Department of Biology Course Outline

SC/BIOL 2030 4.00 Animals
FALL 2022/2023

Course Description

A study of the diversity of animals, their structure, physiology and evolution. Three lecture hours, three laboratory hours. One term. Four credits.

Prerequisites

SC/BIOL 1010 6.00 or SC/BIOL 1000 3.00 and SC/BIOL 1001 3.00. Course credit exclusions: SC/BIOL 2030 5.00, SC/BIOL 2031 4.00, SC/BIOL 2031 3.00.

Course Instructors and Contact Information

Course Director: Dr. Scott P. Kelly spk@yorku.ca
021 Farquharson Building

Lab Coordinator: Eleni Diakanastasis, PhD Candidate biol2030fall@gmail.com

Technical Staff: Krystina Strickler

Schedule

Lecture Times: Tuesday 11:30 AM to 1:00 PM in Accolade West 109 (ACW 109)
Thursday: 11:30 AM to 1:00 PM in Accolade West 206 (ACW 206)

Lab Times: Wednesday & Friday: 10:00 AM – 1:00 PM in Lumbers 124
Tuesday – Friday: 2:30 PM – 5:30 PM in Lumbers 124
Monday – Thursday: 6:30 PM – 9:30 PM in Lumbers 124
Labs are a mandatory component of BIOL 2030 and you must attend the lab section in which you are registered. No exceptions.

Evaluation

Laboratory Work (in-person) [quizzes, performance, marked dissection]:	40%
Exam 1 (in-person, held in class):	20%
Exam 2 (in person, held in class):	20%
Exam 3 (In December Formal Exam Period):	20%

Important Dates

Exam 1: Thursday October 6th, 2022
Exam 2: Tuesday November 8th, 2022

Laboratories: Labs are Mandatory**.** There is a lab each week, consult the schedule under course content in this course outline and/or the laboratory manual

Drop Deadline: November 11th 2022 (last date to drop without receiving a grade)
Course Withdrawal Period: Nov 12th – Dec 7th 2022 (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/

Resources

Textbook/s: There is no mandatory textbook for the Fall 2022 iteration of BIOL 2030. However, the following texts are a good source of information for the lecture material* and labs**. These can be considered suggested reading to enhance your understanding of course material.

*, ** Hickman, CP, SL Keen, A Larson, D Eisenhour. Animal Diversity, 7th Ed (2015) and Onwards. McGraw Hill, Toronto.
** Freeman, WH., Bracegirdle, B. An Atlas of Invertebrate Structure, Heinemann Educational. OUT OF PRINT but available as a reference book in the library.
** Rowett, HGQ. Guide to Dissection. OUT OF PRINT but available as a reference book in the library.

Laboratory Manual: YORK SC/BIOL 2030 4.0 Animals Fall 2022 Laboratory Manual
Course Director: Dr. Scott P. Kelly
Lab Coordinator: Eleni Diakanastasis

eClass website: Please note that lecture slides will be posted **AFTER** class as a pdf document and lectures will **NOT BE RECORDED**. Extra Lab Resources are posted for each lab.

Learning Outcomes

This course introduces animal diversity through discussion of lifestyles/cycles, relationships between anatomy/structure and function (internal and external anatomy), and the evolutionary history of unicellular and multicellular eukaryotic organisms. Both living and extinct forms are considered (with an emphasis on extant organisms), by surveying across a range of phyla. General topics for consideration include classification, lifestyle/cycles, habitats, architecture (structure and function), development, and systems involved in locomotion, feeding, digestion, circulation, communication, osmoregulation, gas exchange, reproduction and sensory operations.

Upon course completion, student **learning outcomes** will include (but not limited to) being able to:

1. Discuss/define what unicellular eukaryotes and animals are, using specific characteristics that unify different groups of organisms (e.g. unifying features of a Phylum)
2. Discuss the diversity of unicellular eukaryotes and animals in terms of lifestyles/cycles, development, structure and habitats
3. Describe, with specific examples, how body form and structure of unicellular eukaryotes and animals relate to function
4. Describe, using examples, how unicellular eukaryotes and animals can impact human health
5. Describe the evolution of vertebrate animals from aquatic ancestors to terrestrial forms
6. Outline structures and mechanisms that specific (select) unicellular eukaryotes and animals have evolved for locomotion, osmoregulation, feeding and digestion, development/reproduction, and sensing the world around them.

In addition to the above learning outcomes (1 – 6), students will also

8. Possess hands-on skills in the following areas:
   - Procedures related to microscopic observation and determination of unicellular eukaryote morphology, size and architecture as well as metazoan size, morphology and architecture
   - Procedures related to the microscopic observation of animal cells and tissue types
   - Procedures related to macroscopic observation of animal size, morphology and architecture, including the isolation, identification and arrangement of internal organs, organ-systems and supportive structures

Course Content

This course introduces unicellular eukaryote and animal diversity. Lifestyles/cycles, anatomy (from a structure and function viewpoint), and the evolutionary history of unicellular eukaryotes and animals are discussed. Both living and extinct forms are considered (although primarily living). General topics for consideration include (but are not limited to) classification, architecture and development, lifestyles/cycles as well as systems involved in locomotion, feeding/digestion, circulation, osmoregulation, gas exchange, and sensory operations.

Week:	Lecture	Class	Topic	Lab
1	Introduction	Sept 8	Introduction/Classification	**NO LAB**
2	Animal Architecture & Unicellular Eukaryotes	Sept 13	Animal Architecture	**NO LAB**
		Sept 15	Unicellular Eukaryotes	
3	Porifera & Cnidaria	Sept 20	Porifera/Cnidaria	Lab 1 Unicellular Eukaryotes
		Sept 22	Cnidaria	
4	Platyhelminthes	Sept 27	Platyhelminthes I	Lab 2 Porifera, Cnidaria
		Sept 29	Platyhelminthes II	
5	Material Review & **EXAM 1**	Oct 4	Material Review	Lab 3 Platyhelminthes/Nematode
		Oct 6	**EXAM 1**	
Oct 8 – 14 – **FALL READING WEEK** NO CLASSES OR LABS				
6	Acoelomates & Mollusca	Oct 18	Acoelomates	Lab 4 Mollusca
		Oct 20	Mollusca	
7	Annelida & Arthropoda I	Oct 25	Annelida	Lab 5 Annelida **Marked Dissection**
		Oct 27	Arthropoda I	
8	Arthropoda II & Echinodermata	Nov 1	Arthropoda II	Lab 6 Arthropoda
		Nov 3	Echinodermata	
9	Material Review & **EXAM 2**	Nov 8	Material Review	Lab 7 Echinodermata/Chordata I
		Nov 10	**EXAM 2**	
10	Vertebrate Beginnings & Fishes I	Nov 15	Vertebrate Beginnings	Lab 8 Chordata II
		Nov 17	Fishes I	
11	Fishes II & Amphibians	Nov 22	Fishes II	Lab 9 Chordata III
		Nov 24	Amphibians	
12	Reptiles & Aves	Nov 29	Reptiles	**NO LAB**
		Dec 1	Aves	
13	Mammals	Dec 6	Mammals	**NO LAB**

Course Policies

Please read all Course Policies CAREFULLY and ENTIRELY

Accommodation and Accessibility Policies

- The administration and execution of BIOL 2030 commits to principles of respect, inclusion and equality of all persons with disabilities. Where accommodation/s is/are required, the course director should be provided with as much advance notice as possible so that a mutually agreeable plan of action can be put in place. This will ensure that any impediment to receiving necessary academic accommodations that meet the needs of a student is avoided.

- If a student is aware of an accessibility issue with respect to the execution of BIOL 2030, the course director should be notified as early as possible so that a plan of action can be put in place. However, please note that **students must attend, in-person, all components of the course that require in-person attendance**. This includes exams and labs. In the case of BIOL 2030 labs, in-person attendance in and completion of all labs is mandatory, even if repeating the course.

Code of Student Rights & Responsibilities

- Students have rights and responsibilities. BIOL 2030 students must be fully aware of the Code of Student Rights & Responsibilities. See: (https://www.yorku.ca/secretariat/policies/policies/code-of-student-rights-and-responsibilities-presidential-regulation/)
  The Code of Student Rights & Responsibilities "..*is intended to be educative and promote accountability among students toward their peers and other members of the York community*.".

  It is important to uphold an atmosphere of civility, honesty, equity and respect for others and not to disrupt or interfere with University activities (e.g. academic activities such as classes etc.).

Laboratories and missed labs Policies

LABORATORIES ARE MANDATORY AND YOU MUST ATTEND (IN-PERSON) THE LABORATORY SECTION THAT YOU ARE OFFICIALLY ENROLLED IN.

- There are 9 labs which you are required to complete.
- Each lab will be graded out of 10 (lab quiz worth 5, lab performance worth 5). At the end of term, the attended and completed lab in which you received the lowest grade will be dropped and the remaining 8 labs will be used to calculate your overall lab grade which is worth 34% of the final course grade. **Missed labs cannot be dropped.**
- Lab 5 will also include a marked dissection which will be worth 6% of the final course grade.
- Combined, the continuous assessment (best 8 out of 9 labs) plus the marked dissection are worth 34% + 6% = 40% of the final overall course grade.
- **There are NO make-up labs.**
- **A Make-Up marked dissection MAY be possible (see lab manual for further details).**
- If you miss a lab you can write the quiz associated with that lab on the following Thursday at 10 AM (held in Lumbers 124). This is the only time a missed quiz will be offered and if this second opportunity is missed, the mark for that quiz will be zero.
- **Taking the above into consideration, the maximum grade that you may earn for a missed lab is 5/10 (i.e. if you earn 5/5 on the make-up quiz).**

  Note: No documentation or reason is requested or required for missed labs. It is your responsibility to ensure you write the make up quiz at the designated time. If you miss the make up quiz you will earn a grade of 0/10 for the missed lab.

Missed EXAM 1 and/or EXAM 2 Policies

- **EXAM 1** and (**EXAM 2**) will be held during regularly scheduled class time on

  Oct 6th (**EXAM 1**)
  Nov 10th (**EXAM 2**)

- **EXAM 1** and **EXAM 2** will examine students on evenly sourced lecture material only. That is, these exams will not cover lab material unless it has appeared in lecture
- **EXAM 1** and **EXAM 2** format will be 75% multiple choice questions + 25% written format
- If a student misses either **EXAM 1** or **EXAM 2**, there will be **NO OPPORTUNITY** to take a make-up exam or to shift the weight of the missed exam to another evaluated component of BIOL 2030.
- A student who misses **EXAM 1** or **EXAM 2** must notify the course director **within (no later than) 24 hours** of/following the missed exam start time and indicate intent to undertake a Make Up Assignment *in lieu* of an exam.
- A student who misses an exam will have an opportunity to complete a Make Up Assignment *in lieu* of an exam, to be submitted **no later than 14 days (two weeks)** following the missed exam date. The topic of the Make Up Assignment will be provided **within 24 hours** of the student notifying the course director of the missed exam.
- A Make Up Assignment *in lieu* of either **EXAM 1** or **EXAM 2** will, in each case, be an approximately eight (8) page essay on a topic assigned by the course director.
- Further details can be found in the section titled "**Make Up Assignment format and rubric/marking scheme**".

  Note*:* No documentation or reason is requested or required if a student misses an Exam. The Make Up Assignment is a final opportunity to acquire a mark for a missed Exam and no documentation will provide an additional opportunity.

Missed Final Exam Policies

- If you miss the Final Exam you must petition for Deferred Standing. Information and instructions with forms can be found at http://myacademicrecord.students.yorku.ca/deferred-standing
- **All documentation related to a petition for Deferred Standing must reach the course director no later than 7 days after the missed Final Exam or before the end of term (whichever comes first)**
- If a petition for Deferred Standing is not approved by the course director, a student may choose to submit an academic petition
- A Deferred Final Exam may differ in format/content from the original Final Exam

Missed or Late Make Up Assignment Policies

- A student must notify the course director of a missed exam and indicate intent to undertake a Make Up Assignment **within (no later than) 24 hours** of/following the missed Exam start time. If not, no opportunity to conduct a Make Up Assignment will be available.
- Make Up Assignment submission deadlines are two weeks following the missed Exam date

  Make Up Assignment in lieu of **EXAM 1** submission deadline – 1 PM, Oct 20th 2022
  Make Up Assignment in lieu of **EXAM 2** submission deadline – 1 PM, Nov 24th 2022

- If a Make Up Assignment is not submitted by the deadline, a deduction of 5% will be allotted for each 12 hour period the assignment is late (i.e. between 30 min - 12 h late = 5% deduction, 12 – 24 h late = 10% deduction, 24 – 36 h late = 15% deduction etc.).
- If a Make Up Assignment is more than 72 hours (3 days) late, **ZERO** (**0%**) will be assigned for this graded component of the course.
- A Make-Up Assignment *in lieu* of a missed exam must be submitted as a **pdf document** via email to the course director (spk@yorku.ca). Please note that a grace period of 30 min following the assignment deadline is provided to accommodate for technical difficulties.

Grade Reappraisal Policies

- A BIOL 2030 student may, with sufficient academic grounds, request a reappraisal of a marked component of the course. However, **students need to be aware that a request for a grade reappraisal may result in the original grade being raised, lowered or confirmed.**
- To initiate the process of reappraisal, a clear, concise and specific **academic rationale** must be provided within **two (2) weeks** of receiving the graded component in question.
- Non-academic grounds are not relevant for grade reappraisals. Therefore, only requests with **appropriate academic grounds*** will move beyond the reappraisal request stage.

  [***Note:** Generalized reasons for requesting a reappraisal will not be accepted. For example, providing a rationale such as "I feel I deserve a better grade", or "I worked so hard on this..", or "I know the material better than this.." etc. are not academic grounds to request a grade reappraisal. While effort is appreciated, it does not make incorrect answers correct or a poorly executed exam question better.]

- If there is more than one area of a marked component that requires reappraisal, the student must provide a clear and concise academic rationale for each area individually.
- Irrespective of the area/areas outlined by the student, a reappraisal may take the entire graded component into consideration.

Grading Policy

- **The Senate approved grading scheme for undergraduate courses in the Faculty of Science provides specific definitions to accompany letter grades**. These are as follows:

A+. **Exceptional**; Thorough knowledge of concepts and/or techniques and exceptional skill or great originality in the use of those concepts, techniques in satisfying the requirements of an assignment or course.

A. Excellent; Thorough knowledge of concepts and/or techniques with a high degree of skill and/or some elements of originality in satisfying the requirements of an assignment or course.

B+. **Very Good**; Thorough knowledge of concepts and/or techniques with a fairly high degree of skill in the use of those concepts, techniques in satisfying the requirements of an assignment or course.

B. Good; Good level of knowledge of concepts and/or techniques together with considerable skill in using them to satisfy the requirements of an assignment or course.

C+. **Competent**; Acceptable level of knowledge of concepts and/or techniques together with considerable skill in using them to satisfy the requirements of an assignment or course.

C. Fairly Competent; Acceptable level of knowledge of concepts and/or techniques together with some skill in using them to satisfy the requirements of an assignment or course.

D+. Passing; Slightly better than minimal knowledge of required concepts and/or techniques together with some ability to use them in satisfying the requirements of an assignment or course.

D. Barely Passing; Minimum knowledge of concepts and/or techniques needed to satisfy the requirements of an assignment or course.

E. Marginally Failing

F. **Failing**

Other Information

Who do I ask what?

The **Course Director** (Dr. Scott P. Kelly) will be teaching the course and is the person to ask any questions pertaining to overall course content (e.g. lectures, exams etc.). Dr. Kelly can also help with lab material related questions BUT students are encouraged to first ask your TA about lab related material.

The **Lab Coordinator** (Eleni Diakanastasis) organizes the labs, lab scheduling, lab marking, TA meetings ahead of labs, student attendance in labs etc.

Take note of your **TA's** name! Your TA runs your lab section, administers your quizzes, decides your lab performance grade, marks your graded dissections. **Your TA is the first person you should ask any question that relates to lab material.**

Expectations and Format of Exams

- All exams will be presented/administered (and must be undertaken) in-person.
- Once a student opens an exam, this exam will be marked and used as part of the overall grade whether the student completes it or not. **No opportunity to conduct a Make Up Assignment** will be provided if a student opens an exam and does not complete it.
- A student must complete all BIOL 2030 Exams in accordance with all University policies on *Academic Honesty and Integrity* (see "University Policies" section). That is, all BIOL 2030 Exams must be completed by the student registered in the class without the use of **any** study aid/s and without any **discussion/consultation** with other individuals.
- **Any indication** that a student has completed a BIOL 2030 Exam in a manner that violates University policies on *Academic Honesty and Integrity* will result in an exploratory meeting at the unit level to determine whether or not there are reasonable and probable grounds to proceed with a charge of breach of academic honesty.

Format of EXAMS 1, 2 and 3

- Exams 1 – 3 will be composed of multiple choice questions as well as written answer questions (i.e. short essay-style questions).
- Written answer questions **require** a student to provide an answer **in the student's own words** and this must be in full sentences (i.e. point form, note form, bullet point etc. answers will **NOT** be accepted)

Make Up Assignment format and rubric/marking scheme

- A Make Up Assignment *in lieu* of a missed exam will be an approximately eight (8) page essay in the style of a scientific literature review.
- The 8 pages will include diagrams/figures and a reference list, but not the title page.
- Format of the Make Up Assignment will be 1.5 line spacing and 12 point font.
- The topic of the Make Up Assignment will be provided by the course director and will relate to Animal Diversity and subject matter covered in BIOL 2030.
- The assignment content must articulate a topic **in the student's own words**.
- Resources used must be from the **primary literature**, **peer-reviewed scientific review articles**, **reputable book/s** or **published reports by national/international scientific working groups**. Websites that are not peer reviewed are typically **not acceptable**. If you are unsure about resource acceptability, please check.
- For the reference list and citation style, you must carefully follow the "***Bibliography Guideline Document***" which is posted on eClass.

- The Make Up Assignment Rubric (marking scheme) will be as follows (see next page):

Make Up Assignment format and rubric/marking scheme (cont.)

1. **Abstract – 5%**

   An abstract for a review article should provide a succinct overview of the content of the paper. In other words, a clear indication of what the paper is about.

2. **Introduction – 15%**

   An introduction should start off broad and then gradually focus the reader to the specific topic at hand.

3. **Discussion (with subheadings) – 40%**

   In addition to discussing specific resources (e.g. papers) you have selected for use, where possible you should attempt to integrate information to summarize key elements of the topic. In other words, the Discussion should not just be a sequential description of each resource you have selected for use.

4. **Conclusion – 15%**

   A conclusion is an opportunity to link topics that were covered in your assignment and provide perspective (possibly even an idea or opinion of your own).

5. **References – 10%**

   Carefully follow the "***Bibliography Guideline Document***" which is posted on eClass.

6. **Overall (e.g. presentation, figure use, figure quality, spelling, grammar etc.) – 15%**

NOTE: I you are not familiar with what a Scientific Literature Review is, it would be advisable find examples through various search engines (e.g. PubMed etc.) and become familiar with what this kind of article is and what general format they follow.

What if COVID/illness impacts my semester?

Now that there is a return to in-person instruction, and **in-person attendance/participation in labs, exams etc. is mandatory (no exceptions)**, it is important to consider and be aware of how COVID/illness may impact your semester.

First and foremost, you must keep up to date with and follow all York University guidelines that seek to keep all members of the campus community safe. These can be found at the following web addresses:

- https://www.yorku.ca/bettertogether/2022/08/29/get-ready-for-return-to-campus/
- https://www.yorku.ca/bettertogether/
- https://students.yorku.ca/covid-info

Regarding BIOL 2030 specifically, the course has been designed to mitigate any impact that COVID/illness may have on your performance. These measures include the following:

- With the exception of EXAM 3 (i.e. the final exam held during the official exam period), **no documentation or reason is requested or required if a student misses an exam or other evaluated component of the course.**
- If you miss lecture due to illness, lecture notes are posted online after class. Also, you can make an appointment with the course director to discuss any missed material.

What if COVID/illness impacts my semester? (cont.)

- Students are permitted to make audio recordings of lectures in class, so you can source these from classmates or have a friend make a recording for you if you are ill and know you won't be able to make it to class.
- If you miss **EXAM 1** or **EXAM 2**, make-up assignments can be undertaken *in lieu* of a missed exam (see course outline section **Missed EXAM 1 and/or EXAM 2 Policies**)
- If you miss a lab, you can write the lab quiz the week following (see course outline section **Laboratories and missed labs Policies**). Please keep in mind that only the best 8 of 9 labs are counted towards
- If you miss the Lab 5 marked dissection, we will do all that we can to provide a second opportunity to undertake a marked dissection (see course outline section **Laboratories and missed labs Policies**)

Experiential Education and E-Learning

Accessory Laboratory materials (images, videos), Lecture slides on eClass

University Policies

Academic Honesty and 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/

A note on sharing assignments, tests, exams:

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 wilfully 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.

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.

Student's 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 & Disability Services - http://cds.info.yorku.ca/
Counselling & Disability Services at Glendon - https://www.glendon.yorku.ca/counselling/
York Accessibility Hub - http://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 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 http://www.registrar.yorku.ca/pdf/exam_accommodation.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/