



Department of Biology Course Outline

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

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.

Course Prerequisites and Exclusions

Prerequisites: 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.

Teaching Team and Schedule

Course Director: Professor Paula Wilson

Laboratory Director: Professor Nicole Nivillac

Course Instructors:

Section A and D: Professor Paula Wilson (she/her)

Section B: Professor Nicole Nivillac (she/her)

Section C: Professor Yi Sheng (she/her)

Laboratory Coordinator: TBA

Administrative Support: TBA

Lecture Schedule

Section A: Monday, Wednesday and Friday 1:30-2:30pm LAS A

Section B: Monday, Wednesday and Friday 1:30-2:30pm CLH I

Section C: Monday and Wednesday 5:30-7:00pm VH A

Section D: Monday, Wednesday and Friday 8:30-9:30am 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 Moodle site.

Contacting your Teaching Team

Lecture Email (all sections, all instructors) b1000lec@yorku.ca

- please include your course section and the topic of the email in the subject line.
- please include your full name and student number at the end of your message
- please adhere to the email policy described in Course Policies
- to ensure you receive a response, please do not use eClass messenger or your instructor's personal email.

Laboratory Email (all sections): b1000lab@yorku.ca

- use this email to contact lab coordinator and lab director

Student Drop-in Hours

Each instructor will be available for an hour a week outside of lecture time to answer any questions you have. Don't be shy this time is for you!! Please see your specific lecture section eClass site for details.

Important Dates

Please see assessment dates in the evaluation section.

Laboratories for this course begin the **week of September 16, 2024** for all groups

Last Day to enrol in this course and/or change lab section: **September 18, 2024**

Last Day to drop the course without receiving a grade: **November 8, 2024**

Last Day to withdraw from the course and receive "W" on transcript: **December 3, 2024**

For other important administrative dates, please consult the Registrar's website under <Important Dates>.

Resources - Required Text and Materials

LECTURE

Required Textbooks and Manuals

- "Biological Science", 3rd Canadian Edition. Freeman, et al., Pearson Publishers*. Also used for BIOL 1001.
- Digital access to Mastering Biology, Pearson Publishers*

- ****Both the text and Mastering Biology are required. If you need both, the [York Bookstore](#) will have the cheapest option as a package which will be available sometime in the first week of classes. We will post a notice in eClass and by course announcement when that package is available. You will also be able to purchase Mastering Biology without the text from the bookstore.***
- BIOL 1000 Fall 2024 Laboratory Manual (only available via the York Bookstore). **You must purchase the manual before Lab 1 begins** (week of Sept 16).
- Other readings may be assigned during the course and will be made available.

iClicker Response System (free of charge)

- For in-class participation (part of activity grade).
- Registration details available on course website.

LABORATORY

Simbio Account (see lab manual and lab eClass site for details)

Turnitin Account (see lab manual and lab eClass site for details)

Laboratory Personal Protective Equipment

- Laboratory coat and safety eyewear during each in-person lab
- Available in the York Bookstore

Important Safety Note: if you lack any of these items, we cannot permit you in the lab and you will receive a zero for the lab.

GENERAL RESOURCES

Course Websites

- This course has two eClass sites: a lecture eClass site [SC/BIOL 1000 Biology I (Fall 2024)] and a separate laboratory eClass site [SC/BIOL A, B, C, D – Biology I (Fall 2024) (Labs)]
- <http://eclass.yorku.ca>
- Please refer to the eClass sites daily to remain up to date with course progress and developments.

Technology

- 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/>
- Course meets may occasionally be delivered over Zoom. Please note that access to zoom should be done through [Passport York's SSO for authentication](#).

Evaluation

Please note that both lecture and laboratory components must be passed independently (each with 50% or higher) to pass the course.

Lecture Component 80% of final grade	10%	Activities	Please see details below
	20%	Midterm Test 1	One hour In- person Sun Oct 6 at 11am
	20%	Midterm Test 2	One hour In- person Sun Nov 3 at 11am
	30%	Final Exam	In-person scheduled by Registrar during December Exam period
Laboratory Component 20% of final grade	20%	See Lab eClass site for details	
Total	100%		

Please note:

- The final exam is cumulative.
- To be eligible to write the final examination, students **must write at least one term test**.
- Activities may include weekly quizzes, in-class clicker questions and activities, Mastering Biology work and other assignments. They are designed to enhance your learning by helping you stay up to date, test your understanding, identify points of confusion and reflect on your learning strategies.
- To be fair and consistent with the entire class, individual grades are not negotiable. We cannot provide “extra credit” assignments.

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 September 16 for all groups (1-8).

Lab 1 is online (not in person). 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 all other labs will be in person.** 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, Wednesday September 18, 2024.

Course Overview and Learning Outcomes

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 in other academic or workplace situations.

In addition to learning about biology, this course has been designed to be an experience where you will have opportunities to reflect on your experience as a learner and develop effective learning strategies (another important life skill). Following the 5-stage study cycle, you will have structured, intentional activities for you to engage in before, during, and after class. 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.

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 regular 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!

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

- Apply and reflect on effective learning strategies.
- Apply the policies of academic integrity to course work completed both independently and with peers.

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

- Relate the structure of major components of the cell to their function in cells (for example membrane, organelles, macromolecules).
- Explain how cells obtain, store, transform and use energy.
- Describe, compare and contrast the molecular processes and regulation of gene expression.
- Explain how genetic information is passed and changed from one generation of cells to the next.
- Apply the principles of inheritance to Mendelian genetics problems.
- Solve problems and/or case studies based on course concepts.

Upon successful completion of the laboratory component, you 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 in a laboratory setting.

See lecture schedule on eClass for specific topics and readings.

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.

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.

Course Policies

Policy for a Missed Midterm Test or Activity

Accommodation for unexpected situations (illness, technological difficulties, emergencies, etc.):

- 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 midterm test score will be automatically transferred to the final exam, if the final exam grade is higher. This applies to one midterm test only and includes a zero or a missed test. No notification or documentation is required. Given this accommodation, please note that there are no makeup tests. Please remember that students **must write at least one midterm test** to be eligible to write the final exam.

Policy for a Missed Final Exam

- If you miss the final exam, you must formally apply for Deferred Standing. To request deferred standing you must complete a Deferred Standing Agreement (DSA) Form (see link below) and submit it with appropriate documentation to the instructor. Instructors will use the form to indicate that you must petition your home Faculty for deferred standing. Instructors will sign the form and return it to you to include in your petition package. The petition and associated documents must be submitted to the Office of the Registrar in less than one week from the final exam date.

https://registrar.yorku.ca/pdf/deferred_standing_agreement.pdf

<https://myacademicrecord.students.yorku.ca/academic-petitions>

Note: The format of a deferred final exam may be different from the original final exam.

Policies for Missed Laboratory Components

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

Policy for Reappraisal of Written Work

If you think a question was marked incorrectly, you must complete a BIOL 1000 grade reappraisal form and provide academic grounds for regrading (a valid academic argument for why your answer is correct and the grade is wrong). If it is determined that you have provided sufficient academic grounds, the assessment will be regraded. Please note that reappraisals can result in your grade being raised, confirmed, or lowered. Be aware that often the entire test/exam/assignment is regraded.

For reappraisals of laboratory work, please refer to the BIOL 1000 Lab Manual.

Policy on the Use of Generative AI

Generative AI (ChatGPT, Microsoft Co-pilot, Claude, DALL-E, and similar platforms) is a tool that can be useful in many contexts and not useful in others. For this course, its use is prohibited in some cases. Please see details below.

The use of Generative AI when completing any course assessment or activity is prohibited.

Why? Because we want to review and assess what you understand, know and can do.

Midterms and Exams are written in person where electronic devices and other external resources are not permitted; thus the use of generative AI or any online or other resource is strictly prohibited.

Regarding quizzes, assignments and in-class activities, the ability to demonstrate your understanding of course content, problem solve, reflect on your learning and communicate your thoughts in your own words are important skills that we want you to develop in this course. Generative AI in this case can undermine your skill development, and affect our ability to better understand you as a student and how we can best support your learning. Thus the use of generative AI is not permitted for these activities.

In the laboratory we are interested in understanding and assessing your ability to organize, analyse and communicate scientific information. In order to demonstrate these skills, you need to complete lab assignments on your own, and use of Generative AI for this work is not permitted.

How can I use Generative AI in this course? 1. *Test Yourself:* You may want to experiment with using Generative AI to help you test your own knowledge, understanding and/or skills. For example you might want to ask it to generate multiple choice or short answer questions, and then try to answer them for practise. Be aware, however, that Generative Artificial Intelligence is NOT REALLY INTELLIGENT at all. It is sophisticated software that puts strings of words together based how often it has encountered these words associated together (and how) during its “training”* (see <https://ig.ft.com/generative-ai/> for more details about how generative AI works). It can make errors, not make sense, and even hallucinate information that is totally false. So we suggest that if you use it in this way, you always check your answers by referring to course materials and resources. 2. *Explain material:* Generative AI may help you if you are struggling to understand a concept and the course materials are not helpful or confusing. However, remember its limitations (above). Remember, you can chat with your instructor after class or during weekly student drop in hours, or take advantage of free peer tutoring and PASS sessions at Bethune College. Easier and arguably more trustworthy. 😊

Please note: unauthorized use of generative AI is a form of academic dishonesty and will be treated as a breach of academic integrity.

Educate yourself: generative AI has massive energy costs, with potential impacts on climate change.

A note on email messages: I'm interested in getting to know you better and better understanding how I can help you. To help me with this goal, I'd like you to write your emails yourself and in your own words. In return, I commit to writing any messages to you *in my own words*.

Policy for Emails and General Communication

- how to address your professor: Dear Professor [last name] -please avoid using "miss" for women
- use your yorku email account
- in subject line include course code, section & descriptor eg BIOL 1000A -question on telomerase
- end message with your full name & student number
- do not use eClass messenger – use course emails only
- be scholarly – use full sentences, be respectful, write your own messages, not ChatGPT 😊

Policy for Recording Lectures

Normally lectures will be recorded by your instructor. If a recording fails or is not possible due to technology problems, human error, or any other reason, the course instructor will not be able to re-record the material.

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.

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

Final Grades

Final grades can only be changed if an error has been made. Final course grades may be adjusted to conform to Faculty grade distribution guidelines.

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 assignments and exams
- Using Generative AI (such as ChatGPT) or other sources to craft answers
- 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>

Helpful Resources for Students (Academic and Well-Being)

Bethune College Student Support: <https://www.yorku.ca/colleges/bethune/help/>

Learning Skills Services: <https://www.yorku.ca/sclld/learning-skills/>

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/>