

Department of Biology Course Outline



SC/BIOL 1000 3.0 BIOLOGY I - CELLS, MOLECULAR BIOLOGY AND GENETICS - Winter 2024

Course Team

First Year Biology Office: [LSB](#) 102

Below are key people who are involved in running the course. Contact us when you need to – we are here to help you succeed.

Course Director(s):

Section Name	Pronouns
M Prof. Charlotte de Araujo 	she/her/hers
N Prof. Nezeke Alli 	she/her/hers

Laboratory Director: Dr. Nicole Nivillac

Laboratory Coordinator: Alexandra Pislaru

Days, Times, & Locations

Lecture Schedule

Section M: MWF 8:30 60 min Keele [LAS](#) A

Section N: TR 17:30 90 min Keele [LAS](#) A

Laboratory Schedule

Laboratory times and places vary by course section and lab section. To find out when and where your labs will be held, please consult the university online course information site for your lab section and the laboratory schedule found in the laboratory manual and on the laboratory eClass site.

Contact

We are here to help.

What are student hours? Student hours are dedicated times through the week for the course instructor to meet with YOU. Join in to introduce yourself, ask questions, or discuss content from the course-

Student hours vary by section. Please consult the course eClass site for details.

Lecture Email (all sections):

b1000lec@yorku.ca

Laboratory Email (all sections):

b1000lab@yorku.ca

- Please adhere to the email code described under “Course Policies”.
- Please do not use eClass messenger.
- To ensure that your message is seen on time, please do not use the instructor’s personal email.
- Please include your Lecture Section in the subject line of your email. We will try to respond to email within two working days, but this is not always possible, so please be patient.

Course Format

In-person lectures and laboratories supported with online activities and resources.

Study Spaces on Campus

<https://www.library.yorku.ca/web/blog/2023/03/01/looking-for-a-study-space-try-one-of-yuls-student-approved-spots-to-study/>

Course Description

An introduction to major unifying concepts and fundamental principles of biology, including evolution and cell theory. Topics include cells, biological energetics, metabolism, cell division and genetics. The laboratory and lecture components must be

passed independently to pass the course. Three lecture hours per week; three laboratory hours in alternate weeks. One term. Three credits.

Prerequisites (Strictly enforced)

OAC Biology or 12U Biology or SC/BIOL 1500 3.00; OAC Chemistry or 12U Chemistry or SC/CHEM 1500 4.00. Course credit exclusions: SC/BIOL 1010 6.00; SC/BIOL 1410 6.00.

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Land Acknowledgement

York University recognizes that many Indigenous Nations have longstanding relationships with the territories upon which York University campuses are located that precede the establishment of York University. York University acknowledges its presence on the traditional territory of many

Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, and the Huron-Wendat. It is now home to many First Nation, Inuit, and Métis communities. We acknowledge the current treaty holders, the Mississaugas of the Credit First Nation. This territory is subject of the Dish with One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region.

Resources

Required Textbooks and Manuals

- “Biological Science”, 3rd Canadian Edition. Freeman, et al., Pearson Publishers. Also used for BIOL 1001. Available on reserve in Steacie Library.
- BIOL 1000 Winter 2024 Laboratory Manual (only available via the York Bookstore). You must purchase the manual before Lab 1 begins.
- Other readings may be assigned during the course and will be made available.

iClicker Response System

- Needed for in-class participation (part of activity grade).
- Via mobile device or computer.
- Registration details available on lecture course website.
- Free of charge.

Laboratory Personal Protective Equipment

- Laboratory coat and safety eyewear during each in-person lab
- Available in the York Bookstore
- **If you lack any of these items, we cannot permit you in the lab for safety reasons and a makeup lab cannot be offered resulting in a grade of zero.**

Course Websites

- This course has two eClass sites: a lecture eClass site and a separate laboratory eClass site
- <http://eclass.yorku.ca>
- It is necessary to refer to the eClass sites daily to remain up to date with course progress and developments.

Other Course Resources

- Access to a computer with reliable internet. If needed, you may be able to borrow a laptop: <https://www.yorku.ca/bettertogether/2020/03/19/register-to-borrow-a-laptop-from-york-u/>
- The course also utilizes Zoom video conferencing. Please note that any access to zoom, whether through desktop client or web browser, should be done through [Passport York's SSO for authentication](#).
- Deliverables/assessments might need to be submitted to Turnitin. Details for setting up a Turnitin account can be found in the laboratory manual and laboratory eClass site.

General Academic Resources

Please note that the university houses many support centers to assist with various needs and to assist in the development of skills for success. Some are highlighted at the end of this document and in the lab manual. Of utmost importance is the Learning Skills Services <https://www.yorku.ca/scld/learning-skills/>.

Technology Checklist:



Internet-enabled computer



Zoom installed on computer



Access to reliable internet



Webcam



Microphone

Evaluation

Research about learning strongly suggests that the most important factor in learning is doing the work of reading, writing, recalling, practicing, synthesizing, and analyzing. Learning happens best when people actively engage with material on a consistent basis, and that is why we have high standards in this course. We are confident that, with appropriate effort, you **ALL** can meet those standards.

When possible, we also try to reduce unintentional bias in grading by, for example, grading assignments one question at a time (grading all of question 1 before grading any of question 2), grading anonymously, and using rubrics. These also help improve consistency in marking.

Evaluation Breakdown

Lecture Component	80%	10%	Activities	Please see details below
		20%	Term Test 1	1 hour - Online
		20%	Term Test 2	1 hour - Online
		30%	Final Exam	2.5 hours - In- person Scheduled by the Registrar's office
Laboratory Component	20%	20%	See Lab eClass site for lab material and grade weighting.	
Total	100%	100%		

- Term Test dates (Section M) - scheduled during lecture
- Term Test 1 - Friday Feb 16th at 8:30 a.m.
- Term Test 2 - Friday March 22nd at 8:30 a.m.

- Term Test dates (Section N) - scheduled during lecture
- Term Test 1 – Thursday Feb 15th at 5:30 PM
- Term Test 2 – Thursday March 21st at 5:30 PM
- Please note that both lecture and laboratory components must be passed independently to pass the course.
- Midterms and exams will be comprised of multiple choice and short answer questions when possible. Detailed information will be provided on eClass closer to each test.
- Midterms will be delivered over eClass during class time. You can take the midterms wherever you have access to internet. It is crucial that you have stable internet during the exams. Make sure you plan to have stable internet at those times.
- The eClass midterm questions will be delivered in random order. Students will not be able to go back and forth in the exam and change their answers on the midterms.
- The **final exam is cumulative**. Students must be able to be physically present on the York campus to write the final exam. Please note that to be eligible to write the final examination, students **must write at least one term test**.
- Activities vary and are designed to enhance your learning. When used properly, they can help you stay on track, help you understand the material, and help you identify what you do not understand. These include online quizzes, in-class clicker questions, and other activities.
- We appreciate that grades are important to everyone. To be fair and consistent with the entire class, individual grades are not negotiable. We cannot provide “extra credit” assignments. Grades are only open to re-evaluation in case of a grading error. Please see reappraisals below.

Reappraisals

- If you think a lecture component was marked incorrectly, you must submit a written paragraph detailing your rationale to the lecture email noted above, no later than 1 week after receiving your mark. To consider your request, your rationale must be based on academic grounds. This means that you must make a valid academic argument 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. If it is determined that you have provided sufficient academic grounds, the assessment will be regraded. Please note that re-marking can result in the mark being raised, confirmed, or lowered. Also note that the whole assessment might be regraded.
- For reappraisals of laboratory work, please refer to the BIOL 1000 Lab Manual.

Missed activities, term tests, and final exam

Please see the course policy section.

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

Important Dates

Please see important assessment dates in the evaluation section.

Last Day to drop the course without receiving a grade: **March 11, 2024**

Last Day to withdraw from the course and receive “W” on transcript: **April 8, 2024**

For other important administrative dates, please consult the Registrar’s website > Important dates.

Laboratory Information

Laboratory times and places vary by course section and lab section. Please see the Laboratory Schedule posted on the lab eClass website and in the lab manual.

Please ensure that you have purchased your lab manual (available via the bookstore) and have completed all the pre-lab requirements before Lab 1 begins.

Labs officially start the week of January 15, 2024 for all groups (1-4).

Lab 1 is not in-person and will be online. Lab 1 should be conducted on your own and without a lab partner. Please consult the laboratory eClass page or the lab manual as soon as possible to determine the due date for this lab.

Lab 2 and the remainder labs will be in person. Again, please consult the lab schedule in the lab manual or on the lab eClass site for dates, times, locations, and other information.

The last day to make permanent lab switches and to enrol in the course is 11:59pm, Sunday January 21st, 2024.

Copyright Information

Please note that ALL material associated with this course, including any online recordings, quizzes, tests, etc. are to be used for personal study purposes only. They cannot be downloaded, uploaded, shared, sold, or distributed in any way. Unauthorized distribution in any form can lead to violation of Canadian Copyright Law and Academic Misconduct charges under York University Senate Policy. 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. This policy also applies to personal audio recordings of lectures.

Course Policies

Policy for a Missed Term Test or Activity | Built-in Accommodation

Built into the lecture assessment scheme, is accommodation for various unexpected situations (illness, technological difficulties, other life emergencies, etc.) with certain conditions, as described below:

- The lowest 20% of your activity points will be automatically dropped from your grade. This includes zeroes or missed activities. No notification or documentation is required.
- The weight of the lowest term test score will be automatically transferred to the final exam, if the final exam grade is higher. This applies to one term test only and includes a zero or a missed term test. No notification or documentation is required. Given this accommodation, please note that there are no makeup term tests. Also, please remember that students **must write at least one term test** to be eligible to write the final exam.
- Built-in to all deadlines is a one-day extension. For example, if the time to complete a specific deliverable is calculated to be 2 days, 3 days in total are provided. **All due dates posted will already include this one-day extension.**

Policy for a Missed Final Exam

- If you miss the final exam, you must formally apply for special consideration to re-write at an alternate date (Deferred Standing). Approval or rejection of your application and the determination of the alternative date is decided by a specific committee and not your instructor.
- The protocol for this request is outlined on the Registrar's website > Deferred Standing. Briefly, students submit a filled Deferred Standing Agreement (DSA) with appropriate documentation to the instructor for signature. Instructors will not grant deferred standing via this DSA form. Instead, students then submit an academic petition to their home faculty. Please note that deadlines for such applications are very quick and that the final petition and all associated documents must be submitted to the Office of the Registrar's in less than one week from the final exam date.
- The format of the deferred final exam for this course may be essay, short answer, and/or multiple choice.

Policies for Missed Laboratory Components

Please consult the laboratory manual as well as the laboratory eClass page.

Policy for Emails and General Communication

Email Code

- . Use yorku email account only
- . Subject Line: Course code, section, & descriptor
- . e.g. “BIOL1000 – Lecture M – question regarding kinases”
- . Include full name & student number so that we can verify your identity.
- . Please do not use eClass messenger.
- . Please only used assigned course email

Please be Scholarly

- . Proper sentences & Proper spelling. No texting acronyms.
- . Please run a grammar & spell check
- . Double check clarity of content
- . Be certain of the facts & communicate any uncertainty
- . Use reputable sources. Please see <http://www.yorku.ca/webclass/module4a.html>

Policy for Recording Lectures

Photographs or video recordings of any portion of the lectures (including slides) are not permitted. Please see the Copyright Information Section above.

Audio recordings are permitted provided they are used as a personal study aid only. They may not be sold, passed on to others, or posted online. Lectures can only be recorded from your seat. No recording devices are permitted at the front of the room, including front table(s), the lectern, and computer area.

Lectures will be recorded by your instructor when circumstances permit. However, if a recording fails due to technology problems, human error, or any other reason, the course instructor will not be able to re-record the material.

Whether recorded by the instructor or students, the Copyright Information described in this outline strictly apply to such recordings.

University Policies

Grading Scheme

In accordance with the York University Undergraduate Calendar Regulations, the letter grades assigned in undergraduate courses at York conform to the descriptions and grade ranges shown here: <https://calendars.students.yorku.ca/2022-2023/grades-and-grading-schemes>

Academic Honesty and Integrity

Academic misconduct undermines the values of honesty, trust, respect, fairness, and responsibility that we expect in this class. York University provides supports such as academic

integrity workshops to ensure that all students understand the norms and standards of academic integrity that we expect you to uphold.

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. Please review and familiarize yourself with the policy.

There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve your research and writing skills, and cope with University life. Students are expected to review the materials on the Academic Integrity website:

Examples of actions that do not adhere to York's Academic Integrity Policy include:

- Plagiarism (passing off someone else's work as your own)
- Accessing unauthorized sites for assignments or tests
- Unauthorized collaboration on assignment and exams
- Uploading work to third party repository sites (e.g., Course Hero, One Class, etc.)
- Scanning, sharing, uploading, or publishing exams, tests, or scholarly work

For more information on what academic integrity is and why it is important see:

<https://spark.library.yorku.ca/academic-integrity-what-is-academic-integrity/>. Information on the process of investigations into breaches of academic honesty:

<https://spark.library.yorku.ca/academic-integrity-breach-of-policy-on-academic-honesty/>

Important Note from the FSc Committee on Examinations & Academic Standards (CEAS):

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. Whenever a student submits work obtained through an external site (e.g., Course Hero, Chegg), the **submitting student will be charged with plagiarism** and the **uploading student will be charged with aiding and abetting**. To avoid this risk, students are urged not to upload their work to these sites.

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.

Accessibility

York University is committed to principles of respect, inclusion, and equality of all persons with accessibility needs across campus. The University provides services for students with accessibility needs (including physical, medical, learning, and psychiatric needs) 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 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 accessibility 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/>

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 submit a request at least 3 weeks before the exam period begins. The form can be obtained from Student Client Services, Student Services Centre, or online at Registrar's Office website > Exams and Tests > Religious Observance.

Student and Instructor 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-and-or-harassing-behaviour-in-academic-situations-senate-policy/>.

Academic accommodation refers to educational practices, systems and support mechanisms designed to accommodate diversity and difference. The purpose of accommodation is to enable students to perform the essential requirements of their academic programs. At no time does academic accommodation undermine or compromise the learning objectives that are established by the academic authorities of the University.

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:

<https://calendars.students.yorku.ca/2021-2022/policies-and-regulations>

Inclusive Teaching Statement

- We are committed to fostering an environment for learning that is inclusive for everyone regardless of gender identity, gender expression, sex, sexual orientation, race, ethnicity, ability, age, class, etc.
- All students in the class, the instructor, and any guests should be treated with respect during all interactions.
- It our hope that our class will support diversity of experience, thought, and perspective.
- Please feel free to contact us via email or in person to let us know about any experiences you have had related to this class that have made you feel uncomfortable.
- We will continually strive to create inclusive learning environments and would therefore appreciate your support and feedback.
- We welcome emails or in-person communications to let us know your preferred name or pronoun.

Community Guidelines

The following values are fundamental to academic integrity and are adapted from the International Center for Academic Integrity. In our course, we will seek to behave with these values in mind. **As a teaching team we will mirror these values.**

As students, we will...

Honesty	Honestly demonstrate our knowledge and abilities on assignments and exams Communicate openly without using deception, including citing appropriate sources
Responsibility	Complete assignments on time and in full preparation for class Show up to class on time, and be mentally/physically present Participate fully and contribute to team learning and activities
Respect	Speak openly with one another, while respecting diverse viewpoints and perspectives Provide sufficient space for others to voice their ideas
Fairness	Contribute fully and equally to collaborative work, so that we are not freeloading off others Not seek unfair advantage over fellow students in the course

Trust	Not engage in personal affairs while on class time Be open and transparent about what we are doing in class Not distribute course materials to others without authorization
Courage	Say or do something when we see actions that undermine any of the above values Accept a lower or failing grade or other consequences of upholding and protecting the above values

This class statement of values is adapted from Tricia Bertram Gallant, Ph.D.

Assistance for Students (Academic and Well-Being)

Academic Advising*: <https://www.yorku.ca/science/academic-advising/> * Departments also offer program-specific advising. Check with your Department's Undergraduate Office.

Centre for Human Rights, Equity, and Inclusion: <https://rights.info.yorku.ca>

Centre for Indigenous Students Services: <https://aboriginal.info.yorku.ca/>

Good2Talk 24-hour Ontario Student Helpline: 1-866-925-5454 /Text: GOOD2TALKON to 686868

Keep.meSAFE: <https://myssp.app/keepmesafe/ca/home>

Learning Commons (general academic learning supports including library research, time management, study skills, career planning, etc.): <https://learningcommons.yorku.ca/>

Peer Assisted Study Sessions (PASS): <https://www.yorku.ca/colleges/bethune/get-help/pass/>

Peer Tutoring: <https://www.yorku.ca/colleges/bethune/get-help/peer-tutoring/>

Sexual Violence Response and Support: <https://thecentre.yorku.ca>

Student Counselling, Health & Well-being: <https://counselling.students.yorku.ca/>

Support Services for International Students: <https://yorkinternational.yorku.ca/international-student-support/>

Writing Services: <https://www.yorku.ca/colleges/bethune/get-help/writing/>

York University Student Services: <https://family.yorku.ca/student-services/#SCD>

York University Student Well-being Resources: <https://www.yorku.ca/well-being/resources/students/>

Course Overview

This course introduces you to biological terminology and major concepts that underlie this field. The scope of material is broad, and we encourage you to consider common threads and themes that extend across the various topics. Biology, Environmental Biology and Biochemistry majors will develop a foundation for further study in biology and related areas; all students will develop

familiarity with the field and gain skills that can be applied in other courses and settings. This course is intended to help develop the scientific literacy and critical thinking skills required of citizens in modern society.

The laboratory is a key part of this course, as experimentation, observations, and communication of biological phenomena are important aspects of “doing” (and understanding) science. The skills gained in the laboratory component will be valuable in future laboratory courses, and often can be applied in other academic or workplace situations.

In addition to learning about biology, this course has been designed to be an experience where you will be actively engaged in lecture material and have opportunities to reflect on your experience as a learner and develop effective learning strategies. Following a regular 5-stage study cycle, you will have structured, intentional activities for you to participate in before, during, and after class, to help you become successful learners within and beyond BIOL1000. To be successful in the lecture component of this course, you must attend lecture, actively participate, and complete your work before, during and after class.

Lecture Topics will include (Topic-specific learning outcomes are available on the course site)

- Learning Strategies
- Evolution
- Biological Macromolecules
- Cell Structure/Function
- Membrane and Transport
- Energy and Enzymes
- Respiration and Photosynthesis
- Cell Division
- DNA Structure and Replication
- Gene Expression
- Biotechnology
- Genetics
- Cell Communication

Learning Outcomes

Upon successful completion of the lecture component, students should be able to:

- Describe and use several effective learning strategies.
- Use biological terminology with correct scientific meaning and appropriate context.
- Explain selection and its role in evolution.
- Describe the cell theory in biology and relate this theory to other biological concepts.
- Identify key similarities and differences between bacteria, archaea, and eukaryotic cells.
- Describe the role of energy in living systems, and how it drives the activities of life.

- . Describe the structure and importance of membranes, and different mechanisms of membrane transport.
- . Compare and contrast major biochemicals and biochemical pathways (including cellular respiration, photosynthesis, cell signaling).
- . Describe the general structures and processes involved in gene expression.
- . Compare and contrast different mechanisms regulating gene expression.
- . Describe processes of cell division and how the cell cycle works in eukaryotic cells.
- . Describe how chromosome movement during meiosis reflects Mendel's principles of independent assortment and segregation.
- . Solve Mendelian genetics problems involving one or two genes.
- . Demonstrate the relationship between genes, alleles, proteins, and phenotype.
- . Describe mechanisms that can lead to genetic diversity, identify patterns of inheritance relating to sex linkage, gene linkage, codominance, and incomplete dominance.
- . Describe basic techniques used in recombinant DNA technology and their significance.

Upon successful completion of the laboratory component, students should be able to:

- . Carry out basic biological laboratory activities with safety and reliability in a laboratory setting.
- . Develop hypotheses and make predictions for simple biological laboratory experiments.
- . Design simple experiments and conduct them in a laboratory, including the collection and interpretation of your own data
- . Work independently and effectively in a laboratory setting
- . Make descriptive observations and critically analyze data.
- . Prepare clear, appropriately labeled & formatted figures and tables for presentation of biological results.
- . Prepare components of a basic biology laboratory report
- . Describe what constitutes plagiarism. Prepare written work that abides by principles of academic integrity.
- . Work effectively and collegially with others, especially in a laboratory setting