (one week) of the grade being made available to you at biol3060@yorku.ca

University Policies

Academic Honesty and Integrity – No Cheating. Complete Courses with Integrity.

York students are required to maintain the highest standards of academic honesty and they are subject to the Senate Policy on Academic Honesty (http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards.

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/academicintegrity/

***Important* - A note from the Faculty of Science Committee on Examinations and Academic Standards:**

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 an Academic Misconduct charge of aiding and abetting had been met.

Accordingly, to avoid this risk, students are urged not to upload their work to these sites or related sites. Whenever a student submits work obtained through a third party site (e.g. Course Hero, One Class etc.), 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.

Penalties associated with charges of Academic Misconduct can include zero on the assignment, letter grade reduction, failure in the course, notation on the transcript, suspension.

Do Not Cheat, it is not worth it, and ultimately it hurts your learning and skill development.

Student Accessibility

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 Student Accessibility 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:

Student Accessibility Services - https://accessibility.students.yorku.ca/

York Accessibility Hub - http://accessibilityhub.info.yorku.ca/

- **Students Registered with Student Accessibility Services:** please email your letter to biol3060@yorku.ca by Wednesday September 27, 2023. If this is not possible, please email me.

Note: A student registered with Student Accessibility Services, and choosing to write with Alternate Exams, is responsible for making the appropriate writing arrangements within the timeframes outlined by Alternate Exams.

Alternate Exams - http://altexams.students.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 at least three (3) weeks prior to the conflict. 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 period, students must complete and submit an Examination Accommodation Form at least 3 weeks before the exam period begins. The form can be obtained from Student Client Services, Student Services Centre or online at https://registrar.yorku.ca/pdf/exam-accommodation.pdf

- **If you have a Religious Conflict**: please email biol3060@yorku.ca at least three (3) weeks prior to the conflict. Please indicate the specific date(s) involved and the course component/assessment.

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/

Other Resources

Learning Commons

The Learning Commons brings together key supports for your learning: writing, research, learning skills and career services. http://www.library.yorku.ca/cms/learning-commons/

goSAFE

goSAFE is a complimentary service provided to the York Community. At the Keele campus, goSAFE has two routes: North Route & South Route which will safely transport community members by vehicle from one specified hub to another on campus. goSAFE operates seven days a week, all year round, including University closures (with the exception at Glendon during the Christmas holiday closure).

Call the goSAFE office at 416-736-5454 or extension 55454 during hours of operation. Please give your name, location and destination. http://www.yorku.ca/goSAFE/

Mental Health and Wellness at York University

Outlines a variety of resources available to support mental health and wellness
http://mhw.info.yorku.ca/resources/resources-at-york/students/

Good2Talk

Post-Secondary Student 24 hour Helpline
http://www.good2talk.ca/ 1-866-925-5454